

Critical Release Notice

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The content of this customer NTP supports the
SN06 (DMS) software release.

Bookmarks used in this NTP highlight the changes between the NA015 baseline and the current release. The bookmarks provided are color-coded to identify release-specific content changes. NTP volumes that do not contain bookmarks indicate that the NA015 baseline remains unchanged and is valid for the current release.

Bookmark Color Legend

Black: Applies to content for the NA015 baseline that is valid through the current release.

Red: Applies to new or modified content for NA017 that is valid through the current release.

Blue: Applies to new or modified content for NA018 (SN05 DMS) that is valid through the current release.

Green: Applies to new or modified content for SN06 (DMS) that is valid through the current release.

Attention!

Adobe® Acrobat® Reader™ 5.0 is required to view bookmarks in color.

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Standard release 16.03 for software release SN06 (DMS). Updates made for this release are shown below:

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Volume 2

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Volume 3 - 4

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DMS-100 Family

North American DMS-100

Alarm Clearing and Performance Monitoring Procedures

Volume 4 of 4

LET0015 and up Standard 14.02 May 2001

DMS-100 Family

North American DMS-100

Alarm Clearing and Performance Monitoring Procedures

Volume 4 of 4

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1 Peripheral module alarm clearing procedures (continued)

Introduction

This chapter provides alarm clearing procedures for the peripheral module (PM). Peripheral module alarms appear under the PM header of the alarm banner in the MAP display. All procedures contain the following sections:

- Alarm display
- Indication
- Meaning
- Result
- Common procedures
- Action

Alarm display

This section indicates how the alarm appears at the MAP terminal.

Indication

This section indicates the location of the alarm indication, the design of the alarm, the affected subsystem, and the alarm severity.

Meaning

This section indicates the cause of the alarm.

Result

This section describes the results of the alarm condition.

Common procedures

This section lists common procedures that you follow during the alarm clearing procedure. A common procedure is a series of steps that repeats in maintenance procedures. The removal and replacement of a card are examples of a common procedure. The common procedures are in the common procedures chapter in this NTP.

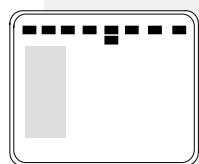
Do not use common procedures unless the stepaction procedure directs you.

Action

This section provides a summary flowchart of the alarm clearing procedure. A detailed step-action procedure follows the flowchart.

PM MLIU critical

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext
.	.	.	.	1MLIU	.	.	.	.
				C				

Indication

At the MTC level of the MAP display, MLIU (preceded by a number) appears under the PM header of the alarm banner. The MLIU indicates a critical alarm for a CCS7 multiple link interface unit (MLIU).

Meaning

A minimum of one MLIU is system busy or system busy not accessible.

Impact

Out of service MLIUs cause signaling links that associate with the MLIUs to be out of service.

The number under the PM header in the alarm banner indicates the number of MLIUs affected.

Common procedures

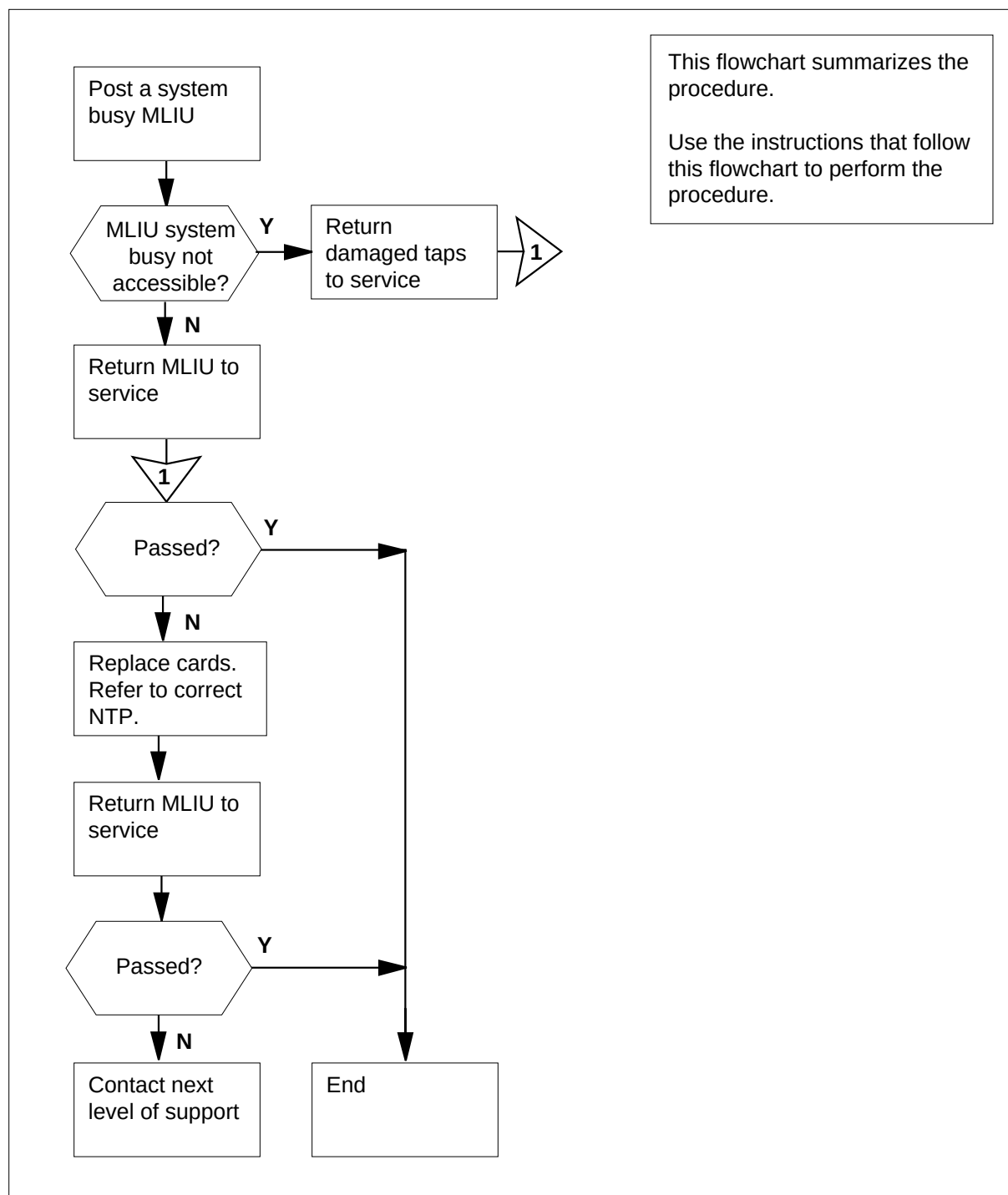
This procedure refers to *Activating CCS7 links*.

Action

This section provides a summary flowchart of the procedure and a list of steps to clear an alarm. A detailed step-action procedure follows the flowchart.

PM MLIU critical (continued)

Summary of clearing a PM MLIU alarm



PM MLIU critical (continued)

Clearing a/an PM MLIU alarm

At your current location

1



WARNING

Possible action that affects service

Do not POST, RTS, and LOAD multiple sets of MLIUs.
Finish work on one set of MLIUs before you work on another set.

The system automatically attempts to reload the system busy MLIUs and return the MLIUs to service. Monitor PM181 logs to determine if the system performed three autorecovery attempts.

Note: After three failed autorecovery attempts, a forced autoloading pending maintenance flag appears for the posted MLIU. When the system is in a forced autoloading pending state, five minutes pass before another autorecovery attempt occurs.

If PM181 logs		Do
indicate an MLIU failed three autorecovery attempts and is in a forced autoloading pending state		step 4
indicate the system busy MLIUs performed a correct automatic recovery		step 68
2 Determine if all the MS alarms cleared.		
If all the MS alarms		Do
did clear		step 11
did not clear		step 3
3 Perform the correct MS procedure in this document to clear the alarm. Complete the procedure and return to this point.		
4 Determine if the MLIU critical alarm cleared.		
If the MLIU alarm		Do
did clear		step 68
did not clear		step 5

PM MLIU critical (continued)

- 5 Ascertain which MLIU(s) is causing the alarm condition, type
 >mapci;mtc;pm;post MLIU sysb
 record which MLIU(s) is sysb, then type
 >quit all
 CI:
- 6 To access table LIUINV, type
 >TABLE LIUINV
 and press the Enter key
- 7 Position on the MLIU, type
 >pos MLIU mliu_no
 where, mliu_no is the number of the MLIU returned at step 5
- LIUENAME LOCATION LOAD PROCINFO CARDINFO

 MLIU 11 MS 12 0 2 28 MCA12BE NTEX22CA NTEX76AA NTEX26BA
 64000 EBI
 MLIU 402 MS 8 1 1 12 MCA12BE NTEX22CA NTEX76AA NTEX26BA
 64000 EBI
- 8 Record the location information
 Note: The location is shown under the LOCATION header of the MAP
 display. The example in step 7 indicates that the location is MS.
- 9 Determine the MLIU location recorded in step 8. If the location is LIM, go to
 step 10. If the location is MS, go to step 67.
- 10 Quit from the table LIUINV, type
 >QUIT
 and press the Enter key
- 11 To access the PM level of the MAP display, type
 >MAPCI;MTC;PM
 and press the Enter key.
- 12 To display all system busy MLIUs, type
 >DISP STATE SYSB MLIU
 and press the Enter key.
- 13 To post the first system busy MLIU on the list, type
 >POST MLIU mliu_no
 and press the Enter key.
 where
 mliu_no
 is the number of the selected MLIU (0 to 511)

PM MLIU
critical (continued)

- 14** Determine the state of the posted MLIU.
- | If the state of the posted MLIU | Do |
|---------------------------------|---------|
| is SysB (NA) | step 15 |
| is SysB | step 49 |
- 15** Determine if an FSP alarm under the EXT header of the MAP display is present.
- | If an FSP alarm | Do |
|-----------------|---------|
| is present | step 16 |
| is not present | step 17 |
- 16** Perform the correct procedure in this document to clear the alarm. Complete the procedure and return to this point.
Go to step 51.
- 17** To determine if a condition that affects service for an NIU is present, type **>QUERYPM** and press the Enter key.
- Note:** In the following example, conditions that affect service appear under the heading Potential service affecting conditions .
- Example of a MAP response:*

PM MLIU

critical (continued)

```
PM type:MLIU      PM No.:402  Status: SysB(NA)
LIM: 1  Shelf:1  Slot: 12  LIU FTA:429C 1000
Default Load: MCA12BE
Running Load: MCA12BE
Potential service affecting conditions:
  Msg Channel #0 NA
  Msg Channel #1 NA
  TAP #0 OOS/NA
  TAP #1 OOS/NA
NIU Unit 1 is not inservice
CBUS PORT for NIU Unit 1 is not inservice
LMS States:      InSv      InSv
Auditing :       No       No
Msg Channels:    NA       NA
TAP 2 :          S(NA)    S(NA)
NIU 0 :ISTb      ISTb
Reserved MLIU forms part of CCS7 Linkset: MLIU_LS4 SLC:3
Reserved MLIU forms part of CCS7 Linkset: MLIU_LS3 SLC:2
Reserved MLIU forms part of CCS7 Linkset: MLIU_LS2 SLC:1
Reserved MLIU forms part of CCS7 Linkset: MLIU_LS1 SLC:0
MLIU is not allocated
```

Record the linkset names shown after Linkset.

- 18** Perform the correct NIU alarm procedure in this document to clear the alarm. Complete the procedure and return to this point.

Go to step 65.

- 19** Determine the number of the link interface module (LIM) that associates with the MLIU.

Note: The number of the LIM that associates with the MLIU appears in the second line of the MAP response.

- 20** To post the LIM that associates with the MLIU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no

is the number of the LIM (0 to 16)

Example of a MAP display:

```
LIM  1 ISTb
Unit0: ISTb      Links_00S Taps_00S
Unit1: ManB      2         .
                  2         18
```

PM MLIU critical (continued)

- 21 Determine the state of the LIM.

If the LIM	Do
is InSv or ISTb	step 24
is other than listed here	step 22

- 22 A problem with the LIM produces a PM LIM alarm. Perform the correct procedure in this document to clear the alarm. Complete the procedure and return to this point.

- 23 Determine if the MLIU alarm cleared.

If the MLIU alarm	Do
cleared	step 68
did not clear	step 24

- 24 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP display:

```
LIM 1 ISTb
Unit0: ISTb
Unit1: InSv
Tap: 0 4 8 12 16 20 24 28 32
FBus0: ManB BBBB BBBB BBBB BBBB ---- ---- ----B BB--
FBus1: InSv ...M .I.. .S.. .... ---- ---- ----. ...
```

Note: In the previous example, B under a tap number indicates that the F-bus is out of service. The letter B under a tap number can also indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. The letter M indicates a manual-busy tap. The letter I indicates an in-service trouble tap. The letter S indicates a system-busy tap. A dash (-) indicates an unequipped tap.

- 25 Determine the state of the F-buses.

If the F-buses	Do
are both InSv or ISTb	step 28
are both other than listed here	step 26

- 26 A problem with the F-bus produces a PM LIMF alarm. Perform the correct procedure in this document to clear the alarm. Complete the procedure and return to this point.

PM MLIU

critical (continued)

- 27 Determine if the MLIU alarm cleared.

If the MLIU alarm	Do
cleared	step 68
did not clear	step 28

- 28 To determine the F-bus taps that associate with the MLIU, type
>TRNSL fbus_no
 and press the Enter key.
 where

fbus_no
 is the number of either F-bus (0 or 1)

Example of a MAP response:

```
LIM 1  FBus    0 Tap  0  is on MLIU 101
LIM 1  FBus    0 Tap  1  is unequipped
LIM 1  FBus    0 Tap  2  is on MLIU 110
LIM 1  FBus    0 Tap  3  is on MLIU 104
```

- 29 The system generated a MAP display in step 24. Use this MAP display to determine the state of the F-bus taps that associate with the system busy MLIU.

Note: The tap number shown in the MAP response in step 28 applies to both F-buses.

If the state of	Do
either F-bus tap fluctuates from I to S, or is S	step 35
either F-bus tap is M	step 30
both taps are in service	step 67

- 30 Determine from office records or from operating company personnel why the removal of the tap from service occurred. When you have permission, continue the procedure to return the tap to service.

- 31 To return the F-bus tap to service, type
>RTS FBUS fbus_no tap_no
 and press the Enter key.
 where

fbus_no
 is the number of the F-bus (0 or 1)

PM MLIU critical (continued)

tap_no

is the number of the F-bus tap (0 to 23 or 0 to 35)

	If the RTS command	Do
	passed, and the other tap is M	step 29
	passed, and the other tap is in service	step 32
	failed	step 67
32	To quit from the F-bus level of the MAP display, type >QUIT and press the Enter key.	
33	To post the system busy MLIU, type >POST MLIU mliu_no and press the Enter key. <i>where</i> mliu_no is the number of the MLIU (0 to 511)	
34	To return the MLIU to service, type >RTS and press the Enter key.	
	If the RTS command	Do
	passed	step 59
	failed	step 67
35	To manually busy the tap on F-bus 0, type >BSY FBUS 0 tap_no and press the Enter key. <i>where</i> tap_no is the number of the F-bus tap (0 to 23 or 0 to 35)	
	If the BSY command	Do
	passed	step 37
	failed	step 36

PM MLIU
critical (continued)

- 36

To force the F-bus tap to busy, type

>BSY FBUS 0 tap_no FORCE

and press the Enter key.

where

tap_no
is the number of the tap (0 to 23 or 0 to 35)
- 37

To manually busy the tap on F-bus 1, type

>BSY FBUS 1 tap_no

and press the Enter key.

where

tap_no
is the number of the F-bus tap (0 to 23 or 0 to 35)
If the BSY command	Do
passed	step 39
failed	step 38
- 38

To force the F-bus tap to busy, type

>BSY FBUS 1 tap_no FORCE

and press the Enter key.

where

tap_no
is the number of the tap (0 or 23 or 0 to 35)
- 39

To access table LIUINV to determine if the system busy MLIU is a two-slot or a three-slot LIU, type

>TABLE LIUINV

and press the Enter key.

MAP response:

TABLE: LIUINV
- 40

To display the tuple in table LIUINV for the system busy MLIU, type

>POSITION MLIU mliu_no

and press the Enter key.

where

liu_no
is the number of the MLIU (0 to 511)

Example of a MAP response:

PM MLIU critical (continued)

MLIU 101 LIM 0 1 8 LCC36CH NT9X13CA NT9X75AA
NT9X76AA NT9X78AA FBUS

Note: The tuple in table LIUINV contains the card number NTEX22 if the MLIU is a two-slot LIU. The tuple contains the card number NT9X13 if the MLIU is a three-slot LIU.

	If the tuple	Do
	contains NTEX22	step 41
	contains NT9X13	step 43
41	Replace the NTEX22 card. To replace the card, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
42	Go to step 44.	
43	Replace the NT9X13 card. To replace the card, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
44	To return the tap on F-bus 0 to service, type >RTS FBUS 0 tap_no and press the Enter key. <i>where</i> tap_no is the number of the F-bus tap (0 to 23 or 0 to 35)	
	If the RTS command	Do
	passed	step 45
	failed	step 67
45	To return the tap on F-bus 1 to service, type >RTS FBUS 1 tap_no and press the Enter key. <i>where</i> tap_no is the number of the F-bus tap (0 to 23 or 0 to 35)	
	If the RTS command	Do
	passed	step 51
	failed	step 67

PM MLIU**critical** (continued)

- 46** To reset the MLIU, type
>PMRESET
and press the Enter key.

If the PMRESET command	Do
passed	step 58
failed	step 51

- 47** To manually busy the MLIU, type
>BSY
and press the Enter key.

If the response	Do
is MLIU mliu_no BSY Passed	step 51
is Busying MLIU mliu_no will take a CCS7 resource out of service Please confirm ("YES", "Y", "NO", or "N"):	step 48
is other than listed here (apart from "failed"), including additional messages with the above response	step 67
is MLIU mliu_no BSY Failed	step 49

- 48** To confirm the command, type
>YES
and press the Enter key.
Go to step

- 49** To force the MLIU to busy, type
>BSY FORCE
and press the Enter key.

If the response	Do
is MLIU mliu_no BSY Passed	step 51

PM MLIU critical (continued)

	If the response	Do
	is Busying MLIU mliu_no will take a CCS7 resource out of service Please confirm ("YES", "Y", "NO", or "N"):	step 50
	is other than listed here, including additional messages with the above response	step 67
50	To confirm the command, type >YES and press the Enter key. Go to step 51	
51	To load the MLIU, type >LOADPM and press the Enter key.	
	If the LOADPM command	Do
	passed	step 58
	failed	step 52
52	To test the MLIU, type >TST and press the Enter key.	
	If the TST command	Do
	passed	step 58
	fails, and the system generates a card list that contains cards that are not changed	step 53
	is other than listed here	step 67
53	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the first card on the list.	
54	To replace the card, perform the correct procedure in <i>Card Replacement Procedures</i> to replace the card. Complete the procedure and return to this point.	

PM MLIU critical (continued)

55	To load the MLIU, type >LOADPM and press the Enter key.
If the LOADPM command	
Do	
passed	step 56
failed	step 67
56	To test the MLIU, type >TST and press the Enter key.
If the TST command	
Do	
passed	step 58
fails, and you did not replace more cards on the list	step 57
is other than listed here	step 67
57	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the next card on the list. Go to step 54.
58	To return the MLIU to service, type >RTS and press the Enter key.
If the RTS command	
Do	
passed	step 59
failed	step 67
59	To access the C7LKSET level of the MAP display to determine that the CCS7 link on the MLIU is in service, type >CCS;CCS7;C7LKSET and press the Enter key.
60	To post the linkset that associates with the MLIU, type >POST C linkset_name and press the Enter key. <i>where</i>

PM MLIU critical (continued)

linkset_name

is the linkset name determined in step 17.

Example of a MAP display:

```
Linkset TR000002      InSv
  Traf  Sync
LK Stat  Stat  Resource  Stat Physical Access
1 InSv   Sync    MLIU 8    InSv   DS0A
2 InSv   Sync    MLIU 7    InSv   DS0A
```

- 61** Determine the traffic state of the CCS7 link for the MLIU in use.

Note: The number of the MLIU in use appears under the Resource header on the MAP display. The traffic state of the CCS7 link appears under the Traf Stat header.

If the state of the CCS7 link	Do
is InSv	step 68
is other than listed here	step 62

- 62** Wait eight minutes to see if the CCS7 link terminated on the MLIU establishes again.

If the state of the link	Do
is InSv	step 68
is other than listed here	step 63

- 63** Perform the procedure *Activating CCS7 links* in this document. Complete the procedure and return to this point.

- 64** Determine if the link activated.

If the link activation	Do
passed	step 65
failed	step 67

- 65** Determine if the MLIU alarm cleared.

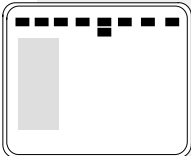
If the alarm	Do
cleared	step 68
decreased in number (for example, changed from 2MLIU to 1MLIU)	step 11

PM MLIU
critical (end)

	If the alarm	Do
	did not clear	step 67
66	Repeat steps 60 to 64 for every linkset for that MLIU.	
67	For additional help, contact the next level of support.	
68	The procedure is complete.	

PM MLIU major

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	1MLIU	.	.	.	.	.
				M					

Indication

At the MTC level of the MAP display, MLIU (preceded by a number) appears under the PM header of the alarm banner. The MLIU indicates a major alarm for a CCS7 multiple link interface unit (MLIU).

Meaning

A minimum of one MLIU is manual busy or manual busy not accessible.

The number under the PM header of the alarm banner indicates the number of MLIUs affected.

Result

The indicated number of MLIUs that are out of service cause signaling links that associate with the MLIUs to be out of service.

Common procedures

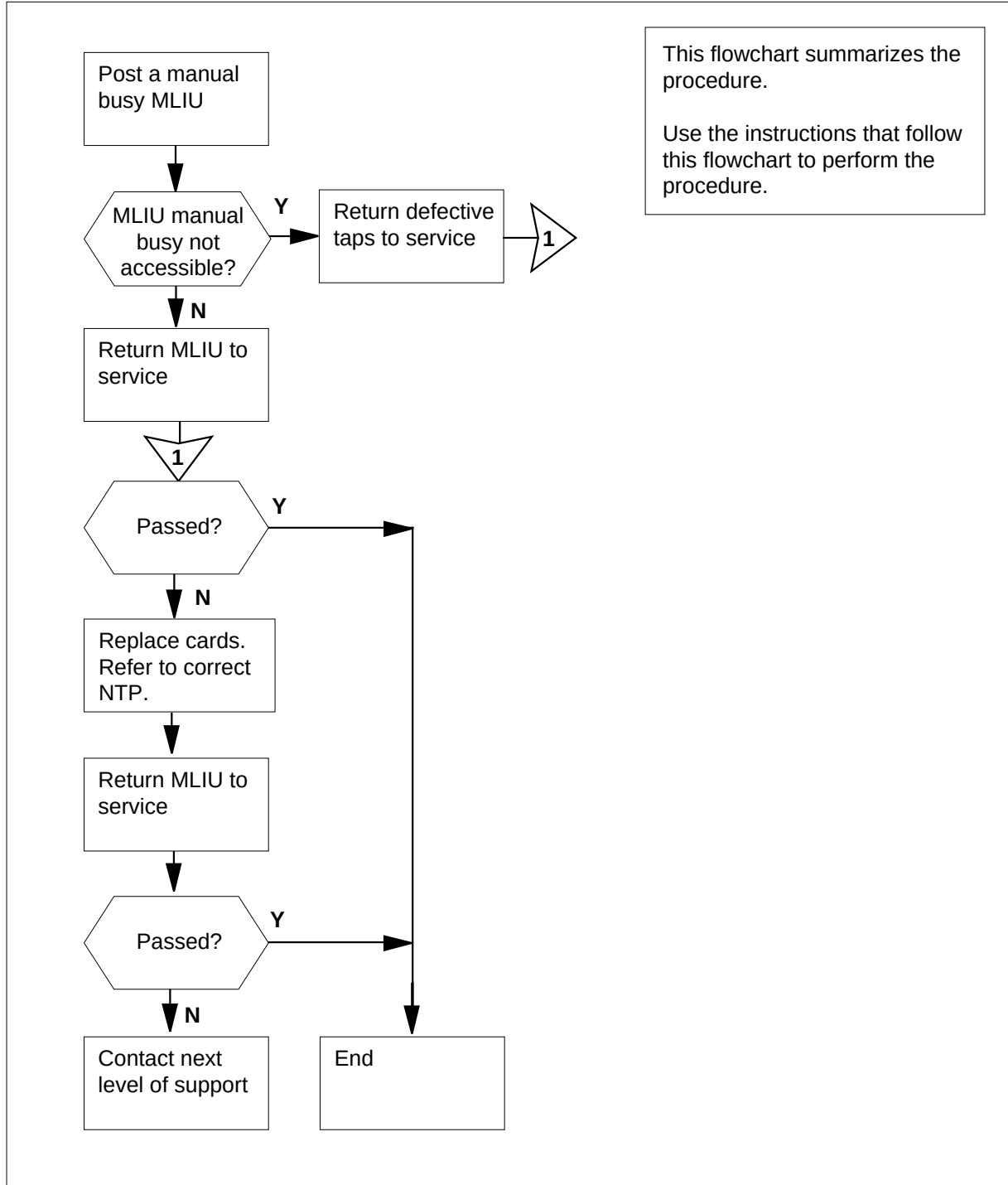
This procedure refers to *Activating CCS7 links*.

Action

This section provides a summary flowchart of the procedure and a list of steps to clear an alarm. A detailed step-action procedure follows the flowchart.

PM MLIU major (continued)

Summary of clearing a PM MLIU major alarm



PM MLIU major (continued)

Clearing a PM MLIU major alarm



WARNING

Possible service-affecting action

Do not POST, RTS and LOAD multiple sets of MLIUs. Finish work on one set of MLIUs before you work on another set.

At the MAP terminal

- 1 Determine from office records or from operating company personnel why the MLIU is manual busy. When you have permission, continue this procedure.

- 2 Determine if all the MS alarms cleared.

If all the MS alarms	Do
cleared	step 11
did not clear	step 3

- 3 To clear the alarm, perform the correct MS procedure in this document to clear the alarm. Complete the procedure and return to this point.

- 4 Determine if the MLIU major alarm cleared.

If the MLIU alarm	Do
cleared	step 63
did not clear	step 5

- 5 Ascertain which MLIU(s) is causing the alarm condition, type

>mapci;mtc;pm;post MLIU sysb

record which MLIU(s) is sysb, then type

>quit all

CI:

- 6 To access table LIUINV, type

>TABLE LIUINV

and press the Enter key

- 7 Position on the MLIU, type

>pos MLIU mliu_no

where, mliu_no is the number of the MLIU returned at step 5

PM MLIU

major (continued)

LIUNAME LOCATION LOAD PROCINFO CARDINFO

MLIU 11 MS 12 0 2 28 MCA12BE NTEX22CA NTEX76AA NTEX26BA
64000 EBI

MLIU 402 MS 8 1 1 12 MCA12BE NTEX22CA NTEX76AA NTEX26BA
64000 EBI

- 8 Record the location information

Note: The location is shown under the LOCATION header of the MAP display. The example in step 7 indicates that the location is MS.

- 9 Determine the MLIU location recorded in step 8. If the location is LIM, go to step 10. If the location is MS, go to step 62.

- 10 Quit from the table LIUINV, type

>QUIT

and press the Enter key.

- 11 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

- 12 To display all manual busy MLIUs, type

>DISP STATE MANB MLIU

and press the Enter key.

- 13 To post the first manual busy MLIU on the list, type

>POST MLIU mliu_no

and press the Enter key.

where

mliu_no

is the number of the selected MLIU (0 to 511)

- 14 Determine the state of the posted MLIU.

If the state of the posted MLIU	Do
is ManB (NA)	step 15
is ManB	step 45

- 15 Determine if an FSP alarm is present under the EXT header of the MAP display.

If an FSP alarm	Do
is present	step 16

PM MLIU major (continued)

	If an FSP alarm	Do
	is not present	step 17
16	To clear the alarm, perform the correct procedure in this document. Complete the procedure and return to this point. Go to step 46.	
17	To determine if a condition that affects service for an NIU is present, type >QUERYPM and press the Enter key. Note: In the following example, conditions that affect service appear under the header Potential service affecting conditions. <i>Example of a MAP response:</i> PM type:MLIU PM No.:402 Status: SysB(NA) LIM: 1 Shelf:1 Slot: 12 LIU FTA:429C 1000 Default Load: MCA12BE Running Load: MCA12BE Potential service affecting conditions: Msg Channel #0 NA Msg Channel #1 NA TAP #0 00S/NA TAP #1 00S/NA NIU Unit 1 is not inservice CBUS PORT for NIU Unit 1 is not inservice LMS States: InSv InSv Auditing : No No Msg Channels: NA NA TAP 2 : S(NA) S(NA) NIU 0 :ISTb ISTb Reserved MLIU forms part of CCS7 Linkset: MLIU_LS4 SLC:3 Reserved MLIU forms part of CCS7 Linkset: MLIU_LS3 SLC:2 Reserved MLIU forms part of CCS7 Linkset: MLIU_LS2 SLC:1 Reserved MLIU forms part of CCS7 Linkset: MLIU_LS1 SLC:0 MLIU is not allocated Record the linkset names shown after Linkset.	
	If an NIU condition that affects service	Do
	is present	step 18
	is not present	step 19
18	To clear the alarm, perform the correct NIU procedure in this document. Complete the procedure and return to this point.	

PM MLIU major (continued)

Go to step 61.

- 19** Determine the number of the link interface module (LIM) that associates with the MLIU.

Note: The number of the LIM that associates with the MLIU appears in the second line of the MAP response.

- 20** To post the LIM that associates with the MLIU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no

is the number of the LIM (0 to 16)

Example of a MAP display:

```
LIM  1  ISTb
                                Links_00S  Taps_00S
Unit0: ISTb                      2          .
Unit1: ManB                      2          18
```

- 21** Determine the state of the LIM.

If the LIM	Do
is Insv or ISTb	step 24
is other than listed here	step 22

- 22** A problem with the LIM produces a PM LIM alarm. To clear the alarm, perform the correct procedure in this document. Complete the procedure and return to this point

- 23** Determine the state of the posted MLIU.

If the state of the posted MLIU	Do
is ManB (NA)	step 24
is ManB	step 45

- 24** To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP display:

PM MLIU major (continued)

LIM 1 ISTb

					Links_00S					Taps_00S
Unit0:	ISTb				.					19
Unit1:	InSv				.					2
	Tap:	0	4	8	12	16	20	24	28	32
FBus0:	ManB	BBBB	BBBB	BBBB	BBBB	----	----	----	----	BB--
FBus1:	InSv	...M	.I..	.S..	....	----	----	----	----	..--

Note: In the example, B under a tap number indicates that the F-bus is manual busy. The letter B under a tap number can also indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. The letter M indicates a manual busy tap. The letter I indicates an in-service trouble tap. The letter S indicates a system busy tap. A dash (-) indicates an unequipped tap.

- 25 Determine the state of the F-buses.

If both F-buses	Do
are InSv or ISTb	step 28
are other than listed here	step 26

- 26 A problem with the F-bus produces a PM LIMF alarm. To clear the alarm, perform the correct procedure in this document. Complete the procedure and return to this point.

- 27 Determine the state of the posted MLIU.

If the state of the posted MLIU	Do
is ManB (NA)	step 28
is ManB	step 45

- 28 To determine the F-bus taps that associate with the MLIU, type

>TRNSL fbus_no

and press the Enter key.

where

fbus_no

is the number of either F-bus (0 or 1)

Example of a MAP response:

LIM 1	FBus	0 Tap	0	is on MLIU 101
LIM 1	FBus	0 Tap	1	is unequipped
LIM 1	FBus	0 Tap	2	is on MLIU 110
LIM 1	FBus	0 Tap	3	is on MLIU 104

PM MLIU major (continued)

- 29** The system generated a MAP display in step 24. Use this display to determine the state of the F-bus taps that associate with the system-busy MLIU.
- Note:** The tap number that appears in the MAP response in step 28 applies to both F-buses.
- | If the state of either F-bus tap | Do |
|----------------------------------|---------|
| fluctuates from I to S or is S | step 35 |
| is M | step 30 |
| is I | step 62 |
- 30** Determine from office records or from operating company personnel what caused the tap to be out of service. When you have permission, continue this procedure to return the tap to service.
- 31** To return the F-bus tap to service, type
- ```
>RTS FBUS fbus_no tap_no
```
- and press the Enter key.
- where
- fbus\_no**  
is the number of the F-bus (0 or 1)
- tap\_no**  
is the number of the F-bus tap (0 to 23 or 0 to 35)
- | If the RTS command                      | Do      |
|-----------------------------------------|---------|
| passed, and the other tap is M          | step 29 |
| passed, and the other tap is in service | step 53 |
| failed                                  | step 62 |
- 32** To quit from the F-bus level of the MAP display, type
- ```
>QUIT
```
- and press the Enter key.
- 33** To post the MLIU, type
- ```
>POST MLIU mliu_no
```
- and press the Enter key.
- where
- mliu\_no**  
is the number of the selected MLIU (0 to 511)



## PM MLIU major (continued)

- 34** To return the MLIU to service, type

**>RTS**

and press the Enter key.

| If the RTS command | Do      |
|--------------------|---------|
| passed             | step 54 |
| failed             | step 62 |

- 35** To manually busy the tap on F-bus 0, type

**>BSY FBUS 0 tap\_no**

and press the Enter key.

where

**tap\_no**

is the number of the F-bus tap (0 to 23 or 0 to 35)

| If the BSY command | Do      |
|--------------------|---------|
| passed             | step 37 |
| failed             | step 36 |

- 36** To force the F-bus tap to busy, type

**>BSY FBUS 0 tap\_no FORCE**

and press the Enter key.

where

**tap\_no**

is the number of the tap (0 or 23 or 0 to 35)

- 37** To manually busy the tap on F-bus 1, type

**>BSY FBUS 1 tap\_no**

and press the Enter key.

where

**tap\_no**

is the number of the F-bus tap (0 to 23 or 0 to 35)

| If the BSY command | Do      |
|--------------------|---------|
| passed             | step 39 |
| failed             | step 38 |

- 38** To force the F-bus tap to busy, type

**>BSY FBUS 1 tap\_no FORCE**

## PM MLIU major (continued)

and press the Enter key.

where

**tap\_no**

is the number of the tap (0 or 23 or 0 to 35)

- 39** To access table LIUINV to determine if the system busy MLIU is a two-slot MLIU or a three-slot MLIU, type

**>TABLE LIUINV**

and press the Enter key.

*MAP response:*

TABLE: LIUINV

- 40** To display the tuple in table LIUINV for the system busy MLIU, type

**>POSITION MLIU mliu\_no**

and press the Enter key.

where

**mliu\_no**

is the number of the MLIU (0 to 511)

*Example of a MAP response:*

```
MLIU 101 LIM 0 1 8 LCC36CH NT9X13CA NT9X75AA
 NT9X76AA NT9X78AA FBUS
```

**Note:** The tuple in table LIUINV contains the card number NTEX22.

- 41** Replace the NTEX22 card. To clear the alarm, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 42** To return the tap on F-bus 0 to service, type

**>RTS FBUS 0 tap\_no**

and press the Enter key.

where

**tap\_no**

is the number of the F-bus tap (0 to 23 or 0 to 35)

| If the RTS command | Do      |
|--------------------|---------|
| passed             | step 43 |
| failed             | step 62 |

- 43** To return the tap on F-bus 1 to service, type

**>RTS FBUS 1 tap\_no**

and press the Enter key.

## PM MLIU major (continued)

where

**tap\_no**

is the number of the F-bus tap (0 to 23 or 0 to 35)

|           | <b>If the RTS command</b>                                                                                                                                                  | <b>Do</b> |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|           | passed                                                                                                                                                                     | step 46   |
|           | failed                                                                                                                                                                     | step 62   |
| <b>44</b> | To post the manual busy MLIU, type<br><b>&gt;POST MLIU mliu_no</b><br>and press the Enter key.<br>where<br><b>mliu_no</b><br>is the number of the selected MLIU (0 to 511) |           |
| <b>45</b> | To reset the MLIU, type<br><b>&gt;PMRESET</b><br>and press the Enter key.                                                                                                  |           |
|           | <b>If the PMRESET command</b>                                                                                                                                              | <b>Do</b> |
|           | passed                                                                                                                                                                     | step 53   |
|           | failed                                                                                                                                                                     | step 46   |
| <b>46</b> | To load the MLIU, type<br><b>&gt;LOADPM</b><br>and press the Enter key.                                                                                                    |           |
|           | <b>If the LOADPM command</b>                                                                                                                                               | <b>Do</b> |
|           | passed                                                                                                                                                                     | step 53   |
|           | failed                                                                                                                                                                     | step 47   |
| <b>47</b> | To test the MLIU, type<br><b>&gt;TST</b><br>and press the Enter key.                                                                                                       |           |
|           | <b>If the TST command</b>                                                                                                                                                  | <b>Do</b> |
|           | passed                                                                                                                                                                     | step 53   |

## PM MLIU major (continued)

|    | If the TST command                                                                                                                             | Do      |
|----|------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|    | failed, and the system generates a card list that contains cards that you did not change                                                       | step 48 |
|    | is other than listed here                                                                                                                      | step 62 |
| 48 | Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the first card on the list.                   |         |
| 49 | To replace the card, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.    |         |
| 50 | To load the MLIU, type<br>>LOADPM<br>and press the Enter key.                                                                                  |         |
|    | If the LOADPM command                                                                                                                          | Do      |
|    | passed                                                                                                                                         | step 51 |
|    | failed                                                                                                                                         | step 62 |
| 51 | To test the MLIU, type<br>>TST<br>and press the Enter key.                                                                                     |         |
|    | If the TST command                                                                                                                             | Do      |
|    | passed                                                                                                                                         | step 53 |
|    | failed, and more cards on the list that are not replaced are present                                                                           | step 52 |
|    | is other than listed here                                                                                                                      | step 62 |
| 52 | Record the location, description, slot number, product engineering code (PEC), and PEC suffix, of the next card on the list.<br>Go to step 49. |         |
| 53 | To return the MLIU to service, type<br>>RTS<br>and press the Enter key.                                                                        |         |
|    | If the RTS command                                                                                                                             | Do      |
|    | passed                                                                                                                                         | step 54 |

## PM MLIU major (continued)

|    | If the RTS command                                                                                                                                                                                                                                | Do      |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|    | failed                                                                                                                                                                                                                                            | step 62 |
| 54 | To access the C7LKSET level of the MAP display to determine that the CCS7 link on the MLIU is in service, type<br><b>&gt;CCS;CCS7;C7LKSET</b><br>and press the Enter key.                                                                         |         |
| 55 | To post the linkset that associates with the MLIU<br><b>&gt;POST C linkset_name</b><br>and press the Enter key.<br><i>where</i><br><b>linkset_name</b><br>is the linkset name determined in step 17.<br><i>Example of a MAP display:</i>          |         |
|    | <pre> Linkset TR000002    InSv   Traf  Sync LK Stat  Stat  Resource  Stat Physical Access 1  InSv   Sync    MLIU 8    InSv   DS0A 2  InSv   Sync    MLIU 7    InSv   DS0A </pre>                                                                  |         |
| 56 | Determine the traffic state of the CCS7 link for the MLIU you are working on.<br><b>Note:</b> The number of the MLIU appears under the Resource header on the MAP display. The traffic state of the CCS7 link appears under the Traf Stat header. |         |
|    | If the state of the CCS7 link                                                                                                                                                                                                                     | Do      |
|    | is InSv                                                                                                                                                                                                                                           | step 63 |
|    | is other than listed here                                                                                                                                                                                                                         | step 57 |
| 57 | Wait eight minutes to determine if the CCS7 link terminated on the MLIU establishes again.                                                                                                                                                        |         |
|    | If the state of the link                                                                                                                                                                                                                          | Do      |
|    | is InSv                                                                                                                                                                                                                                           | step 63 |
|    | is other than listed here                                                                                                                                                                                                                         | step 58 |
| 58 | Perform the procedure <i>Activating CCS7 links</i> in this document. Complete the procedure and return to this point.                                                                                                                             |         |

## PM MLIU

### major (end)

---

**59** Determine if the link activated.

---

| If the link activation | Do |
|------------------------|----|
|------------------------|----|

---

|        |         |
|--------|---------|
| passed | step 61 |
|--------|---------|

|        |         |
|--------|---------|
| failed | step 62 |
|--------|---------|

---

**60** Repeat steps 54 to 59 for every linkset for that MLIU.

**61** Determine if the MLIU alarm cleared.

---

| If the alarm | Do |
|--------------|----|
|--------------|----|

---

|         |         |
|---------|---------|
| cleared | step 63 |
|---------|---------|

|                                                                      |         |
|----------------------------------------------------------------------|---------|
| decreased in number<br>(for example, changed from<br>2MLIU to 1MLIU) | step 11 |
|----------------------------------------------------------------------|---------|

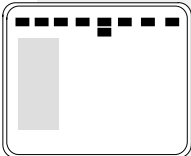
|               |         |
|---------------|---------|
| did not clear | step 62 |
|---------------|---------|

---

**62** For additional help, contact the next level of support.

**63** The procedure is complete.

**PM MLIU  
minor****Alarm display**

|                                                                                   |    |    |     |     |                           |     |     |      |     |      |
|-----------------------------------------------------------------------------------|----|----|-----|-----|---------------------------|-----|-----|------|-----|------|
|  | CM | MS | IOD | Net | <b>PM</b><br><b>1MLIU</b> | CCS | Lns | Trks | Ext | APPL |
|                                                                                   | .  | .  | .   | .   | .                         | .   | .   | .    | .   | .    |

**Indication**

At the MTC level of the MAP display, MLIU (preceded by a number) appears under the PM header of the alarm banner. The MLIU indicates a minor alarm for a CCS7 multiple link interface unit (MLIU).

**Meaning**

A minimum of one MLIU has in-service trouble.

The number under the PM header of the alarm banner indicates the number of MLIUs affected.

**Result**

MLIUs with in-service trouble continue to function. Traffic is not affected on CCS7 links that connect to MLIUs with minor alarms.

**Common procedures**

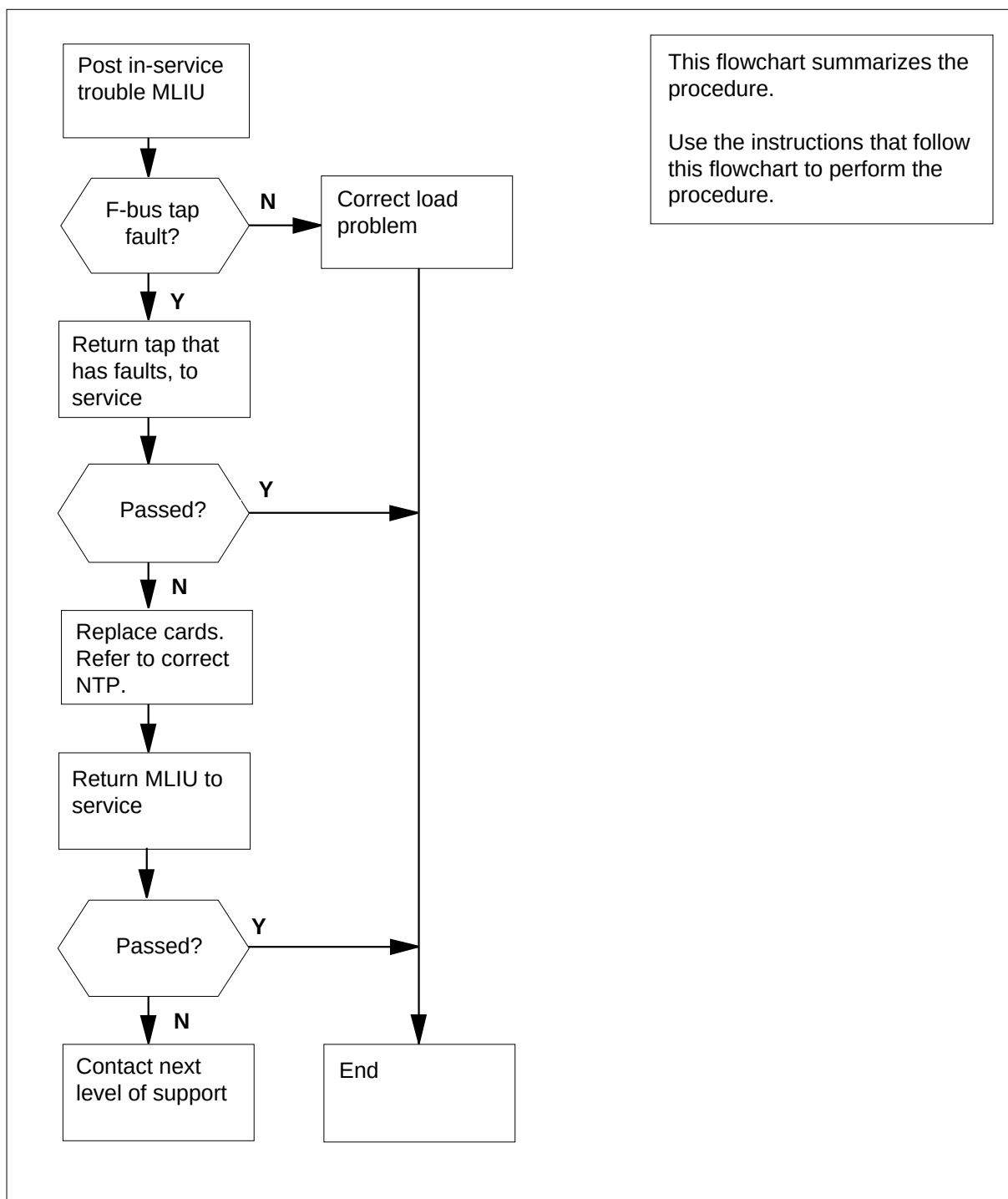
This procedure refers to *Activating CCS7 links*.

**Action**

This section provides a summary flowchart of the procedure and a list of steps to clear an alarm. A detailed step-action procedure follows the flowchart.

## PM MLIU minor (continued)

### Summary of clearing a PM MLIU minor alarm





## PM MLIU minor (continued)

### Clearing a PM MLIU minor alarm



#### WARNING

##### Possible service-affecting action

The following procedure can require that you take an MLIU out of service. If instructions require you to busy an MLIU, busy the MLIU during a period of low traffic to prevent service interruption.



#### WARNING

##### Possible service-affecting action

Do not POST, RTS and LOAD multiple sets of MLIUs. Finish work on one set of MLIUs before you work on another set.

#### At the MAP terminal

- 1 Determine if all the MS alarms cleared.

| If all the MS alarms | Do      |
|----------------------|---------|
| cleared              | step 10 |
| did not clear        | step 2  |

- 2 Perform the correct MS procedure in this document to clear the alarm. Complete the procedure and return to this point.

- 3 Determine if the MLIU minor alarm cleared.

| If the MLIU minor alarm | Do      |
|-------------------------|---------|
| cleared                 | step 84 |
| did not clear           | step 4  |

- 4 Ascertain which MLIU(s) is causing the alarm condition, type

```
>mapci;mtc;pm;post MLIU sysb
```

record which MLIU(s) is sysb, then type

```
>quit all
```

**CI:**

- 5 To access table LIUINV, type

```
>TABLE LIUINV
```

## PM MLIU minor (continued)

---

- and press the Enter key
- 6** Position on the MLIU, type  
**>pos MLIU mliu\_no**  
where, mliu\_no is the number of the MLIU returned at step 4
- ```
LIUNAME LOCATION LOAD PROCINFO CARDINFO
-----
MLIU 11 MS 12 0 2 28 MCA12BE NTEX22CA NTEX76AA NTEX26BA
64000 EBI
MLIU 402 MS 8 1 1 12 MCA12BE NTEX22CA NTEX76AA NTEX26BA
64000 EBI
```
- 7** Record the location information
Note: The location is shown under the LOCATION header of the MAP display. The example in step 6 indicates that the location is MS.
- 8** Determine the MLIU location recorded in step 7. If the location is LIM, go to step 9. If the location is MS, go to step 83.
- 9** Quit from the table LIUINV, type
>QUIT
and press the Enter key.
- 10** To access the PM level of the MAP display, type
>MAPCI;MTC;PM
and press the Enter key.
- 11** To display all in-service trouble MLIUs, type
>DISP STATE ISTB MLIU
and press the Enter key.
- 12** To post the first in-service trouble MLIU on the list, type
>POST MLIU mliu_no
and press the Enter key.
where
mliu_no
is the number of the selected MLIU (0 to 511)
- 13** To query the state of the MLIU , type
>QUERYPM
and press the Enter key.
Example of a MAP response:

PM MLIU minor (continued)

```

PM type:MLIU      PM No.:402  Status: SysB(NA)
LIM: 1  Shelf:1  Slot: 12  LIU FTA:429C 1000
Default Load: MCA12BE
Running Load: MCA12BE
Potential service affecting conditions:
  Msg Channel #0 NA
  Msg Channel #1 NA
  TAP #0 OOS/NA
  TAP #1 OOS/NA
NIU Unit 1 is not inservice
CBUS PORT for NIU Unit 1 is not inservice
LMS States:      InSv      InSv
Auditing :       No        No
Msg Channels:    NA        NA
TAP 2 :          S(NA)     S(NA)
NIU 0 :ISTb      ISTb
Reserved MLIU forms part of CCS7 Linkset: MLIU_LS4 SLC:3
Reserved MLIU forms part of CCS7 Linkset: MLIU_LS3 SLC:2
Reserved MLIU forms part of CCS7 Linkset: MLIU_LS2 SLC:1
Reserved MLIU forms part of CCS7 Linkset: MLIU_LS1 SLC:0
MLIU is not allocated

```

Record the linkset names shown after Linkset.

- 14** Record the following information from the response that the system generated in step 13.

- LIM number
- default load name
- running load name
- ISTb conditions
- CCS7 linkset name

- 15** Determine if an F-bus tap problem causes the in-service trouble condition.

Note: F-bus tap problems appear next to the TAP # header. The TAP # header appears under the ISTB conditions header of the MAP response. When a tap is out of service, the associated MSG channel is out of service, as displayed in the previous example.

If an F-bus tap	Do
is OOS/NA	step 17
is OOS	step 26
fault is not listed	step 16

PM MLIU**minor** (continued)

- 16** Determine if a mismatch between the name of the default load and the running load is present.
- Note:** The names of the default and running loads appear in the third and fourth lines of the response. The system generates the response in step 13.

If a load name mismatch	Do
is present	step 55
is not present	step 83

- 17** Determine the number of the LIM that associates with the MLIU.
- Note:** The number of the associated LIM appears in the second line of the response that the system generated in step 13.

- 18** To post the LIM that associates with the in-service trouble MLIU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no

is the LIM number (0 to 16)

Example of a MAP display:

```
LIM 1 ISTb
                                Links_00S Taps_00S
Unit0: ISTb                    2         .
Unit1: ManB                    2         18
```

- 19** Determine the state of the LIM.

If the LIM	Do
is InSv	step 22
is other than listed here	step 20

- 20** A problem with the LIM produces a PM LIM alarm. To clear the alarm, perform the correct procedure in this document. Complete the procedure and return to this point.

- 21** Determine if the MLIU alarm cleared.

If the alarm	Do
cleared	step 84
did not clear	step 22

PM MLIU minor (continued)

- 22 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP display:

```
LIM 1 Insv
Unit0: Insv
Unit1: InSv
Tap: 0 4 8 12 16 20 24 28 32
FBus0: Insv BBBB ..S. .... .... ---- ---- ---- ---. ....
FBus1: InSv ...M .I.. .S.. .... ---- ---- ---- ---. ....
```

Note: In the previous example, B under a tap number indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. The letter M indicates a manual busy tap. An I indicates an in-service trouble tap. An S indicates a system busy tap. A dash (-) indicates an unequipped tap.

- 23 Determine the state of the F-buses.

If both F-buses	Do
are InSv	step 26
are other than listed here	step 24

- 24 A problem with the F-bus produces a PM LIMF alarm. Perform the correct procedure in this document to clear the alarm. Complete the procedure and return to this point.

- 25 Determine if the MLIU alarm cleared.

If the alarm	Do
cleared	step 84
did not clear	step 26

- 26 To determine that the F-bus taps associated with the in-service trouble MLIU, type

>TRNSL fbus_no

and press the Enter key.

where

fbus_no

is the number of the F-bus that contains the out-of-service tap

(determined in step 13)

PM MLIU

minor (continued)

Note: The number of the F-bus tap associates with the MLIU you are working on. The number of the F-bus appears to the left of the MLIU number on the MAP. In the following example, MLIU 110 associates with tap 2 on F-bus 0.

Example of a MAP response:

```
LIM 1   FBus   0 Tap   0   is on MLIU 101
LIM 1   FBus   0 Tap   1   is unequipped
LIM 1   FBus   0 Tap   2   is on MLIU 110
LIM 1   FBus   0 Tap   3   is on MLIU 104
```

- 27** From the MAP display that the system generated in step 22, determine the state of the F-bus taps. The F-bus taps associate with the in-service trouble MLIU.

Note: The tap number that appears in the MAP display applies to both F-buses.

If either tap	Do
is M	step 30
is S	step 28
is other than listed here	step 83

- 28** To manually busy the F-bus tap that associates with the in-service trouble MLIU, type

>BSY FBUS fbus_no tap_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 23 or 0 to 35)

If the BSY command	Do
passed	step 31
failed	step 29

- 29** To force the F-bus tap to busy, type

>BSY FBUS fbus_no tap_no FORCE

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

PM MLIU minor (continued)

tap_no

is the number of the tap (0 to 23 or 0 to 35)

Go to step 31.

- 30** Determine from office records or from operating company personnel why the F-bus tap is manual busy. When you have permission, continue this procedure to return the tap to service.

- 31** To return the F-bus tap that associates with the in-service trouble MLIU to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

fbus_no

is the number of the F-bus (0 or 1)

tap_no

is the number of the F-bus tap (0 to 23 or 0 to 35)

If the RTS command**Do**

passed, and the other tap is not in service step 32

passed, and the other tap is in service step 82

failed, and the system generates a card list step 33

is other than listed here step 83

- 32** Determine the state of the other F-bus tap for the same MLIU.

If the state of the other F-bus tap**Do**

is M step 30

is S step 28

- 33** Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.

- 34** To access the C7LKSET level of the MAP display, type

>CCS;CCS7;C7LKSET

and press the Enter key.

- 35** To post the linkset that associates with the MLIU, type

>POST C linkset_name

and press the Enter key.

PM MLIU minor (continued)

where

linkset_name

is the name of the linkset returned in step 13.

Note: The name of the linkset that associates with the in-service trouble MLIU appears in the second last line of the response. The system generated this response in step 13.

- 36 To inhibit the link that associates with the MLIU, type

>INH link_no

and press the Enter key.

where

link_no

is the number of the link (0 to 15)

If the INH command	Do
passed	step 37
failed	step 83

- 37 To manually busy the link that associates with the MLIU, type

>BSY link_no

and press the Enter key.

where

link_no

is the number of the link (0 to 7 or 0 to 15)

If the response	Do
is Link link_no:Traffic is running on that link Please confirm ("YES", "Y", "NO", or "N"):	step 38
is other than listed here, including additional messages with above response	step 83

- 38 To confirm the command, type

>YES

and press the Enter key

Repeat steps 35 to 38 for all the linksets associated with that MLIU.

Go to step 39

PM MLIU
minor (continued)

- 39 To return to the PM level of the MAP display, type
>PM
and press the Enter key.
- 40 To post the MLIU, type
>POST MLIU mliu_no
and press the Enter key.
where
liu_no
is the number of the MLIU (0 to 511)
- 41



WARNING
Risk of service interruption
To perform the next step, remove an MLIU from service.
Manually busy the MLIU during a period of low traffic to
prevent service interruption.

To manually busy the MLIU, type
>BSY
and press the Enter key.

If the response	Do
is Busyng MLIU mliu_no will take a CCS7 resource out of service Please confirm ("YES", "Y", "NO", or "N"):	step 42
is other than listed here, including additional messages with above response	step 83

- 42 To confirm the command, type
>YES
and press the Enter key
- 43 Replace the first card on the list recorded in step 33. To replace the card,
perform the correct procedure in *Card Replacement Procedures*. Complete
the procedure and return to this point.
- 44 To set the MLIU again, type
>PMRESET

PM MLIU
minor (continued)

and press the Enter key.

If the PMRESET command	Do
passed	step 48
failed	step 45

- 45** To load the MLIU, type
>LOADPM
and press the Enter key.

If the LOADPM command	Do
passed	step 48
failed, and you did not replace all the cards on the list recorded in step 33	step 46
is other than listed here	step 83

- 46** To replace the next card on the list, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 47** Go to step 44.

- 48** To post the LIM that associates with the MLIU, type
>POST LIM lim_no
and press the Enter key.
where

lim_no
is the number of the LIM (0 to 16)

- 49** To access the F-bus level of the MAP display, type
>FBUS
and press the Enter key.

- 50** To return the F-bus tap to service, type
>RTS FBUS fbus_no tap_no
and press the Enter key.
where

fbus_no
is the number of the F-bus (0 or 1)

PM MLIU minor (continued)

	tap_no is the number of the F-bus tap (0 to 23 or 0 to 35)								
	<table> <tr> <th>If the RTS command</th><th>Do</th></tr> <tr> <td>passed</td><td>step 51</td></tr> <tr> <td>failed</td><td>step 83</td></tr> </table>	If the RTS command	Do	passed	step 51	failed	step 83		
If the RTS command	Do								
passed	step 51								
failed	step 83								
51	Determine the state of the other F-bus tap that associates with the MLIU.								
	<table> <tr> <th>If the other F-bus tap</th><th>Do</th></tr> <tr> <td>is M</td><td>step 30</td></tr> <tr> <td>is S</td><td>step 28</td></tr> <tr> <td>is in service</td><td>step 52</td></tr> </table>	If the other F-bus tap	Do	is M	step 30	is S	step 28	is in service	step 52
If the other F-bus tap	Do								
is M	step 30								
is S	step 28								
is in service	step 52								
52	To quit from the F-bus level of the MAP display, type >QUIT								
	and press the Enter key.								
53	To post the MLIU, type >POST MLIU mliu_no								
	and press the Enter key.								
	where								
	liu_no is the number of the MLIU (0 to 511)								
54	To return the MLIU to service, type >RTS								
	and press the Enter key.								
	<table> <tr> <th>If the RTS command</th><th>Do</th></tr> <tr> <td>passed</td><td>step 75</td></tr> <tr> <td>failed</td><td>step 83</td></tr> </table>	If the RTS command	Do	passed	step 75	failed	step 83		
If the RTS command	Do								
passed	step 75								
failed	step 83								
55	Determine from office records or from operating company personnel the name of the load that runs in the switch.								
56	Determine if the default load name matches the correct load name determined in step 55.								
	<table> <tr> <th>If the default load name</th><th>Do</th></tr> <tr> <td>matches the correct load name</td><td>step 63</td></tr> </table>	If the default load name	Do	matches the correct load name	step 63				
If the default load name	Do								
matches the correct load name	step 63								

PM MLIU minor (continued)

	If the default load name	Do
	does not match the correct load name	step 57
57	To access table LIUINV, type >TABLE LIUINV and press the Enter key.	
58	To position on the key value of the tuple to change, type >POSITION MLIU mliu_no and press the Enter key. <i>where</i> mliu_no is the number of the in-service trouble MLIU (0 to 511) <i>Example of a MAP response:</i>	
	<pre>MLIU 102 LIM 1 1 12 LRC36CV NTEX22BB NT9X76AA NT9X78AA FBUS</pre>	
59	To specify the field in the tuple to change, type >CHANGE LOAD and press the Enter key.	
60	To enter the new value of the field that you want to change, type >new_value and press the Enter key. <i>where</i> new_value is the new value for the field <i>Example of a MAP response:</i>	
	<pre>TUPLE TO BE CHANGED: MLIU 102 LIM 1 1 12 LCC36BX NTEX22BB NT9X76AA NT9X78AA FBUS ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.</pre>	
61	To confirm the new value of the changed field, type >Y and press the Enter key. <i>MAP response:</i>	
	<pre>TUPLE CHANGED</pre>	

PM MLIU minor (continued)

- 62** To quit from the table, type
>QUIT
and press the Enter key.
- 63** Determine if the running load name matches the correct load name that you determined in step 55.
- | If the running load | Do |
|---------------------|---------|
| is correct | step 75 |
| is not correct | step 64 |
- 64** To access the C7LKSET level of the MAP display, type
>CCS;CCS7;C7LKSET
and press the Enter key.
- 65** To post the linkset that associates with the MLIU, type
>POST C linkset_name
and press the Enter key.
where
linkset_name
is the name of the linkset
Note: There may be more than one linkset associated with the MLIU. Repeat this step for each linkset for that MLIU.
- 66** To inhibit the link, type
>INH link_no
and press the Enter key.
where
link_no
is the number of the link (0 to 15)
- | If the INH command | Do |
|--------------------|---------|
| passed | step 67 |
| failed | step 83 |
- 67** To manually busy the link, type
>BSY link_no
and press the Enter key.
where

PM MLIU minor (continued)

link_no

is the number of the link (0 to 7 or 0 to 15)

If the response	Do

is Link link_no:Traffic is running on that link
Please confirm
("YES", "Y", "NO", or "N"):

step 68

is other than listed here, including additional messages with above response

step 83

68 To confirm the command, type

>YES

and press the Enter key

69 To return to the PM level of the MAP display, type

>PM

and press the Enter key.

70 To post the in-service trouble MLIU, type

>POST MLIU mliu_no

and press the Enter key.

where

mliu_no

is the number of the MLIU (0 to 511)

71



WARNING

Risk of service interruption

If you perform the next step, you will take an MLIU out of service. Manually busy the MLIU during a period of low traffic to prevent service interruption.

To manually busy the MLIU, type

>BSY

PM MLIU minor (continued)

and press the Enter key.

	If the response	Do
	is Busying MLIU mliu_no will take a CCS7 resource out of servicePlease confirm ("YES", "Y", "NO", or "N"):	step 72
	is other than listed here, including additional messages with above response	step 83
72	To confirm the command, type >YES	
	and press the Enter key.	
73	To load the MLIU, type >LOADPM	
	and press the Enter key.	
	If the LOADPM command	Do
	passed	step 74
	is other than listed here	step 83
74	To return the MLIU to service, type >RTS	
	and press the Enter key.	
	If the RTS command	Do
	passed	step 75
	failed	step 83
75	To access the C7LKSET level of the MAP display, type >CCS;CCS7;C7LKSET	
	and press the Enter key.	
76	To post the linkset that associates with the MLIU, type >POST C linkset_name	
	and press the Enter key.	
	<i>where</i>	

PM MLIU

minor (continued)

linkset_name
is the linkset name

Note: There may be more than one linkset associated with the MLIU. Repeat this step for each linkset for that MLIU.

Example of a MAP display:

```
Linkset TR000002    InSv
  Traf  Sync
LK Stat  Stat  Resource  Stat Physical Access
1  InSv  Sync  MLIU 110   InSv  DS0A
2  InSv  Sync  MLIU 104   InSv  DS0A
```

- 77** Determine the traffic state of the CCS7 link that associates with the MLIU.

Note: The MLIU numbers appear under the Resource header in the display in step 76. The traffic state of the CCS7 links appear under the Traf Stat header.

If the state of the CCS7 link	Do
is InSv	step 82
is ManB	step 78
is other than listed here	step 80

- 78** To return the link to service, type

>RTS link_no

and press the Enter key.

where

link_no
is the number of the link (0 to 7 or 0 to 15)

If the RTS command	Do
passed	step 79
failed	step 83

- 79** To restore traffic to the link that associates with the MLIU, type

>UINH link_no

and press the Enter key.

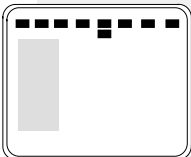
where

**PM MLIU
minor (end)**

	link_no is the number of the link (0 to 15)	
	If the UINH command	Do
	passed	step 82
	failed	step 83
80	Wait eight minutes to see if the CCS7 link terminated on the MLIU establishes again.	
	If, after eight minutes, the link	Do
	is InSv	step 82
	is other than listed here	step 81
81	Perform the procedure <i>How to activate CCS7 links</i> in this document. Complete the procedure and return to this point.	
	If the link activation	Do
	passed	step 82
	failed	step 83
82	Determine if the MLIU minor alarm cleared.	
	If the MLIU minor alarm	Do
	cleared	step 84
	reduced in number (for example, changed from 4MLIU to 3MLIU)	step 10
	did not clear	step 83
83	For additional help, contact the next level of support.	
84	The procedure is complete.	

PM MSB6, MSB7 critical, major, or minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	1MSB6	.	.	.	.	.
					C					

Indication

At the MTC level of the MAP display, MSB6 (preceded by a number) appears under the PM header of the alarm banner. The MSB6 indicates a message switch buffer 6 (MSB6) alarm.

Note: In this procedure, MSB refers to both the MSB6 and the MSB7.

Meaning

For a critical alarm, *C* appears under the alarm indicator. The system generates a critical alarm when the MSB is system busy or C-side busy. An MSB is system busy when both units are system busy. An MSB can also be system busy when one unit is system busy and the other unit is manually-busy. An MSB is C-side busy when both units are C-side busy.

For a major alarm, an M appears under the alarm indicator. The system generates a major alarm when the MSB is manually-busy, C-side busy, or in-service trouble (ISTb). An MSB is manually-busy when both units are manually-busy. An MSB is C-side busy when one unit is C-side busy and the other unit is system busy or manually-busy. An MSB is ISTb when one unit is system busy and the other unit is ISTb or in service.

For a minor alarm, information does not appear under the alarm indicator. The system generates a minor alarm when the MSB is ISTb. An MSB is ISTb when one of the following three conditions occur:

- one unit is ISTb and the other unit is in service, manually-busy, or ISTb
- one unit is manually-busy and the other unit is in service
- both units are in service with out-of-service C-side links

The number under the PM header in the alarm banner indicates the number of MSBs affected.

PM MSB6, MSB7
critical, major, or minor (continued)

Result

Service stops when an MSB is system busy, C-side busy, or manually-busy. A subtending PM does not have service. The condition does not affect service when an MSB is ISTb with a major or minor alarm. Backup units are not present when one MSB unit is manually or system busy and the other MSB unit is ISTb.

Common procedures

This procedure refers to the following common procedures:

- *Loading a PM*
- *Correcting a load mismatch*

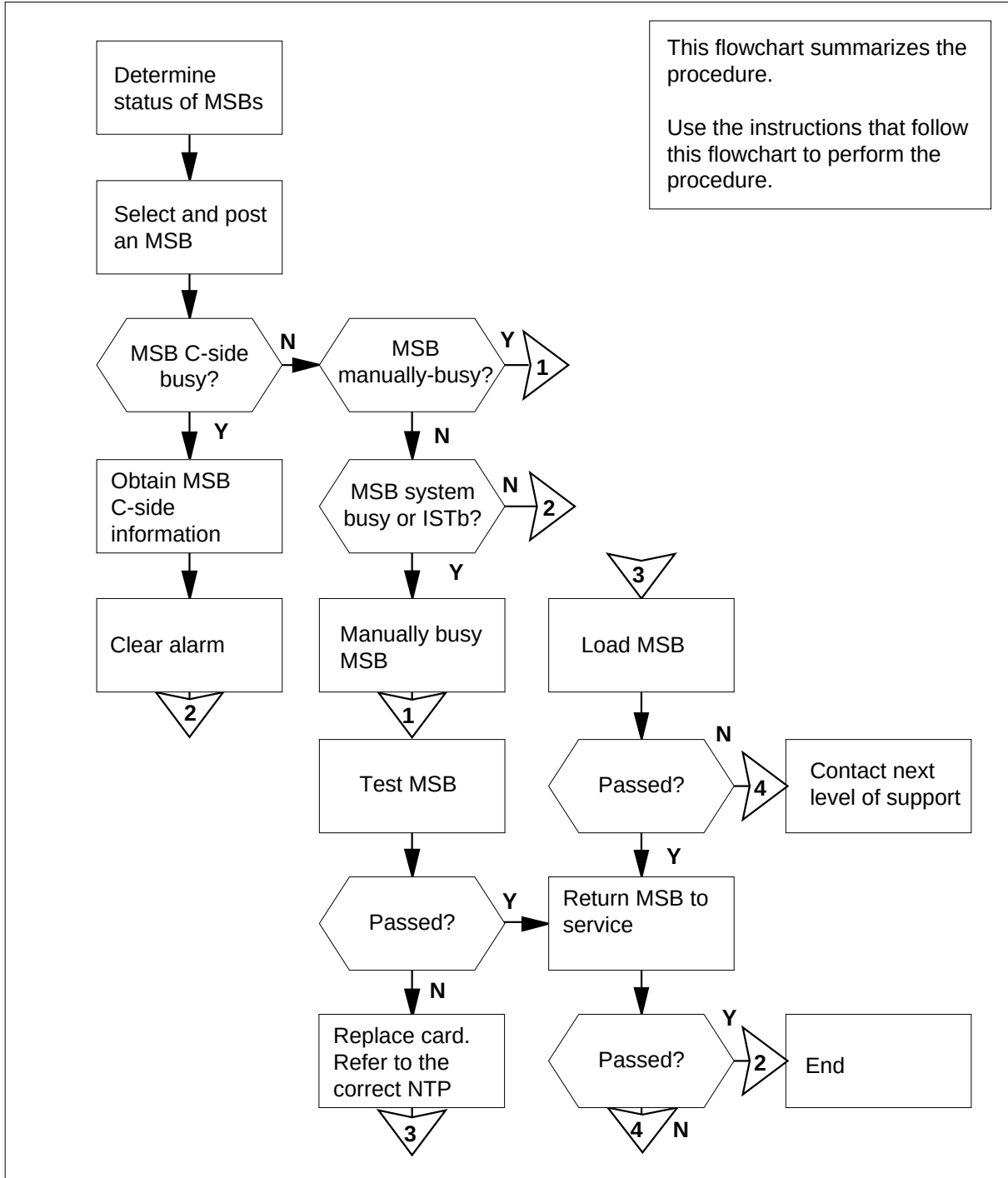
Do not go to the common procedures unless the step-action procedure directs you to go.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM MSB6, MSB7 critical, major, or minor (continued)

Summary of clearing a PM MSB6, MSB7 critical, major, or minor alarm



PM MSB6, MSB7 critical, major, or minor (continued)

Clearing a PM MSB6, MSB7 critical, major or minor alarm

At the MAP display

- 1** To access the PM level of the MAP display, type

>MAPCI ; MTC ; PM

and press the Enter key.

Example of a MAP display:

	SysB	ManB	OffL	CBSy	ISTb	InSv
PM	15	1	0	1	3	5

- 2** Determine if an alarm is present under the Ext header of the MAP display.

If an Ext alarm	Do
is present	step 3
is not present	step 4

- 3** Perform the correct procedure in this document.

- 4** Determine if an audible alarm rings.

If an alarm	Do
rings	step 5
does not ring	step 6

- 5** To silence the alarm, type

>SIL

and press the Enter key.

- 6** To display the status of all PMs, type

>STATUS

and press the Enter key.

Example of a MAP response:

TM8	2	0	0	0	0	1
MTM	7	0	0	0	0	4
MSB7	4	1	0	0	0	0
LM	2	0	0	0	3	0
LGC	0	0	0	1	0	0

PM MSB6, MSB7 critical, major, or minor (continued)

7 Determine the state of the MSBs.

If the state of one MSB	Do
is SysB	step 8
is CBSy	step 60
is ManB	step 68
is ISTb	step 85

8 To display all system busy MSBs, type

>DISP STATE SYSB MSBx

and press the Enter key.

where

x
is the type of MSB (6 or 7)

Example of a MAP response:

SysB MSB7 : 0,3,5

9 Record the number of each system busy MSB.

10 Choose a system busy MSB on which to work.

11 To post the MSB, type

>POST MSBx msb_no

and press the Enter key.

where

x
is the type of MSB (6 or 7)

msb_no
is the number of the MSB (0 to 9)

Example of a MAP response:

```
MSB7    0 SysB  Links_00S: CSide  0 , PSide  0
Unit0:   Act ManB
Unit1:  Inact  SysB
```

If	Do
one MSB unit is ManB and the other MSB unit is SysB	step 12
both MSB units are SysB	step 13

12 Go to step 73 to work on the manually-busy MSB unit first.

PM MSB6, MSB7 critical, major, or minor (continued)

- 13** To determine the location of the MSB, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

```
PM Type: MSB7 PM No.: 0 PM Int. No.: 0 Node_No: 18
PMs Equipped: 53 Loadname: MC7XB03
STCLOADS in MSBINV table: M7CJA01
WARM SWACT is supported but not possible: node redundancy
lost
MSB7 0 is included in the REX schedule.
REX on MSB7 0 has not been performed.
Node Status: {MACHINE_BUSY, TRUE}
Unit 0 Act, Status: {MACHINE_BUSY, TRUE}
Unit 1 Inact, Status: {MACHINE_BUSY, TRUE}
Site Flr RPos Bay_id Shf Description Slot EqPEC
HOST 00 C01 MS7E 00 18 MSB7: 000 6X32AA
```

At the MSxE frame

- 14** Determine if a power fault is the cause of the system busy condition. Examine the MSB units in the MSB equipment (MSxE) frame for a power converter fault.

Note: To check for a power fault, examine the fail lamp on the power converter (NT2X70) on each unit of the MSB.

If the fail lamp	Do
is lit on either converter	step 15
is not lit on either converter	step 28

- 15** Determine if one or both MSB units is system busy.

If	Do
one MSB unit is SysB	step 16
both MSB units are SysB	step 22

At the MAP display

- 16** To manually busy the MSB unit, type

>BSY UNIT unit_no

and press the Enter key.

where

PM MSB6, MSB7 critical, major, or minor (continued)

	unit_no is the number of the system busy MSB unit (0 or 1)						
	<table> <tr> <th>If the BSY command</th><th>Do</th></tr> <tr> <td>passes</td><td>step 18</td></tr> <tr> <td>other than listed here</td><td>step 17</td></tr> </table>	If the BSY command	Do	passes	step 18	other than listed here	step 17
If the BSY command	Do						
passes	step 18						
other than listed here	step 17						
17	To force the MSB unit to busy, type >BSY UNIT unit_no FORCE and press the Enter key. <i>where</i> unit_no is the number of the system busy MSB unit (0 or 1)						
18	To replace the NT2X70, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.						
19	To load the MSB unit, type >LOADPM UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the MSB unit (0 or 1) that you busied in step 16						
	<table> <tr> <th>If the LOADPM command</th><th>Do</th></tr> <tr> <td>passes</td><td>step 21</td></tr> <tr> <td>is other than listed here</td><td>step 20</td></tr> </table>	If the LOADPM command	Do	passes	step 21	is other than listed here	step 20
If the LOADPM command	Do						
passes	step 21						
is other than listed here	step 20						
20	Perform the procedure <i>Loading a PM</i> in this document. Complete the procedure and return to this point.						
21	To return the manually-busy MSB unit to service, type >RTS UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the MSB unit (0 or 1) that you busied in step 16						
	<table> <tr> <th>If the RTS command</th><th>Do</th></tr> <tr> <td>passes, and the MSB unit is InSv or ISTb, while the other MSB unit is SysB</td><td>step 14</td></tr> </table>	If the RTS command	Do	passes, and the MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14		
If the RTS command	Do						
passes, and the MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14						

PM MSB6, MSB7 critical, major, or minor (continued)

	If the RTS command	Do
	passes, the MSB unit is InSv, but the fail lamp was ON for the power converter on the other MSB unit	step 16
	passes, and both MSB units are InSv, but you recorded other SysB MSBs in step 9	step 11
	passes, both MSB units are InSv, and other MSBs are not SysB	step 110
	fails, and you replaced the power converter that has faults	step 37
22	To manually busy the MSB, type >BSY PM and press the Enter key.	
	If the BSY command	Do
	passes	step 24
	fails	step 23
23	To force the MSB to busy, type >BSY PM FORCE and press the Enter key.	
24	To replace the NT2X70 card, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
25	To load the MSB, type >LOADPM PM and press the Enter key.	
	If the LOADPM command	Do
	passes	step 27
	fails	step 26
26	Perform the procedure <i>Loading a PM</i> in this document. Complete the procedure and return to this point.	
27	To return the MSB to service, type >RTS PM	

PM MSB6, MSB7 critical, major, or minor (continued)

and press the Enter key.

If the RTS command	Do
passes, and the MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14
passes, and both MSB units are InSv, but you recorded other SysB MSBs in step 9	step 11
passes, both MSB units are InSv, and no other MSBs are SysB	step 110
fails, and you replaced the power converter that has faults	step 49

28 To determine the cause of the system busy condition, type

>QUERYPM FLT

and press the Enter key.

Note: One unit can have more than one system busy condition at a given time. The unit remains system busy until all system busy conditions clear on the given unit.

If the MAP response	Do
is PM Audit	step 13
is activity dropped	step 13
is WAI received	step 13
is SWACT in progress	step 29
is Link Audit	step 30
is CSide Link RTS	step 34
is CC restart has occurred	step 34
is unit SysB due to diagnostic failure	step 34
is not loaded since power up	step 51
is load corruption suspected	step 51

PM MSB6, MSB7 critical, major, or minor (continued)

	If the MAP response	Do
	is load failed	step 51
	is Distributed Data loading failed	step 51
	is other than listed here	step 109
29	The system performs maintenance on the unit that changed to the inactive (Inact) unit. The Mtce flag appears next to the unit when system maintenance is in progress. When system maintenance is complete, repeat step 28.	
30	To determine the status of the C-side link, type >TRNSL C and press the Enter key. <i>Example of a MAP response:</i> <pre>Link 0: NET 0 0 32 00 0;Cap MS;Status:OK Link 1: NET 1 0 32 00 0;Cap MS;Status:OK Link 30: NET 0 0 32 00 15;Cap S;Status:OK Link 31: NET 1 0 32 00 15;Cap S;Status:OK</pre> Note 1: Link 2 to link 29 do not appear in this example. Note 2: C-side links with a status of OK are in service. Any other status indicates an out-of-service C-side link.	
	If the links	Do
	are out-of-service	step 31
	are in service	step 35
31	Record the network, plane, and link number of the links that do not have a status of OK.	
32	Perform the correct procedure in this document. Complete the procedure and return to this point.	
33	To post the MSB that had out-of-service C-side links, type >PM;POST MSBx msb_no and press the Enter key. <i>where</i> x is the type of MSB (6 or 7)	

PM MSB6, MSB7 critical, major, or minor (continued)

msb_no is the number of the MSB (0 to 9)	
If	Do
one MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14
both MSB units are InSv, but you recorded other SysB MSBs in step 9	step 11
both MSB units are InSv, and other MSBs are not SysB	step 110
one MSB unit is InSv, while the other MSB unit is ISTb	step 92
both MSB units are ISTb	step 95
34	Determine if one or both MSB units are system busy.
If	Do
one MSB unit is SysB	step 35
both MSB units are SysB	step 48
35	To manually busy the MSB unit, type >BSY UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the MSB unit that you want to busy (0 or 1)
If the BSY command	Do
passes	step 37
fails	step 36
36	To force the MSB unit to busy, type >BSY UNIT unit_no FORCE and press the Enter key. <i>where</i> unit_no is the number of the system busy MSB unit (0 or 1)

PM MSB6, MSB7 critical, major, or minor (continued)

- 37** To test the MSB unit, type
>TST UNIT unit_no
 and press the Enter key.
where
unit_no
 is the number of the MSB unit (0 or 1) that you busied in step 35

Example of a MAP response:

```
MSB7 0 Unit 1    Non-Destructive ROM test and
                  OSvce tests will be run
MSB7 0 Unit 1    Tst Passed
```

If the TST command	Do
passes	step 40
fails, and part of the response is Try PMRESET	step 39
fails, and part of the response is check for possible logs	step 38
fails, and part of the response is Unit failed to initialize, try reloading	step 43
fails, and the system generated a card list	step 41
fails, and the system did not generate a card list	step 43
other than listed here	step 109

- 38** Obtain the log that the system generated for the MSB.

If the log	Do
provides a card list	step 41
does not provide a card list	step 43

- 39** To reset the MSB unit, type
>PMRESET UNIT unit_no
 and press the Enter key.
where
unit_no
 is the number of the MSB unit (0 or 1) that you busied in step 35

Example of a MAP response:

PM MSB6, MSB7 critical, major, or minor (continued)

MSB7 0 Unit 1 PMReset Passed

If the PMRESET command	Do
passes	step 40
fails	step 43

- 40** To return the manually-busy MSB unit to service, type
>RTS UNIT unit_no
 and press the Enter key.
where
 unit_no
 is the number of the MSB unit (0 or 1) that you busied in step 35
Example of a MAP response:
 MSB7 0 Unit 1 Rts Passed
- | If the RTS command | Do |
|--|----------|
| passes, and both MSB units are InSv, but you re-
corded other SysB MSBs in step 9 | step 11 |
| passes, and one MSB unit is InSv or ISTb, while
the other MSB unit is SysB | step 14 |
| passes, and one MSB unit is InSv, while the other
MSB unit is ManB | step 77 |
| passes, and one MSB unit is InSv, while the other
MSB unit is ISTb | step 92 |
| passes, both MSB units are InSv, while the other
MSB unit is SysB | step 110 |
| passes, and both MSB units are ISTb | step 95 |
| fails, and the system generated a card list | step 41 |
| fails, and the system did not generate a card list | step 43 |
- 41** Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.
- 42** To replace the first card on the list, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.
- 43** To load the MSB unit, type
>LOADPM UNIT unit_no

PM MSB6, MSB7 critical, major, or minor (continued)

and press the Enter key.

where

unit_no

is the number of the MSB unit (0 or 1) that you busied in step 35

If the LOADPM command	Do
passes	step 46
fails	step 44

44 Perform the procedure *Loading a PM* in this document. Complete the procedure and return to this point.

45 To return the manually-busy MSB unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no

is the number of the MSB unit (0 or 1) that you busied in step 35

Example of a MAP response:

MSB7 0 Unit 1 Rts Passed

If the RTS command	Do
passes, and the MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14
passes, both MSB units are InSv, and other MSBs are not SysB	step 110
passes, and one MSB unit is InSv, while the other MSB unit is ManB	step 76
passes, and both MSB units are InSv, but you recorded other SysB MSBs in step 9	step 11
passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
passes, and both MSB units are ISTb	step 95
fails, and you did not replace all cards in the list that you recorded in step 41	step 46
fails, and you replaced all cards in the list that you recorded in step 41	step 109

PM MSB6, MSB7 critical, major, or minor (continued)

	If the RTS command	Do
	fails, and the system did not generate a card list	step 109
46	To replace the next card on the list, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
47	Go to step 43.	
48	To manually busy the MSB, type >BSY PM and press the Enter key. <i>Example of a MAP response:</i> MSB7 0 Bsy Passed	
49	To test the MSB, type >TST PM and press the Enter key. <i>Example of a MAP response:</i> MSB70 Unit 0 Non-Destructive ROM test and OSvce tests will be run MSB70 Unit 1 Non-Destructive ROM test and OSvce tests will be run MSB70 Unit 0 Tst Passed MSB70 Unit 1 Tst Passed	
	If the TST command	Do
	passes on both units	step 50
	fails on one or both units, and part of the response is Try PMRESET	step 39
	fails on one or both units, and part of the response is check for possible logs	step 38
	fails on one or both units, and part of the response is PM failed to initialize, try reload- ing	step 53
	fails on one or both units, and the system generated a card list	step 41
	fails on one or both units, and the system did not gen- erate a card list	step 43

PM MSB6, MSB7 critical, major, or minor (continued)

	If the TST command	Do
	other than listed here	step 109
50	To return the MSB to service, type >RTS PM and press the Enter key. <i>Example of a MAP response:</i> MSB7 0 Rts Passed	
	If the RTS command	Do
	passes, and both MSB units are InSv, but you recorded other SysB MSBs in step 9	step 11
	passes, and one MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14
	passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
	passes, both MSB units are InSv, and other MSBs are not SysB	step 110
	passes, and both MSB units are ISTb	step 95
	fails on one unit, and the system generated a card list	step 41
	fails on one unit, and the system did not generate a card list	step 43
51	Determine if one or both MSB units are system busy.	
	If	Do
	one MSB unit is SysB	step 52
	both MSB units are SysB	step 56
52	To manually busy the system busy MSB unit, type >BSY UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the system busy MSB unit (0 or 1)	

PM MSB6, MSB7 critical, major, or minor (continued)

- 53** To load the MSB unit, type
>LOADPM UNIT unit_no
 and press the Enter key.
where
unit_no
 is the number of the MSB unit (0 or1) that you busied in step 52

If the LOADPM command	Do
passes	step 55
is other than listed here	step 54

- 54** Perform the procedure *Loading a PM* in this document. Complete the procedure and return to this point.

- 55** To return the manually-busy MSB unit to service, type
>RTS UNIT unit_no
 and press the Enter key.

where
unit_no
 is the number of the MSB unit (0 or1) that you loaded in step 53

If the RTS command	Do
passes, both MSB units are InSv, and other MSBs are not SysB	step 110
passes, and both MSB units are InSv, but you recorded other SysB MSBs in step 9	step 11
passes, and the MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14
passes, and both MSB units are ISTb	step 95
passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
fails	step 109

- 56** To manually busy the MSB, type
>BSY PM
 and press the Enter key.

- 57** To load the MSB, type
>LOADPM PM

PM MSB6, MSB7 critical, major, or minor (continued)

and press the Enter key.

If the LOADPM command	Do
passes	step 59
other than listed here	step 58

58 Perform the procedure *Loading a PM* in this document. Complete the procedure and return to this point.

59 To return the MSB to service, type

>RTS PM

and press the Enter key.

If the RTS command	Do
passes, both MSB units are InSv, and other MSBs are not SysB	step 110
passes, and both MSB units are InSv, but you recorded other SysB MSBs in step 9	step 11
passes, and the MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14
passes, and both MSB units are ISTb	step 95
passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
fails	step 109

60 To display all C-side busy MSBs, type

>DISP STATE CBSY MSBx

and press the Enter key.

where

x
is the type of MSB (6 or 7)

Example of a MAP response:

CBSy MSB7 : 6,8

61 Record the number of each C-side busy MSB.

62 Choose an MSB on which to work.

63 To post the MSB, type

>POST MSBx msb_no

and press the Enter key.

PM MSB6, MSB7
critical, major, or minor (continued)

where

x
is the type of MSB (6 or 7)

msb_no
is the number of the MSB that you will post (0 to 9)

Example of a MAP response:

```
MSB7      6 CBsy  Links_00S: CSide 32 , PSide  0
Unit0:    Act   CBsy
Unit1:    Inact CBsy
```

If	Do
one MSB unit is CBsy and the other MSB unit is SysB or ManB	step 64
both MSB units are CBsy	step 65

64 Work on the C-side busy unit first.

65 The fault is on the C-side of the MSB.
To obtain the network, plane, and link numbers of the links that the MSB communicates through, type

>TRNSL C

and press the Enter key.

Example of a MAP response:

```
Link  0: NET 0  0 32 00  0;Cap MS;Status:OK
Link  1: NET 1  0 32 00  0;Cap MS;Status:OK

Link 30: NET 0  0 32 00 15;Cap S;Status:OK
Link 31: NET 1  0 32 00 15;Cap S;Status:OK
```

Note: Link 2 to link 29 do not appear in this example.

66 Perform the correct procedure in this document. Complete the procedure and return to this point.

67 To post the MSB that was C-side busy, type

>PM;POST MSBx msb_no

and press the Enter key.

where

x
is the type of MSB (6 or 7)

msb_no
is the number of the MSB that you want post (0 to 9)

PM MSB6, MSB7 critical, major, or minor (continued)

Example of a MAP response:

```
MSB7      6 CBSy Links_00S: CSide  0 , PSide  0
Unit0:    Act   InSv
Unit1:    Inact SysB
```

If	Do
both MSB units are InSv, but you recorded other CBSy MSBs in step 61	step 63
both MSB units are InSv, and no other MSBs are CBSy	step 110
one MSB unit is InSv, while the other MSB unit is ManB	step 73
one MSB unit is InSv, while the other MSB unit is SysB	step 14
one or both MSB units remain CBSy	step 109
one or both MSB units are ISTb	step 96

68 To display all manually-busy MSBs, type

>DISP STATE MANB MSBx

and press the Enter key.

where

x
is the type of MSB (6 or 7)

Example of a MAP response:

ManB MSB7 : 2,10

69 Record the number of each manually-busy MSB.

70 Choose an MSB on which to work.

71 To post the MSB, type

>POST MSBx msb_no

and press the Enter key.

where

x
is the type of MSB (6 or 7)

msb_no
is the number of the MSB that you want to post (0 to 9)

Example of a MAP response:

PM MSB6, MSB7 critical, major, or minor (continued)

```
MSB7      2 CBsy Links_00S: CSide  0 , PSide  0
Unit0:    Act   ManB
Unit1:    Inact ManB
```

- 72** Choose a manually-busy unit to work on (0 or 1).
- 73** Determine from office records or operating company personnel why the unit is manually-busy.

When you have permission, continue the procedure.

- 74** To test the MSB unit, type

```
>TST UNIT unit_no
```

and press the Enter key.

where

unit_no

is the number of the MSB unit that you want to test (0 or 1)

Example of a MAP response:

```
MSB7 2 Unit 0    Non-Destructive ROM test and
                  OSvce tests will be run
MSB7 2 Unit 1    Non-Destructive ROM test and
                  OSvce tests will be run
MSB7 2 Unit 0    Tst Passed
MSB7 2 Unit 1    Tst Passed
```

If the TST command	Do
passes	step 77
fails, and part of the response is Try PMRESET	step 76
fails, and part of the response is check for possible logs	step 75
fails on one unit, and part of the MAP response is PM failed to initialize, try reloading	step 80
fails, and the system generated a card list	step 78
fails, and the system did not generate a card list	step 80
is other than listed here	step 109

PM MSB6, MSB7
critical, major, or minor (continued)

75	Obtain the log that the system generated for the MSB.

If the log	Do
provides a card list	step 78
does not provide a card list	step 80

76	To reset the MSB unit, type >PMRESET UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the MSB unit (0 or 1) that you tested in step 74 <i>Example of a MAP response:</i> MSB7 2 Unit 1 PMReset Passed

If the PMRESET command	Do
passes	step 77
fails	step 80

77	To return the manually-busy MSB unit to service, type >RTS UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the MSB unit (0 or 1) that you tested in step 74 <i>Example of a MAP response:</i> MSB7 2 Unit 1 Rts Passed

If the RTS command	Do
passes, and the MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14
passes, and the MSB unit is InSv or ISTb, while the other MSB unit is ManB	step 73
passes, both MSB units are InSv, and other MSBs are not ManB	step 110
passes, and both MSB units are InSv, but you re-recorded other ManB MSBs in step 69	step 71

PM MSB6, MSB7 critical, major, or minor (continued)

	If the RTS command	Do
	passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
	passes, and both MSB units are ISTb	step 95
	fails, and the system generated a card list	step 78
	fails, and the system did not generate a card list	step 80
	other than listed here	step 109
78	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.	
79	To replace the first card on the list, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
80	To load the MSB unit, type >LOADPM UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the MSB unit (0 or 1) that you tested in step 74	
	If the LOADPM command	Do
	passes	step 82
	fails	step 81
81	Perform the procedure <i>Loading a PM</i> in this document. Complete the procedure and return to this point.	
82	To return the manually-busy MSB unit to service, type >RTS UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the MSB unit (0 or 1) <i>Example of a MAP response:</i> MSB7 2 Unit 1 Rts Passed	
	If the RTS command	Do
	passes, and the MSB unit is InSv or ISTb, while the other MSB unit is ManB	step 73

PM MSB6, MSB7 critical, major, or minor (continued)

	If the RTS command	Do
	passes, both MSB units are InSv, and other MSBs are not ManB	step 110
	passes, and both MSB units are InSv, but you recorded other ManB MSBs in step 69	step 71
	passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
	passes, and both MSB units are ISTb	step 95
	fails and you did not replace all cards in the list that you recorded in step 78	step 83
	fails and you replaced all cards in the list that you recorded in step 78	step 109
	other than listed here	step 109
83	To replace the next card on the list, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
84	Go to step 80.	
85	To display all in-service trouble MSBs, type >DISP STATE ISTB MSBx and press the Enter key. <i>where</i> x is the type of MSB (6 or 7) <i>Example of a MAP response:</i> ISTb MSB7 : 12	
86	Record the number of each in-service trouble MSB.	
87	Choose an MSB on which to work.	
88	To post the selected MSB, type >POST MSBx msb_no and press the Enter key. <i>where</i> x is the type of MSB (6 or 7) msb_no is the number of the MSB that you want to post (0 to 9) <i>Example of a MAP response:</i>	

PM MSB6, MSB7 critical, major, or minor (continued)

```
MSB7      12 ISTb  Links_00S: CSide  0 , PSide  0
Unit0:    Inact InSv
Unit1:    Act   ISTb
```

If	Do
one MSB unit is SysB and the other MSB unit is either ISTb or InSv	step 89
one MSB unit is ManB and the other MSB unit is ISTb or InSv	step 90
one MSB unit is InSv, while the other MSB unit is CBSy	step 91
one MSB unit is ISTb and the other MSB unit is InSv	step 92
both MSB units are ISTb	step 95
both MSB units are InSv	step 96

- 89** Go to step 28 to work on the system busy unit first.
- 90** Go to step 73 to work on the manually-busy unit first.
- 91** Perform the procedure *Clearing a PM IPML major or minor alarm* in this document. Complete the procedure and return to this point.
- 92** Determine if the posted MSB unit is active or inactive.
Note: The activity status of the unit appears on the right of the MSB unit number in the MAP display that appears in step 88.

If the unit	Do
is inactive	step 95
is active	step 93

- 93** To switch the activity of the units, type

>SWACT

and press the Enter key.

Example of a MAP response:

A Warm SWACT will be performed after data sync of active terminals Please confirm ("YES", "Y", "NO", "N"):

PM MSB6, MSB7 critical, major, or minor (continued)

94

**CAUTION****Possible loss of service**

If the system directs you to confirm a cold SWACT, perform this activity during a period of low traffic. If you perform this activity during other periods of traffic, the system drops all data calls and other calls that the PM handles.

To confirm the command, type

>YES

and press the Enter key.

Note: When the SWACT executes, the system performs maintenance on the inactive unit that has faults. The system performs maintenance on the unit in an attempt to return the unit to service. Wait until system maintenance is complete before you perform manual maintenance on the unit. System maintenance takes 2 to 3 min.

95 Work on the inactive ISTb unit.

96 To determine the cause of the in-service trouble condition, type

>QUERYPM FLT

and press the Enter key.

Note: One unit can have more than one in-service trouble condition at a given time. The unit remains in-service trouble until all the in-service-trouble conditions clear on the given unit.

If the response	Do
is PM Overloaded	step 109
is PM Load mismatch with Inventory table	step 98
is Load File mismatch with Inventory table	step 98
is STCLOAD mismatch with Inventory table	step 98
is Dynamic data sync in progress	step 97
is Superframe sync in progress	step 97
is Static data mismatch with CC	step 100
is Sync trouble	step 100

PM MSB6, MSB7 critical, major, or minor (continued)

	If the response	Do
	is Fault with STI card	step 100
	is C-side links out of service	step 105
	is other than listed here	step 109
97	If other in-service trouble conditions are not present, the system automatically returns the MSB unit to service. The system returns the MSB unit to service after a dynamic data or superframe synchronization process. Note: The system requires 5 min to change the status of the MSB unit after a dynamic data or superframe synchronization process.	
	If after 5 min	Do
	the MSB unit is InSv, while the other MSB is ISTb	step 96
	both MSB units are InSv, and other MSBs are not ISTb	step 110
	both MSB units are InSv, but you recorded other ISTb MSBs in step 86	step 88
	the MSB unit remains ISTb	step 96
98	Perform the procedure <i>Correcting and load mismatch</i> in this document. Complete the procedure and return to this point.	
99	Determine the status of the MSB units from the MAP display of the posted MSB. Note: A maintenance flag (Mtce) appears when maintenance tasks are in progress. Wait until the flag disappears before you proceed with the next maintenance action.	
	If	Do
	both MSB units are InSv, and other MSBs are not ISTb	step 110
	both MSB units are InSv, but you recorded other ISTb MSBs in step 86	step 88
	one MSB unit is InSv, while the other MSB is ISTb	step 92
	the MSB unit remains ISTb	step 96

PM MSB6, MSB7 critical, major, or minor (continued)

100

**CAUTION****Possible loss of service**

The active unit does not have backup until you return the inactive unit to service. System maintenance on the active unit can cause traffic interruption. Perform this section of the procedure during a period of low traffic to minimize the risk of traffic interruption.

To busy the MSB unit, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no

is the number of the MSB unit that you want to busy (0 or 1)

If the BSY command	Do
passes	step 101
fails	step 109

101

To return the MSB unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no

is the number of the MSB unit (0 or 1)

If the RTS command	Do
passes, both MSB units are InSv, and other MSBs are not ISTb	step 110
passes, and both MSB units are InSv, but you recorded other ISTb MSBs in step 86	step 88
passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
passes, but the MSB unit remains ISTb	step 96
fails	step 102

PM MSB6, MSB7
critical, major, or minor (continued)

- 102** To load the MSB unit, type
>LOADPM UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or 1)

If the LOADPM command	Do
passes	step 104
fails	step 103

- 103** Perform the procedure *Loading a PM* in this document. Complete the procedure and return to this point.

- 104** To return the MSB unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or 1)

If the RTS command	Do
passes, both MSB units are InSv, and other MSBs are not ISTb	step 110
passes, and both MSB units are InSv, but you recorded other ISTb MSBs in step 86	step 88
passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
passes, but the MSB unit remains ISTb	step 96
fails	step 109

- 105** To identify the out-of-service C-side links, type

>TRNSL C

and press the Enter key.

Example of a MAP response:

PM MSB6, MSB7
critical, major, or minor (end)

Link 0: NET 0 0 32 00 0;Cap MS;Status:OK
Link 1: NET 1 0 32 00 0;Cap MS;Status:OK

Link 30: NET 0 0 32 00 15;Cap S;Status:OK
Link 31: NET 1 0 32 00 15;Cap S;Status:OK

Note: Links 2 to 29 do not appear in this example.

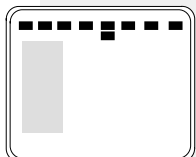
- 106** Record the network, plane, and link number of the links that do not have a status of OK.
- 107** Perform the correct procedure in this document. Complete the procedure and return to this point.
- 108** To post the MSB that had out-of-service C-side links, type
>PM;POST MSBx msb_no
and press the Enter key.
where
x
is the type of MSB (6 or 7)
msb_no
is the number of the MSB (0 to 9)

If the MSB	Do
is InSv, and other MSBs are not ISTb	step 110
is InSv, but you recorded other InSv MSBs in step 86	step 88
remains ISTb	step 96

- 109** For additional help, contact the next level of support.
- 110** The procedure is complete.

PM NIU critical

Alarm display

	CM	MS	IOD	Net	PM 1NIU *C*	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	.	.	.

Indication

At the MTC level of the MAP display, NIU (preceded by a number) appears under the PM header of the alarm banner. The NIU indicates a critical alarm for the network interface unit (NIU).

Meaning

A minimum of one NIU is system busy, system busy not accessible, or in-service trouble not accessible.

The number under the PM header of the alarm banner indicates the number of NIUs affected.

Result

The indicated NIUs are out of service.

Common procedures

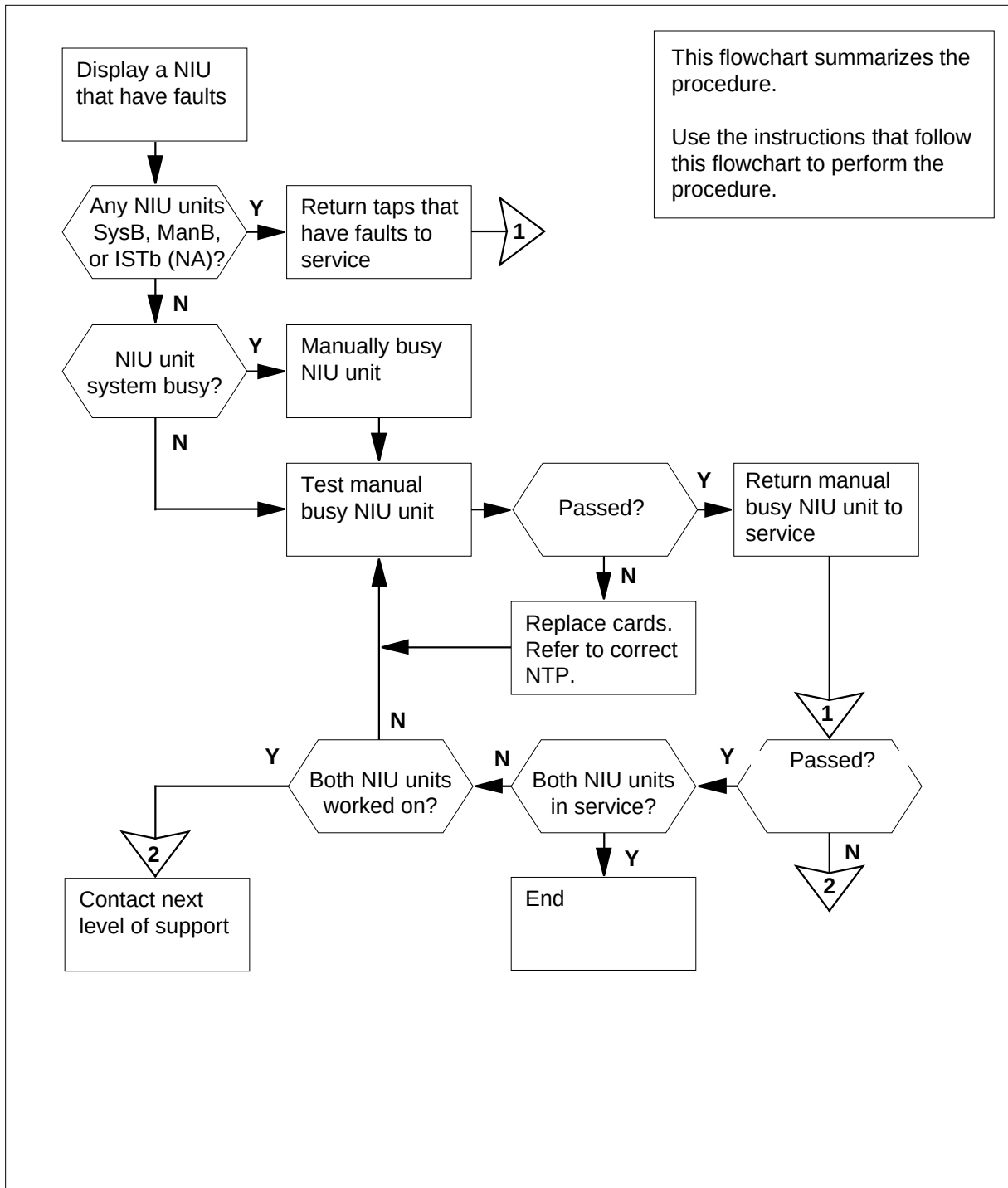
There are no common procedures.

Action

This section provides a summary flowchart of the procedure and a list of steps to clear an alarm. A detailed step-action procedure follows the flowchart.

PM NIU critical (continued)

Summary of clearing a PM NIU critical alarm



PM NIU critical (continued)

Clearing a PM NIU critical alarm

At the MAP terminal

- 1 To access the PM level of the MAP display, type

>MAPCI ; MTC ; PM

and press the Enter key.

Example of a MAP display:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	1	0	0	0	0	39

- 2 To display all system busy NIUs, type

>DISP STATE SYSB NIU

and press the Enter key.

Example of a MAP response:

SysB NIU: 0

If	Do
SysB NIUs are present	step 5
SysB NIUs are not present	step 3

- 3 To display all in-service trouble not available NIUs, type

>POST NIU ISTB

and press the Enter key.

- 4 Scroll through the in-service trouble NIUs to find an NIU that is in-service trouble not available. To scroll through the NIUs, type

>NEXT

and press the Enter key.

If you reach the end of the posted set and an ISTb (NA) NIU	Do
appears	step 7
does not appear	step 73

- 5 Choose a system busy NIU to work on.

- 6 To post the selected system busy NIU, type

>POST NIU niu_no

and press the Enter key.

where

PM NIU critical (continued)

niu_no

is the number of the NIU (0 to 29)

Example of a MAP display:

```
NIU 0:  SysB
Unit 0: Act      SysB
Unit 1: InAct    ManB
```

Note: In the example, NIU 0 is system busy. On your MAP display, the NIU selected can be system busy not available (SysB (NA)).

Go to step 9.

- 7** Choose an in-service trouble not available NIU to work on.

- 8** To post the selected in-service not available NIU, type

>POST NIU niu_no

and press the Enter key.

where

niu_no

is the number of the NIU (0 to 29)

Example of a MAP display:

```
NIU 0:  ISTb (NA)
Unit 0: Act      ISTb (NA)
Unit 1: InAct    ManB
```

Note: In the example, NIU 0 is in-service trouble not available.

- 9** Determine the state of each unit of the selected NIU.

Note: In the example in step 6, NIU unit 0 is the active unit and is system busy. Unit 1 is the inactive unit and is manual busy. In the example in step 8, NIU unit 0 is the active unit and is in-service trouble not available. Unit 1 is the inactive unit and is manual busy.

If one unit	Do
is ManB	step 10
is SysB	step 20
is ManB (NA)	step 21
is SysB (NA)	step 21
is ISTb (NA)	step 21

- 10** Consult office records or operating company personnel. Determine the reason why the NIU unit is manual busy.

When you have permission, continue this procedure.

PM NIU**critical** (continued)

- 11** To test the manual busy NIU unit, type

>TST UNIT unit_no

and press the Enter key.

where

unit_no

is the number of the NIU unit (0 or 1)

Example of a MAP response:

One or more problems are suspected with the following cards. Please check them in the order listed.

Site	Flr	RPos	Ray_id	Shf	Description	Slot	EqPEC
HOST	00	A00	NIU:001	02	IPF	22	EX22BB FRNT
HOST	00	A00	NIU:001	02	CBC	21	EX25BA FRNT

If the TST command	Do

passed

step 71

failed, and the system generates
a card list

step 12

failed, and the system does not
generate a card list

step 14

-
- 12** Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.
- 13** Replace the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.
- 14** To reset the NIU unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

unit_no

is the number of the NIU unit (0 or 1)

Example of a MAP response:

WARNING: Issuing a reset will restart the software in the unit.

Please confirm ("YES", "Y", "NO", or "N"):

- 15** To confirm the command, type

>YES

PM NIU critical (continued)

and press the Enter key.

If the PMRESET command	Do
passed	step 19
failed	step 16

- 16** To load the NIU unit, type
>LOADPM UNIT unit_no
 and press the Enter key.
 where

unit_no
 is the number of the NIU unit (0 or 1)

If the LOADPM command	Do
passed	step 19
failed, and you did not replace all the cards in the list that you recorded in step 12	step 17
failed, and you replaced all cards in the list that you recorded in step 12	step 72
failed, and the system did not generate a card list in step 11	step 73

- 17** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 18** Go to step 14.

- 19** To test the manual busy NIU unit, type
>TST UNIT unit_no
 and press the Enter key.
 where

unit_no
 is the number of the NIU unit (0 or 1)

If the TST command	Do
passed	step 71

PM NIU critical (continued)

	If the TST command	Do
	failed, and you did not replace all cards in the list that you recorded in step 12	step 17
	failed, and you replaced all cards in the list that you recorded in step 12	step 72
20	To manually busy the system busy NIU unit, type >BSY UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the NIU unit (0 or 1)	
	Go to step 11.	
21	To determine the number of the link interface module (LIM) which associates with the NIU, type >QUERYPM and press the Enter key. <i>Example of a MAP response:</i>	
	<pre> PM Type: NIU PM No: 2 Status: SYSb (NA) Unit 0 Status: {InAct, SysB(NA)} Unit 1 Status: {Act , SysB} Site Flr RPos Bay_id Shf Pos Description Slot_Range HOST 1 A 4 1 NIU 2 18 - 21 Location: LIM 2 shelf 1 Unit 0 Software Load.Datafilled:NRS34CJ Actual:NRS34CJ UNIT 1 Software Load.Datafilled:NRS34CJ Actual: </pre>	
22	Record the number of the LIM for the NIU you are working on. An example of a MAP response appears in step 21.	
23	To post the LIM for the NIU, type >POST LIM lim_no and press the Enter key. <i>where</i> lim_no is the number of the LIM (0 to 16)	

PM NIU critical (continued)

- 24** To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP display:

```
LIM 1 ISTb
                                Links_00S   Taps_00S
Unit0:  ISTb                    .           19
Unit1:  InSv                    .           2
      Tap: 0    4    8    12  16  20  24  28  32
FBus0: ManB      BBBB BBBB BBBB BBBB ---- ---- ---- ---B BB--
FBus1: InSv      ...M .I.. .S.. .... ---- ---- ---- ---. --
```

Note 1: In the example, B under a tap number indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. The letter M indicates a manual busy tap. The letter I indicates an in-service trouble tap. The letter S indicates a system busy tap. A dash (-) indicates an unequipped tap.

Note 2: Link peripheral processors (LPP) with shelves for the two-slot link interface unit have 36 taps.

- 25** Determine the state of the LIM and the F-buses.

If the state of the LIM and both F-buses	Do
is InSv or ISTb	step 31
is not InSv and not ISTb	step 26

- 26** Record the state of the LIM and F-buses that has faults.

Note: A problem with the LIM produces a PM LIM alarm. A problem with the F-bus produces a PM LIMF alarm.

If the state of	Do
the LIM is SysB or SysB (RU)	step 27
the LIM is ManB, ManB (RU), or ISTb (RU)	step 28
both F-buses is S or M	step 29
one of the F-buses is S or M	step 30

- 27** Perform the procedure *Clearing a PM LIM critical alarm* in this document. Complete the procedure and return to this point.

PM NIU critical (continued)

- Go to step 1.
- 28** Perform the procedure *Clearing a PM LIM major alarm* in this document. Complete the procedure and return to this point.
- Go to step 1.
- 29** Perform the procedure *Clearing a PM LIMF critical alarm* in this document. Complete the procedure and return to this point.
- Go to step 1.
- 30** Perform the procedure *Clearing a PM LIMF major alarm* in this document. Complete the procedure and return to this point.
- Go to step 1.
- 31** To determine the F-bus taps for the NIU, type
>TRNSL n
 and press the Enter key.
where
n
 is the number of either F-bus (0 or 1)
- Note:** The information in the response applies to both F-buses. The list is 24 to 36 lines long.
- Example of a MAP response:*
- ```
LIM 0 FBus 0 Tap 0 is unequipped.
LIM 0 FBus 0 Tap 1 is unequipped.
LIM 0 FBus 0 Tap 2 is on LIU 121.
LIM 0 FBus 0 Tap 3 is on LIU 122.
LIM 0 FBus 0 Tap 4 is unequipped.
LIM 0 FBus 0 Tap 5 is unequipped.
LIM 0 FBus 0 Tap 6 is on NIU 1 unit 0.
LIM 0 FBus 0 Tap 7 is on NIU 1 unit 1.
```
- 32** Record the F-bus tap numbers for the NIU unit. Read through the MAP response until you find the correct NIU.
- 33** Determine the state of the F-bus taps for the NIU unit.
- Note:** The tap numbers that you recorded in step 32 apply to both F-buses. An example of the MAP appears in step 24.
- | If the state of                                 | Do      |
|-------------------------------------------------|---------|
| both F-bus taps is M                            | step 34 |
| both F-bus taps is S                            | step 44 |
| one F-bus tap is M and the other F-bus tap is S | step 34 |
- 34** Choose a manual busy F-bus tap to work on.



## PM NIU critical (continued)

- 35** Consult office records or operating company personnel to determine why the F-bus tap is manual busy.

When you have permission, continue this procedure.

- 36** To return the F-bus tap to service, type

**>RTS FBUS fbus\_no tap\_no**

and press the Enter key.

where

**fbus\_no**

is the number of the F-bus (0 or 1)

**tap\_no**

is the number of the F-bus tap (0 to 35)

| If the RTS command                                            | Do      |
|---------------------------------------------------------------|---------|
| passed, with the response local maintenance not accessible    | step 37 |
| passed, without the response local maintenance not accessible | step 67 |
| failed, and the system generates a card list                  | step 38 |
| failed, and the system does not generate a card list          | step 67 |

- 37** Wait one minute until the state of the F-bus tap is in service.

| If, after one minute, the state of the F-bus tap | Do      |
|--------------------------------------------------|---------|
| is in service                                    | step 67 |
| is, S, or does not stabilize                     | step 44 |

- 38** Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

- 39** To access the PM level of the MAP display, type

**>PM**

and press the Enter key.

- 40** To post the NIU for the F-bus tap, type

**>POST NIU niu\_no**

## PM NIU critical (continued)

and press the Enter key.

where

**niu\_no**  
is the number of the NIU (0 to 29)

| If the state of the NIU unit | Do      |
|------------------------------|---------|
| is ManB                      | step 42 |
| is SysB                      | step 41 |

41



### CAUTION

#### Possible service-affecting action

Contact the next level of support to make sure that you have permission to busy the NIU unit before you continue. Do not remove the in-service trouble NIU unit from service, if the mate NIU unit is out of service. When you take the complete NIU peripheral module out of service, you isolate application-specific units (ASUs) and interrupt service.



### WARNING

#### Possible service-affecting action

Contact the next level of support to make sure that you have permission to busy the NIU unit before you continue. Do not remove the in-service trouble NIU unit from service, if the mate NIU unit is out of service. When you take the complete NIU peripheral module out of service, you isolate application-specific units (ASUs) and interrupt service.

To manually busy the NIU unit that associates with the F-bus tap, type

**>BSY UNIT unit\_no**

and press the Enter key.

where

**unit\_no**  
is the number of the NIU unit (0 or 1)

- 42 Replace the first card on the list that you recorded in step 38. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.
- 43 Go to step 51.

## PM NIU critical (continued)

- 44** To access the PM level of the MAP display, type  
**>PM**  
 and press the Enter key.

- 45** To post the NIU, type  
**>POST NIU niu\_no**  
 and press the Enter key.  
*where*

**niu\_no**  
 is the number of the NIU (0 to 29)

| If the state of the NIU unit | Do      |
|------------------------------|---------|
| is ManB                      | step 47 |
| is SysB                      | step 46 |

**46**



### CAUTION

#### Possible service-affecting action

Contact the next level of support to make sure that you have permission to busy the NIU unit before you continue. Do not remove the in-service trouble NIU unit from service if the mate NIU unit is out of service. When you take the complete NIU peripheral module out of service, you isolate application-specific units (ASUs) and interrupt service.



### WARNING

#### Possible service-affecting action

Contact the next level of support to make sure that you have permission to busy the NIU unit before you continue. Do not remove the in-service trouble NIU unit from service if the mate NIU unit is out of service. When you take the complete NIU peripheral module out of service, you isolate application-specific units (ASUs) and interrupt service.

To manually busy the NIU unit, type

**>BSY UNIT unit\_no**  
 and press the Enter key.

*where*

## PM NIU critical (continued)

**unit\_no**  
is the number of the NIU unit (0 or 1)

- 47 To test the manual busy NIU unit , type

**>TST UNIT unit\_no**

and press the Enter key.

where

**unit\_no**  
is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

One or more problems are suspected with the following cards. Please check them in the order listed.

| Site | Flr | RPos | Ray_id  | Shf | Description | Slot | EqPEC       |
|------|-----|------|---------|-----|-------------|------|-------------|
| HOST | 00  | A00  | NIU:001 | 02  | IPF         | 22   | EX22BB FRNT |
| HOST | 00  | A00  | NIU:001 | 02  | CBC         | 21   | EX25BA FRNT |

| If the TST command                                   | Do      |
|------------------------------------------------------|---------|
| passed                                               | step 71 |
| failed, and the system generates a card list         | step 48 |
| failed, and the system does not generate a card list | step 51 |

- 48 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

- 49 Replace the first card on the list that you recorded in step 38. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 50 Go to step 56.

- 51 To reset the NIU unit, type

**>PMRESET UNIT unit\_no**

and press the Enter key.

where

**unit\_no**  
is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

WARNING: Issuing a reset will restart the software in the unit.

Please confirm ("YES", "Y", "NO", or "N"):

## PM NIU critical (continued)

- 52** To confirm the command, type  
**>YES**  
 and press the Enter key.

| If the <b>PMRESET</b> command | Do      |
|-------------------------------|---------|
| passed                        | step 61 |
| failed                        | step 53 |

- 53** To load the NIU unit, type  
**>LOADPM UNIT unit\_no**  
 and press the Enter key.  
*where*  
     **unit\_no**  
     is the number of the NIU unit (0 or 1)

| If the <b>LOADPM</b> command                                                  | Do      |
|-------------------------------------------------------------------------------|---------|
| passes                                                                        | step 61 |
| fails, you did not replace all cards in the list that you recorded in step 38 | step 54 |
| failed, and you replaced all cards in the list that you recorded in step 38   | step 65 |
| fails, and the system did not generate a card list in step 36                 | step 73 |

- 54** Replace the next card on the list that you recorded in step 38. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 55** Go to step 51.

- 56** To reset the NIU unit, type  
**>PMRESET UNIT unit\_no**  
 and press the Enter key.  
*where*  
     **unit\_no**  
     is the number of the NIU unit (0 or 1)  
*Example of a MAP response:*

**PM NIU**  
**critical** (continued)

---

WARNING: Issuing a reset will restart the software in the unit.  
Please confirm ("YES", "Y", "NO", or "N"):

- 57** To confirm the command, type  
**>YES**  
and press the Enter key.

---

| If the <b>PMRESET</b> command | Do      |
|-------------------------------|---------|
| passed                        | step 61 |
| failed                        | step 58 |

---

- 58** To load the NIU unit, type  
**>LOADPM UNIT unit\_no**  
and press the Enter key.  
*where*  
**unit\_no**  
is the number of the NIU unit (0 or 1)

---

| If the <b>LOADPM</b> command                                                      | Do      |
|-----------------------------------------------------------------------------------|---------|
| passed                                                                            | step 61 |
| fails, and you did not replace all cards in the list that you recorded in step 48 | step 59 |
| failed, and you replaced all cards in the list that you recorded in step 48       | step 65 |
| fails, and the system did not generate a card list in step 47                     | step 73 |

---

- 59** Replace the next card on the list that you recorded in step 38. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 60** Go to step 56.

- 61** To post the LIM for the NIU, type  
**>POST LIM lim\_no**  
and press the Enter key.  
*where*

---

**PM NIU**  
**critical** (continued)

---

- lim\_no**  
is the number of the LIM (0 to 16)
- 62** To access the F-bus level of the MAP display, type  
**>FBUS**  
and press the Enter key.

| If the F-bus tap | Do      |
|------------------|---------|
| is M             | step 64 |
| is I or S        | step 63 |

- 63** To manually busy the F-bus tap, type  
**>BSY FBUS fbus\_no tap\_no**  
and press the Enter key.  
*where*

**fbus\_no**  
is the number of the F-bus (0 or 1)

**tap\_no**  
is the number of the F-bus tap (0 to 35)

- 64** To return the F-bus tap to service, type  
**>RTS FBUS fbus\_no tap\_no**  
and press the Enter key.  
*where*

**fbus\_no**  
is the number of the F-bus (0 or 1)

**tap\_no**  
is the number of the F-bus tap (0 to 35)

| If the RTS command                                                     | Do      |
|------------------------------------------------------------------------|---------|
| passed                                                                 | step 67 |
| failed, and the same tap on the other F-bus is S and was not worked on | step 44 |
| failed, and the same tap on the other F-bus is M and was not worked on | step 35 |
| failed, and both F-bus taps were worked on                             | step 73 |

---

## PM NIU

### critical (continued)

---

- 65 To post the LIM for the NIU, type  
**>POST LIM lim\_no**  
and press the Enter key.  
*where*  
    **lim\_no**  
        is the number of the LIM (0 to 16)
- 66 To access the F-bus level of the MAP display, type  
**>FBUS**  
and press the Enter key.
- 67 Determine if you worked on both F-bus taps.

---

| If the same tap on the other F-bus | Do      |
|------------------------------------|---------|
| is S, and was not worked on        | step 44 |
| is M, and was not worked on        | step 35 |
| is S or M, and was worked on       | step 73 |
| is in service                      | step 68 |

---

- 68 To access the PM level of the MAP display, type  
**>PM**  
and press the Enter key.
- 69 To post the NIU for the F-bus tap, type  
**>POST NIU niu\_no**  
and press the Enter key.

*where*

**niu\_no**  
        is the number of the NIU (0 to 29)

*Example of a MAP response:*

NIU 2: InSv  
Unit 0: Act      InSv  
Unit 1: InAct    InSv

---

| If the state of the NIU unit | Do      |
|------------------------------|---------|
| is ManB                      | step 71 |
| is SysB                      | step 70 |

---



PM NIU  
critical (continued)

70



**CAUTION**  
**Potential service-affecting action**  
Contact the next level of support to make sure that you have permission to busy the NIU unit before you continue. Do not remove the in-service trouble NIU unit from service if the mate NIU unit is out of service. When you take the complete NIU peripheral module out of service, you isolate application-specific units (ASUs) and interrupt service.



**WARNING**  
**Potential service-affecting action**  
Contact the next level of support to make sure that you have permission to busy the NIU unit before you continue. Do not remove the in-service trouble NIU unit from service if the mate NIU unit is out of service. When you take the complete NIU peripheral module out of service, you isolate application-specific units (ASUs) and interrupt service.

To manually busy the NIU unit, type

**>BSY UNIT unit\_no**

and press the Enter key.

where

**unit\_no**  
is the number of the NIU unit (0 or 1)

71 To return the NIU unit to service, type

**>RTS UNIT unit\_no**

and press the Enter key.

where

**unit\_no**  
is the number of the NIU unit (0 or 1)

| If the RTS command                                          | Do      |
|-------------------------------------------------------------|---------|
| passed, and the unit is InSv                                | step 72 |
| failed, and the mate NIU unit is SysB and was not worked on | step 20 |

**PM NIU**  
**critical** (end)

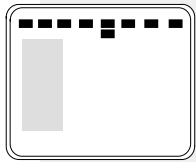
---

|           | <b>If the RTS command</b>                                            | <b>Do</b> |
|-----------|----------------------------------------------------------------------|-----------|
|           | failed, and the mate NIU unit is ManB and was not worked on          | step 10   |
|           | failed, and the mate NIU unit was worked on                          | step 73   |
| <b>72</b> | Determine if you used this procedure to work on the mate NIU unit.   |           |
|           | <b>If the mate NIU unit</b>                                          | <b>Do</b> |
|           | is SysB, and was not worked on                                       | step 20   |
|           | is ManB, and was not worked on                                       | step 10   |
|           | is Sysb (NA), ManB (NA), or ISTb (NA), and was not worked on         | step 21   |
|           | is SysB, ManB, SysB (NA), ManB (NA), or ISTb (NA), and was worked on | step 73   |
|           | is InSv                                                              | step 74   |
| <b>73</b> | For additional help, contact the next level of support.              |           |
| <b>74</b> | The procedure is complete.                                           |           |

---

**PM NIU  
major**

---

**Alarm display**

| CM | MS | IOD | Net | PM   | CCS | Lns | Trks | Ext | APPL |
|----|----|-----|-----|------|-----|-----|------|-----|------|
| .  | .  | .   | .   | 1NIU | .   | .   | .    | .   | .    |
|    |    |     |     | M    |     |     |      |     |      |

**Indication**

At the MTC level of the MAP display, NIU (preceded by a number) appears under the PM header of the alarm banner. The NIU indicates a major alarm for the network interface unit (NIU).

**Meaning**

A minimum of one NIU is manual busy or manual busy not accessible.

The number under the PM header of the alarm banner indicates the number of NIUs affected.

**Result**

The indicated number of NIUs are out of service.

**Common procedures**

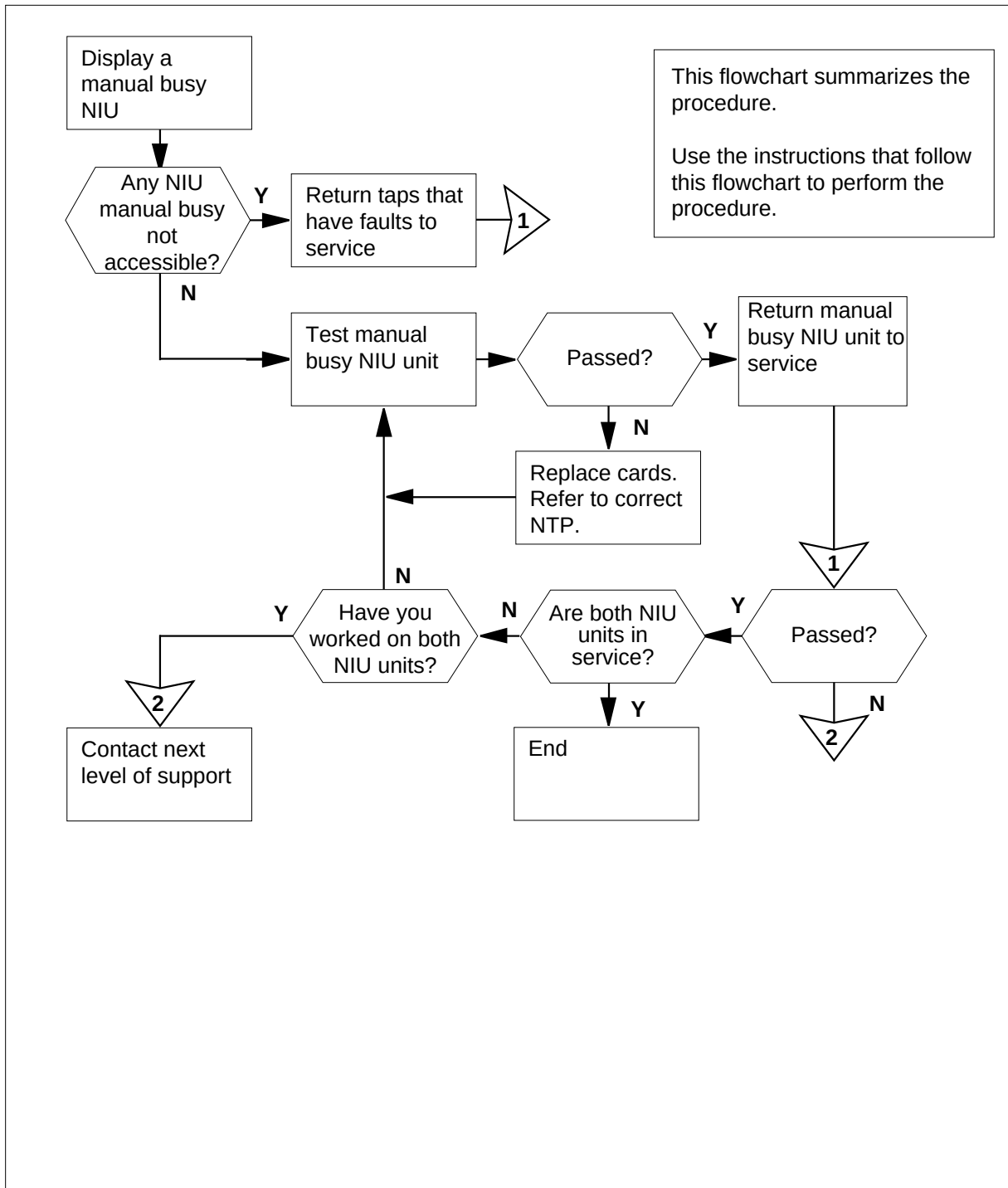
There are no common procedures.

**Action**

This section provides a summary flowchart of the procedure and a list of steps to clear an alarm. A detailed step-action procedure follows the flowchart.

## PM NIU major (continued)

### Summary of clearing a PM NIU major alarm



## PM NIU major (continued)

### Clearing a PM NIU major alarm

#### At the MAP

- 1 To access the PM level of the MAP, type

**>MAPCI;MTC;PM**

and press the Enter key.

*Example of a MAP display:*

|    |      |      |      |      |      |      |
|----|------|------|------|------|------|------|
|    | SysB | ManB | OffL | CBSy | ISTb | InSv |
| PM | 1    | 0    | 0    | 0    | 0    | 39   |

- 2 To display all the manual busy NIUs, type

**>DISP STATE MANB NIU**

and press the Enter key.

*Example of a MAP response:*

ManB NIU: 0

- 3 Choose an NIU to work on.

- 4 To post the selected NIU, type

**>POST NIU niu\_no**

and press the Enter key.

*where*

**niu\_no**

is the number of the NIU (0 to 29)

*Example of a MAP display:*

NIU 0: ManB  
Unit 0: Act ManB  
Unit 1: InAct ManB (NA)

**Note:** In the example, NIU 0 is the active unit and is manual busy. Unit 1 is the inactive unit and is manual busy not accessible. On your MAP display, the NIU that you selected can be manual busy not accessible.

| If the state of one unit | Do      |
|--------------------------|---------|
| is ManB                  | step 5  |
| is ManB (NA)             | step 15 |

- 5 Consult office records or operating company personnel to determine why the NIU unit is manual busy.

When you have permission, continue this procedure.

## PM NIU major (continued)

- 6 To test the manual busy NIU unit, type

**>TST UNIT unit\_no**

and press the Enter key.

where

**unit\_no**

is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

One or more problems are suspected with the following cards. Please check them in the order listed.

| Site | Flr | RPos | Ray_id  | Shf | Description | Slot | EqPEC       |
|------|-----|------|---------|-----|-------------|------|-------------|
| HOST | 00  | A00  | NIU:001 | 02  | IPF         | 22   | EX22BB FRNT |
| HOST | 00  | A00  | NIU:001 | 02  | CBC         | 21   | EX25BA FRNT |

**If the TST command**

**Do**

passed

step 62

failed, and the system generated a card list

step 7

fails, and the system did not generate a card list

step 9

- 7 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

- 8 Replace the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 9 To reset the NIU unit, type

**>PMRESET UNIT unit\_no**

and press the Enter key.

where

**unit\_no**

is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

WARNING: Issuing a reset will restart the software in the unit.

Please confirm ("YES", "Y", "NO", or "N"):

- 10 To confirm the command, type

**>YES**

## PM NIU major (continued)

and press the Enter key.

| If the PMRESET command | Do      |
|------------------------|---------|
| passed                 | step 14 |
| failed                 | step 11 |

- 11** To load the NIU unit, type  
**>LOADPM UNIT unit\_no**  
 and press the Enter key.  
 where

**unit\_no**  
 is the number of the NIU unit (0 or 1)

| If the LOADPM command                                                            | Do      |
|----------------------------------------------------------------------------------|---------|
| passed                                                                           | step 14 |
| fails, and you did not replace all cards on the list that you recorded in step 7 | step 12 |
| failed, and you replaced all cards on the list that you recorded in step 7       | step 63 |
| fails, and the system did not generate a card list in step 6                     | step 64 |

- 12** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 13** Go to step 9.

- 14** To test the manual busy NIU unit, type

**>TST UNIT unit\_no**

and press the Enter key.

where

**unit\_no**  
 is the number of the NIU unit (0 or 1)

| If the TST command                                                                | Do      |
|-----------------------------------------------------------------------------------|---------|
| passed                                                                            | step 62 |
| failed, and you did not replace all cards on the list that you recorded in step 7 | step 12 |

## PM NIU major (continued)

- |           | If the TST command                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Do      |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|           | failed, and you replaced all cards on the list that you recorded in step 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | step 63 |
| <b>15</b> | To determine the number of the link interface module (LIM) for the NIU, type <b>&gt;QUERYPM</b> and press the Enter key.<br><i>Example of a MAP response:</i><br><br>PM Type: NIU PM No: 2 Status: ManB<br>Unit 0 Status: {InAct, ManB(NA)}<br>Unit 1 Status: {Act , ManB}<br>Site Flr RPos Bay_id Shf Pos Description Slot_Range<br>HOST 1 A 4 1 NIU 2 18 - 21<br>Location: LIM 2 shelf 1<br>Unit 0 Software Load.Datafilled:NRS34CJ<br><span style="float: right;">Actual:NRS34CJ</span><br>UNIT 1 Software Load.Datafilled:NRS34CJ Actual:                                                                                                 |         |
| <b>16</b> | Record the number of the LIM for the NIU. An example of a MAP response appears in step 15.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
| <b>17</b> | To post the LIM for the NIU, type <b>&gt;POST LIM lim_no</b> and press the Enter key.<br><i>where</i><br><div style="margin-left: 40px;"><b>lim_no</b><br/>is the number of the LIM (0 to 16)</div>                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |
| <b>18</b> | To access the F-bus level of the MAP display, type <b>&gt;FBUS</b> and press the Enter key.<br><i>Example of a MAP display:</i><br><br>LIM 1 ISTb<br><div style="margin-left: 100px;">Links_00S      Taps_00S</div> Unit0: ISTb                      .                      19<br>Unit1: InSv                      .                      2<br><div style="margin-left: 100px;">Tap:0    4    8    12    16    20    24    28    32</div> FBus0: ManB                      BBBB BBBB BBBB BBBB ----      ----      ----      ---B BB--<br>FBus1: InSv                      ...M .I... .S...      ....      ----      ----      ----      .... |         |
- Note 1:** In the example, B under a tap number indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. The



## PM NIU major (continued)

letter M indicates a manual busy tap. The letter L indicates an in-service trouble tap. The letter S indicates a system busy tap. A dash (-) indicates an unequipped tap.

**Note 2:** Link peripheral processors (LPPs) with shelves for the two-slot link interface unit have 36 taps.

- 19** Determine the state of the LIM and the F-buses.

| If the state of the LIM and both F-buses | Do      |
|------------------------------------------|---------|
| is InSv or ISTb                          | step 25 |
| is not InSv and not ISTb                 | step 20 |

- 20** Record the state of the LIM and F-buses that have faults.

**Note:** A problem with the LIM produces a PM LIM alarm. A problem with the F-bus produces a PM LIMF alarm.

| If the state of                          | Do      |
|------------------------------------------|---------|
| the LIM is SysB or SysB (RU)             | step 21 |
| the LIM is ManB, ManB (RU), or ISTb (RU) | step 22 |
| both F-buses is S or M                   | step 23 |
| one of the F-buses is S or M             | step 24 |

- 21** Perform the procedure *Clearing a PM LIM critical alarm* in this document. Complete the procedure and return to this point.

Go to step 1.

- 22** Perform the procedure *Clearing a PM LIM major alarm* in this document. Complete the procedure and return to this point.

Go to step 1.

- 23** Perform the procedure *Clearing a PM LIMF critical alarm* in this document. Complete the procedure and return to this point.

Go to step 1.

- 24** Perform the procedure *Clearing a PM LIMF major alarm* in this document. Complete the procedure and return to this point.

Go to step 1.

- 25** To determine the F-bus taps that associate with the NIU, type

**>TRNSL n**

and press the Enter key.

where

**n**

is the number of either F-bus (0 or 1)

## PM NIU major (continued)

---

**Note:** The information in the response applies to both F-buses. The list is 24 to 36 lines long.

*Example of a MAP response:*

```
LIM 0 FBus 0 Tap 0 is unequipped.
LIM 0 FBus 0 Tap 1 is unequipped.
LIM 0 FBus 0 Tap 2 is on LIU 121.
LIM 0 FBus 0 Tap 3 is on LIU 122.
LIM 0 FBus 0 Tap 4 is unequipped.
LIM 0 FBus 0 Tap 5 is unequipped.
LIM 0 FBus 0 Tap 6 is on NIU 1 unit 0.
LIM 0 FBus 0 Tap 7 is on NIU 1 unit 1.
```

**26** Record the F-bus tap numbers for the NIU unit. Read through the MAP response until you find the correct NIU.

**27** Determine the states of the F-bus taps associated with the NIU unit.

**Note:** The tap numbers that you recorded in step 26 apply to both F-buses. An example of the MAP appears in step 18.

| If the state of                                 | Do      |
|-------------------------------------------------|---------|
| both F-bus taps is M                            | step 28 |
| both F-bus taps is S                            | step 37 |
| one F-bus tap is M and the other F-bus tap is S | step 28 |

**28** Choose a manual busy F-bus tap to work on.

**29** Consult office records or operating company personnel to determine why the F-bus tap is manual busy.

When you have permission, continue this procedure.

**30** To return the F-bus tap to service, type

**>RTS FBUS fbus\_no tap\_no**

and press the Enter key.

where

**fbus\_no**

is the number of the F-bus (0 or 1)

**tap\_no**

is the number of the F-bus tap (0 to 35)

| If the RTS command                                         | Do      |
|------------------------------------------------------------|---------|
| passed, with the response local maintenance not accessible | step 31 |

## PM NIU major (continued)

|           | If the RTS command                                                                                                                                                       | Do        |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|           | passed, without the response local maintenance not accessible                                                                                                            | step 59   |
|           | failed, and the system generated a card list                                                                                                                             | step 32   |
|           | failed, and the system did not generate a card list                                                                                                                      | step 59   |
| <b>31</b> | Wait one minute for the F-bus tap to be in service.                                                                                                                      |           |
|           | <b>If, after one minute, the F-bus tap</b>                                                                                                                               | <b>Do</b> |
|           | is in service                                                                                                                                                            | step 59   |
|           | is I, S, or does not stabilize                                                                                                                                           | step 37   |
| <b>32</b> | Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.                                                                             |           |
| <b>33</b> | To access the PM level of the MAP display, type<br><b>&gt;PM</b><br>and press the Enter key.                                                                             |           |
| <b>34</b> | To post the NIU for the F-bus tap, type<br><b>&gt;POST NIU niu_no</b><br>and press the Enter key.<br><i>where</i><br><b>niu_no</b><br>is the number of the NIU (0 to 29) |           |
| <b>35</b> | Replace the first card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.               |           |
| <b>36</b> | Go to step 43.                                                                                                                                                           |           |
| <b>37</b> | To access the PM level of the MAP display, type<br><b>&gt;PM</b><br>and press the Enter key.                                                                             |           |
| <b>38</b> | To post the NIU, type<br><b>&gt;POST NIU niu_no</b><br>and press the Enter key.<br><i>where</i><br><b>niu_no</b><br>is the number of the NIU (0 to 29)                   |           |

## PM NIU major (continued)

- 39** To test the manual busy not accessible NIU unit, type

**>TST UNIT unit\_no**

and press the Enter key.

where

**unit\_no**

is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

One or more problems are suspected with the following cards. Please check them in the order listed.

| Site | Flr | RPos | Ray_id  | Shf | Description | Slot | EqPEC       |
|------|-----|------|---------|-----|-------------|------|-------------|
| HOST | 00  | A00  | NIU:001 | 02  | IPF         | 22   | EX22BB FRNT |
| HOST | 00  | A00  | NIU:001 | 02  | CBC         | 21   | EX25BA FRNT |

**If the TST command**

**Do**

passed

step 62

fails, and the system generates a card list

step 40

fails, and the system does not generate a card list

step 43

- 40** Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.
- 41** Replace the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.
- 42** Go to step 48.
- 43** To reset the NIU unit, type

**>PMRESET UNIT unit\_no**

and press the Enter key.

where

**unit\_no**

is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

WARNING: Issuing a reset will restart the software in the unit.

Please confirm ("YES", "Y", "NO", or "N"):

- 44** To confirm the command, type

**>YES**

## PM NIU major (continued)

and press the Enter key.

| If the PMRESET command | Do      |
|------------------------|---------|
| passed                 | step 53 |
| failed                 | step 45 |

- 45** To load the NIU unit, type  
**>LOADPM UNIT unit\_no**  
 and press the Enter key.  
 where

**unit\_no**  
 is the number of the NIU unit (0 or 1)

| If the LOADPM command                                                             | Do      |
|-----------------------------------------------------------------------------------|---------|
| passed                                                                            | step 53 |
| fails, and you did not replace all cards on the list that you recorded in step 32 | step 46 |
| failed, and you replaced all cards on the list that you recorded in step 32       | step 57 |
| fails, and the system did not generate a card list in step 30                     | step 64 |

- 46** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 47** Go to step 43.

- 48** To reset the NIU unit, type  
**>PMRESET UNIT unit\_no**  
 and press the Enter key.  
 where

**unit\_no**  
 is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

WARNING: Issuing a reset will restart the software in the unit.

Please confirm ("YES", "Y", "NO", or "N"):

- 49** To confirm the command, type  
**>YES**

## PM NIU major (continued)

and press the Enter key.

| If the PMRESET command | Do      |
|------------------------|---------|
| passed                 | step 53 |
| failed                 | step 50 |

- 50** To load the NIU unit, type  
**>LOADPM UNIT unit\_no**  
 and press the Enter key.  
*where*

**unit\_no**  
 is the number of the NIU unit (0 or 1)

| If the LOADPM command                                                              | Do      |
|------------------------------------------------------------------------------------|---------|
| passed                                                                             | step 53 |
| failed, and you did not replace all cards on the list that you recorded in step 40 | step 51 |
| failed, and you replaced all cards on the list that you recorded in step 40        | step 57 |
| failed, and the system did not generate a card list in step 39                     | step 64 |

- 51** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 52** Go to step 48.

- 53** To post the LIM for the NIU, type

**>POST LIM lim\_no**

and press the Enter key.

*where*

**lim\_no**  
 is the number of the LIM (0 to 16)

- 54** To access the F-bus level of the MAP display, type

**>FBUS**

and press the Enter key.

| If the state of the F-bus tap in use | Do      |
|--------------------------------------|---------|
| is M                                 | step 56 |

## PM NIU major (continued)

|    | If the state of the F-bus tap in use                                                                                                                                                                                                                        | Do      |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|    | is I or S                                                                                                                                                                                                                                                   | step 55 |
| 55 | To manually force the F-bus tap to busy, type<br><b>&gt;BSY FBUS fbus_no tap_no FORCE</b><br>and press the Enter key.<br><i>where</i><br><b>fbus_no</b><br>is the number of the F-bus (0 or 1)<br><b>tap_no</b><br>is the number of the F-bus tap (0 to 35) |         |
| 56 | To return the F-bus tap to service, type<br><b>&gt;RTS FBUS fbus_no tap_no</b><br>and press the Enter key.<br><i>where</i><br><b>fbus_no</b><br>is the number of the F-bus (0 or 1)<br><b>tap_no</b><br>is the number of the F-bus tap (0 to 35)            |         |
|    | If the RTS command                                                                                                                                                                                                                                          | Do      |
|    | passed                                                                                                                                                                                                                                                      | step 59 |
|    | failed, and the same tap on the other F-bus is S and was not worked on                                                                                                                                                                                      | step 37 |
|    | failed, and the same tap on the other F-bus is M and was not worked on                                                                                                                                                                                      | step 29 |
|    | failed, and both F-bus taps were worked on                                                                                                                                                                                                                  | step 64 |
| 57 | To post the LIM for the NIU, type<br><b>&gt;POST LIM lim_no</b><br>and press the Enter key.<br><i>where</i><br><b>lim_no</b><br>is the number of the LIM (0 to 16)                                                                                          |         |
| 58 | To access the F-bus level of the MAP display, type<br><b>&gt;FBUS</b>                                                                                                                                                                                       |         |

## PM NIU major (continued)

- and press the Enter key.
- 59** Determine that you worked on both F-bus taps.

| <b>If the same tap on the other F-bus</b> | <b>Do</b> |
|-------------------------------------------|-----------|
| is S, and was not worked on               | step 37   |
| is M, and was not worked on               | step 29   |
| is S or M, and was worked on              | step 64   |
| is in service                             | step 60   |

- 60** To access the PM level of the MAP display, type  
**>PM**  
and press the Enter key.

- 61** To post the NIU, type  
**>POST NIU niu\_no**  
and press the Enter key.  
*where*  
**niu\_no**  
is the number of the NIU (0 to 2)

*Example of a MAP display:*

```
NIU 2: InSv
Unit 0: Act InSv
Unit 1: InAct InSv
```

- 62** To return the NIU unit to service, type  
**>RTS UNIT unit\_no**  
and press the Enter key.

*where*  
**unit\_no**  
is the number of the NIU unit (0 or 1)

| <b>If the RTS command</b>                                   | <b>Do</b> |
|-------------------------------------------------------------|-----------|
| passed                                                      | step 63   |
| failed, and the mate NIU unit is ManB and was not worked on | step 5    |
| failed, and the mate NIU unit was worked on                 | step 64   |



---

**PM NIU  
major (end)**

---

- 63** Determine if you used this procedure to work on the mate NIU.

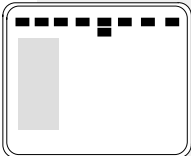
| <b>If the mate NIU unit</b>             | <b>Do</b> |
|-----------------------------------------|-----------|
| is ManB, and was not worked on          | step 5    |
| is ManB (NA), and was not worked on     | step 15   |
| is ManB or ManB (NA), and was worked on | step 64   |
| is InSv                                 | step 65   |

- 64** For additional help, contact the next level of support.

- 65** The procedure is complete.

**PM NIU**  
**minor**

**Alarm display**

|                                                                                   |    |    |     |     |                          |     |     |      |     |      |
|-----------------------------------------------------------------------------------|----|----|-----|-----|--------------------------|-----|-----|------|-----|------|
|  | CM | MS | IOD | Net | <b>PM</b><br><b>1NIU</b> | CCS | Lns | Trks | Ext | APPL |
|                                                                                   | .  | .  | .   | .   |                          | .   | .   | .    | .   | .    |

**Indication**

At the MTC level of the MAP display, NIU (preceded by a number) appears under the PM header of the alarm banner. The NIU indicates a minor alarm for the network interface unit (NIU).

**Meaning**

A minimum of one NIU is in-service trouble.

The number under the PM header of the MAP indicates the number of NIUs affected.

**Result**

The condition does not affect service when an NIU is in-service trouble.

**Common procedures**

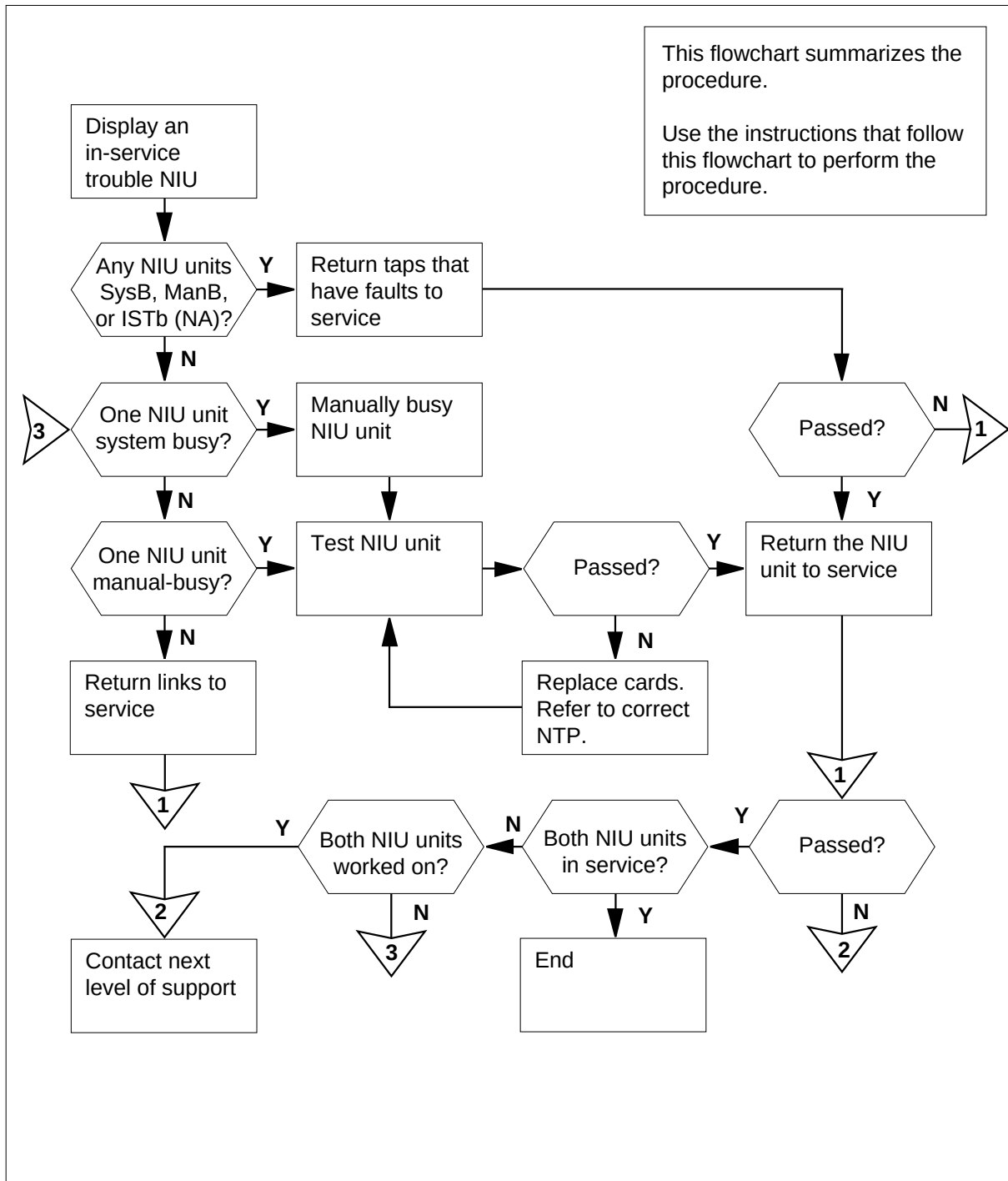
There are no common procedures.

**Action**

This section provides a summary flowchart of the procedure and a list of steps to clear an alarm. A detailed step-action procedure follows the flowchart.

## PM NIU minor (continued)

### Summary of clearing a PM NIU minor alarm



## PM NIU minor (continued)

### Clearing a PM NIU minor alarm

#### At the MAP terminal

- 1 To access the PM level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

*Example of a MAP display:*

|    |      |      |      |      |      |      |
|----|------|------|------|------|------|------|
|    | SysB | ManB | OffL | CBsy | ISTb | InSv |
| PM | 1    | 0    | 0    | 0    | 0    | 39   |

- 2 To display all in-service trouble NIUs, type

**>DISP STATE ISTB NIU**

and press the Enter key.

*Example of a MAP response:*

ISTb NIU: 0

- 3 Choose an NIU to work on.

- 4 To post the selected NIU, type

**>POST NIU niu\_no**

and press the Enter key.

*where*

**niu\_no**

is the number of the NIU (0 to 29)

*Example of a MAP display:*

NIU 0: ISTb  
Unit 0: Act ISTb  
Unit 1: InAct ISTb (NA)

**Note:** The letter S that appears on the right side of the SLM Stat header means that the associated SLM is system busy. A dot (.) means that the SLM is in-service.

| If the state of one unit is | Do      |
|-----------------------------|---------|
| Man B                       | step 5  |
| Sys B                       | step 14 |
| ISTb                        | step 15 |

## PM NIU minor (continued)

|   | If the state of one unit is                                                                                                                                                                                                                                                                                                                                                                                                                                                | Do       |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|   | ManB (NA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | step 61  |
|   | SysB (NA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | step 61  |
|   | ISTb (NA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | step 61  |
| 5 | Consult office records or operating company personnel. Determine why the NIU unit is manually-busy.<br>When you have permission, continue the procedure.                                                                                                                                                                                                                                                                                                                   |          |
| 6 | To test the manual-busy NIU unit, type<br><b>&gt;TST UNIT unit_no</b><br>and press the Enter key.<br><i>where</i><br><b>unit_no</b><br>is the number of the NIU unit (0 or 1)<br><i>Example of a MAP response:</i><br><br>One or more problems are suspected with the following cards. Please check them in the order listed.<br>Site Flr RPos Ray_id Shf Description Slot EqPEC<br>HOST 00 A00 NIU:001 02 IPF 22 EX22BB FRNT<br>HOST 00 A00 NIU:001 02 CBC 21 EX25BA FRNT |          |
|   | If the TST command                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Do       |
|   | passed                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | step 117 |
|   | failed, and the system generated a card list                                                                                                                                                                                                                                                                                                                                                                                                                               | step 7   |
|   | failed, and the system did not generate a card list                                                                                                                                                                                                                                                                                                                                                                                                                        | step 9   |
| 7 | Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.                                                                                                                                                                                                                                                                                                                                                    |          |
| 8 | Replace the first card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.                                                                                                                                                                                                                                                                                                                 |          |
| 9 | To reset the NIU unit, type<br><b>&gt;PMRESET UNIT unit_no</b><br>and press the Enter key.<br><i>where</i><br><b>unit_no</b><br>is the number of the NIU unit (0 or 1)<br><i>Example of a MAP response:</i>                                                                                                                                                                                                                                                                |          |

**PM NIU**  
**minor** (continued)

---

WARNING: Issuing a reset will restart the software in the unit. Please confirm ("YES", "Y", "NO", or "N"):

- 10** To confirm the command, type  
**>YES**  
and press the Enter key.

---

| If the PMRESET command | Do       |
|------------------------|----------|
| passed                 | step 117 |
| failed                 | step 11  |

---

- 11** To load the NIU unit, type  
**>LOADPM UNIT unit\_no**  
and press the Enter key.  
*where*  
**unit\_no**  
is the number of the NIU unit (0 or 1)

---

| If the LOADPM command                                                               | Do       |
|-------------------------------------------------------------------------------------|----------|
| passed                                                                              | step 117 |
| failed, and you have not replaced all cards on the list that you recorded in step 7 | step 12  |
| failed, and you replaced all cards on the list that you recorded in step 7          | step 118 |

---

- 12** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 13** Go to step 9.

- 14** To manually busy the system busy NIU unit, type

**>BSY UNIT unit\_no**

and press the Enter key.

*where*

**unit\_no**  
is the number of the NIU unit (0 or 1)

Go to step 6.

- 15** Choose an in-service trouble NIU unit to work on.

- 16** To determine the reason for the in-service trouble fault on the NIU, type

**>QUERYPM FLT**

---

## PM NIU minor (continued)

and press the Enter key.

*Example of a MAP response:*

```
Non-critical fault on unit 1 - Fault id: message channel
Data tag: 0001 0000
Site Flr RPos Bay_id Shf Description Slot EqPEC
HOST 00 A00 NIU:002 01 IPF 20 EX22BB FRNT
```

**Note:** In the example, the state of the in-service trouble fault appears after the Fault id header.

| If the Fault id                                                              | Do       |
|------------------------------------------------------------------------------|----------|
| is message channel, and a major PM LIMF alarm under the PM banner is present | step 17  |
| is command rejected, the unit is inaccessible                                | step 61  |
| is network link status                                                       | step 18  |
| is other than listed here                                                    | step 118 |

- 17** The PM LIMF major alarm indicates an F-bus problem. Perform the procedure *How to clear a PM LIMF major alarm* in this document.

- 18** To access the Devices level of the MAP display, type

**>DEVICES**

and press the Enter key.

*Example of a MAP display:*

```
NIU 2: ISTb
Unit 0: InAct ISTb
Unit 1: Act ISTb

Net Links
0 1 2 3 CBUS ports OOS
PB 0 9
PB 1 . . . M 9
```

- 19** To determine the network planes, shelves, and links for the NIU, type

**>TRNSL NETLK**

and press the Enter key.

*Example of a MAP response for a junctored network:*

## PM NIU minor (continued)

```
Link 0: NET 0 0 28;Cap S;Status:OK ;TIMING
Link 1: NET 1 0 28;Cap S;Status:OK ;TIMING
Link 2: NET 0 0 29;Cap S;Status:OK
Link 3: NET 1 0 29;Cap S;Status;MBsy
```

*Example of a MAP response for an enhanced network:*

```
Link 0: ENET 0 0 13 00; Cap S;Status:OK ;TIMING
Link 1: ENET 1 0 13 00; Cap S;Status:OK ;TIMING
Link 2: ENET 0 0 13 01; Cap S;Status:OK
Link 3: ENET 1 0 13 01; Cap S;Status:OK
Link 4: ENET 0 0 13 02; Cap S;Status:OK
Link 5: ENET 1 0 13 02; Cap S;Status:OK
Link 6: ENET 0 0 13 03; Cap S;Status:OK
Link 7: ENET 1 0 13 03; Cap S;Status:OK
```

**Note:** All network links on plane 0 terminate on unit 0 of the NIU. All network links on plane 1 terminate on unit 1 of the NIU. In the first example, link 0 of the NIU associates with the plane 0, network module 0, link 28 of a JNET. In the second example, link 0 of the NIU associates with the plane 0, shelf 0, card 13, link 00 of an ENET.

- 20** Determine if your office has a JNET or an ENET.

| If your office | Do      |
|----------------|---------|
| has a JNET     | step 21 |
| has an ENET    | step 30 |

- 21** Record the network plane, network module, and link numbers for the NIU.

**Note:** If you are working on unit 0 of the NIU, record the network module and link numbers for plane 0.

- 22** To access the Network links level of the MAP display, type

**>NET;LINKS pair\_no**

and press the Enter key.

where

**pair\_no**

is the number of the network module pair (0 to 31)

*Example of a MAP display:*



## PM NIU minor (continued)

```

Net 11111 11111 22222 22222 33
Plane 01234 56789 01234 56789 01234 56789 01
 0
 1
Net 0 Links
 11 1111 1111 2222 2222 2233
Plane 0123 4567 8901 2345 6789 0123 4567 8901
 0 .PP- P--P .PP- ---- -PP- .---- .PP-
 1 .PP- P--P .PP- ---- -PP- .---- .PP- ...M
Links 3333 3333 4444 4444 4455 5555 5555 6666
Plane 2345 6789 0123 4567 8901 2345 6789 0123
 0 ---- P--- ---- -P-- ---- ---- ----
 1 ---- P--- ---- -P-- ---- ---- ----

```

**Note:** On the MAP display, link states appear as follows: . indicates in service - indicates UNEQUIPPED M indicates manually-busy S indicates system busy P indicates P-side busy I indicates in-service trouble

- 23** To confirm that the network link displays a busy state for the NIU unit, type  
**>TRNSL link\_no**  
 and press the Enter key.  
*where*

**link\_no**  
 is the number of the link (0 to 63)

*Example of a MAP display:*

Net 3 Link 39 = NIU 1 Port 3

**Note:** If you recorded a minimum of two link numbers in step 21, translate each link separately.

- 24** Determine the state of each link for the NIU.

| If the state of                        | Do      |
|----------------------------------------|---------|
| all the links is M                     | step 28 |
| a minimum of one of the links is not M | step 25 |

- 25** Choose a link that is not manually-busy for the NIU unit.

- 26** To manually busy the link that is not manually-busy for the NIU unit, type  
**>BSY plane\_no link\_no**  
 and press the Enter key.  
*where*

## PM NIU minor (continued)

**plane\_no**  
is the number of the plane (0 or 1)

**link\_no**  
is the number of the link (0 to 63)

|    | If you                                                                                                                                                                                                                                                                                    | Do      |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|    | busied all links                                                                                                                                                                                                                                                                          | step 28 |
|    | did not busy all links                                                                                                                                                                                                                                                                    | step 27 |
| 27 | Repeat step 26 for each link that associates with the NIU unit that is not manual-busy.                                                                                                                                                                                                   |         |
| 28 | Choose a manual-busy link to work on.                                                                                                                                                                                                                                                     |         |
| 29 | To test the manual-busy link, type<br><b>&gt;TST plane_no link_no</b><br>and press the Enter key.<br><i>where</i><br><b>plane_no</b><br>is the number of the network plane (0 or 1)<br><b>link_no</b><br>is the number of the network link (0 to 63)                                      |         |
|    | <i>Example of a MAP response:</i><br><br>One or more problems are suspected with the following cards. Please check them in the order listed.<br>Site Flr RPos Ray_id Shf Description Slot EqPEC<br>HOST 00 A00 NIU:001 02 IPF 22 EX22BB FRNT<br>HOST 00 A00 NIU:001 02 CBC 21 EX25BA FRNT |         |
|    | If the TST command                                                                                                                                                                                                                                                                        | Do      |
|    | passed                                                                                                                                                                                                                                                                                    | step 50 |
|    | failed, and the system generated a card list                                                                                                                                                                                                                                              | step 44 |
|    | fails, and the system did not generate a card list                                                                                                                                                                                                                                        | step 50 |
| 30 | Record the ENET network plane, shelf, card, and link numbers for the NIU unit.                                                                                                                                                                                                            |         |
| 31 | To access the CARD level of the MAP display, type<br><b>&gt;SHELF shelf_no;CARD card_no</b><br>and press the Enter key.<br><i>where</i>                                                                                                                                                   |         |

## PM NIU minor (continued)

**shelf\_no**

is the number of the shelf that you recorded in step 30

**card\_no**

is the number of the card that you recorded in step 30

*Example of a MAP display:*

```
CARD 13 Front: Back: DS.30 Links 111111
 Xpt I/F 0123456789012345
Plane 0 . . PPPP-----
Plane 1 -----
```

- 32** Determine the state of each link for the NIU unit.

| If the state of                        | Do      |
|----------------------------------------|---------|
| all links is M                         | step 42 |
| a minimum of one of the links is not M | step 33 |

- 33** To determine if you deloaded the crosspoint card that relates to the link for the NIU unit, type

**>DELOAD plane\_no QUERY**

and press the Enter key.

*where*

**plane\_no**

is the number of the ENET plane (0 or 1) that you recorded in

step 30

*Example of a MAP response:*

```
deload 0 query
Request to QUERY DELOAD ENET Plane:0 Shelf:00 Slot:11 submitted.
Request to QUERY DELOAD ENET Plane:0 Shelf:00 Slot:11 passed.
ENET Plane:0 Shelf:00 Slot:11 is not deloaded.
```

| If you                             | Do      |
|------------------------------------|---------|
| deloaded the crosspoint card       | step 43 |
| did not deload the crosspoint card | step 34 |

- 34** To determine if you deloaded the crosspoint card of the corresponding plane, type

**>DELOAD plane\_no QUERY**

and press the Enter key.

*where*

## PM NIU minor (continued)

**plane\_no**

is the number of the corresponding plane (0 or 1)

*Example of a MAP response:*

```
deload 1 query
Request to QUERY DELOAD ENET Plane:1 Shelf:00 Slot:11 submitted.
Request to QUERY DELOAD ENET Plane:1 Shelf:00 Slot:11 passed.
ENET Plane:1 Shelf:00 Slot:11 is not deloaded.
```

| If the system                      | Do      |
|------------------------------------|---------|
| deloaded the crosspoint card       | step 35 |
| did not deload the crosspoint card | step 36 |

- 35** To clear the deload condition on the card of the corresponding plane, type  
**>DELOAD plane\_no CLEAR**  
 and press the Enter key.

*where*

**plane\_no**

is the number of the plane (0 or 1)

*Example of a MAP response:*

```
Request to CLEAR DELOAD ENET Plane:1 Shelf:2 Slot:30 Link:0 submitted.
Request to CLEAR DELOAD ENET Plane:1 Shelf:2 Slot:30 Link:0 passed.
```

- 36** To set the crosspoint card that relates to the link for the NIU unit to a deloaded state, type

**>DELOAD plane\_no SET**

and press the Enter key.

*where*

**plane\_no**

is the number of the plane (0 or 1) that you recorded in step 30.

- 37** To allow the network traffic on the node to clear, wait 30 min before you proceed.

- 38** Determine the state of each link for the NIU unit.

| If the state of                        | Do      |
|----------------------------------------|---------|
| all links is M                         | step 43 |
| a minimum of one of the links is not M | step 39 |

- 39** Choose a link that is not manual-busy to work on.

- 40** To manually busy a link, type

**>BSY plane\_no LINK link\_no**

## PM NIU minor (continued)

and press the Enter key.

where

**plane\_no**

is the number of the plane (0 or 1)

**link\_no**

is the number of the link (0 to 63)

- 41** Repeat step 39 for each of the links that associate with the NIU you are working on.

- 42** Choose a manual-busy link to work on.

- 43** To test the manual-busy link, type

**>TST plane\_no LINK link\_no**

and press the Enter key.

where

**plane\_no**

is the number of the network plane (0 or 1)

**link\_no**

is the number of the network link (0 to 63)

*Example of a MAP response:*

One or more problems are suspected with the following cards. Please check them in the order listed.

| Site | Flr | RPos | Ray_id  | Shf | Description | Slot | EqPEC       |
|------|-----|------|---------|-----|-------------|------|-------------|
| HOST | 00  | A00  | NIU:001 | 02  | IPF         | 22   | EX22BB FRNT |
| HOST | 00  | A00  | NIU:001 | 02  | CBC         | 21   | EX25BA FRNT |

### If the TST command

### Do

passed

step 54

failed, and the system generated a card list

step 44

failed, and the system did not generate a card list

step 54

- 44** Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

**Note:** The message and correct peripheral cards accompany the card list. The message refers to the NTEX28AA card of the NIU unit.

- 45** To manually busy the NIU unit, type

**>BSY UNIT unit\_no**

and press the Enter key.

where

## PM NIU minor (continued)

---

**unit\_no**

is the number of the NIU unit (0 or 1)

**Note:** If the unit that you manually busy is the active (Act) unit, an automatic switch of activity occurs. The MAP display prompts you to confirm the switch of activity.

*Example of a MAP response:*

An activity switch will be required. Do you wish to continue? Please confirm ("YES", "Y", "NO", or "N"):

- 46** To confirm the switch of activity, type

**>YES**

and press the Enter key.

- 47** Replace the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 48** Determine if your office has a JNET or an ENET.

---

| If your office | Do      |
|----------------|---------|
| has a JNET     | step 49 |
| has an ENET    | step 53 |

---

- 49** To test one of the links for the NIU, type

**>TST plane\_no link\_no**

and press the Enter key.

*where*

**plane\_no**

is the number of the network plane (0 or 1)

**link\_no**

is the number of the link (0 to 63)

---

| If the TST command | Do       |
|--------------------|----------|
| passed             | step 50  |
| failed             | step 118 |

---

- 50** To return the link to service, type

**>RTS plane\_no link\_no**

and press the Enter key.

*where*

**plane\_no**

is the number of the network plane (0 or 1)

## PM NIU minor (continued)

**link\_no**  
is the number of the network link (0 to 63)

| If the RTS command                                                                | Do       |
|-----------------------------------------------------------------------------------|----------|
| passed, and all links for the NIU unit are in service (.)                         | step 58  |
| passed, and all links for the NIU unit are not in service (.)                     | step 49  |
| fails, and you did not replace all cards on the list that you recorded in step 44 | step 51  |
| failed, and you replaced all cards on the list that you recorded in step 44       | step 118 |
| fails, and the system did not generate a list in step 29                          | step 118 |
| failed, and another link is M and has not been worked on                          | step 33  |
| failed, and all links have been worked on                                         | step 118 |

**51** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

**52** Go to step 50.

**53** To test one of the links for the NIU, type  
**>TST plane\_no LINK link\_no**  
 and press the Enter key.  
*where*

**plane\_no**  
is the number of the network plane (0 or 1)

**link\_no**  
is the number of the link (0 to 63)

| If the TST command | Do       |
|--------------------|----------|
| passed             | step 54  |
| failed             | step 118 |

**54** To return the link to service, type  
**>RTS plane\_no LINK link\_no**  
 and press the Enter key.

## PM NIU minor (continued)

---

where

**plane\_no**  
is the number of the network plane (0 or 1)

**link\_no**  
is the number of the network link (0 to 63)

*Example of a MAP response:*

Request to RTS ENET Plane:1 Shelf:2 Slot:30 Link:0 submitted.  
Request to RTS ENET Plane:1 Shelf:2 Slot:30 Link:0 passed.

|    | If the RTS command                                                                                                                                                   | Do       |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|    | passed, and all links for the NIU unit are in service                                                                                                                | step 57  |
|    | passed, and all links for the NIU unit are not in service                                                                                                            | step 53  |
|    | fails, and you did not replace all cards on the list that you recorded in step 44                                                                                    | step 55  |
|    | failed, and you replaced all cards on the list that you recorded in step 44                                                                                          | step 118 |
|    | fails, and system did not generate a list in step 43                                                                                                                 | step 118 |
|    | failed, and another link is M and has not been worked on                                                                                                             | step 42  |
|    | failed, and all links have been worked on                                                                                                                            | step 118 |
| 55 | Replace the next card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.            |          |
| 56 | Go to step 54.                                                                                                                                                       |          |
| 57 | To clear the deload condition on the crosspoint card that relates to the link for the NIU unit, type<br><b>&gt;DELOAD plane_no CLEAR</b><br>and press the Enter key. |          |

where

**plane\_no**  
is the number of the plane (0 or 1)

*Example of a MAP response:*



## PM NIU minor (continued)

Request to CLEAR DELOAD ENET Plane:1 Shelf:2 Slot:30 Link:0 submitted.  
Request to CLEAR DELOAD ENET Plane:1 Shelf:2 Slot:30 Link:0 passed.

- 58** To set the NIU unit again, type  
**>PMRESET UNIT unit\_no**  
and press the Enter key.

*where*

**unit\_no**  
is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

WARNING: Issuing a reset will restart the software in the unit.  
Please confirm ("YES", "Y", "NO", or "N"):

- 59** To confirm the command, type  
**>YES**  
and press the Enter key.

| If the PMRESET command | Do       |
|------------------------|----------|
| passed                 | step 117 |
| failed                 | step 60  |

- 60** To load the NIU unit, type  
**>LOADPM UNIT unit\_no**  
and press the Enter key.  
*where*

**unit\_no**  
is the number of the NIU unit (0 or 1)

| If the LOADPM command | Do       |
|-----------------------|----------|
| passed                | step 117 |
| failed                | step 118 |

- 61** To determine the number of the link interface module (LIM) for the NIU, type  
**>QUERYPM**  
and press the Enter key.  
*Example of a MAP response:*

## PM NIU minor (continued)

```

PM Type: NIU PM No: 2 Status: ISTb (NA)
Unit 0 Status: {InAct, ISTb(NA)}
Unit 1 Status: {Act , ISTb}
Site Flr RPos Bay_id Shf Pos Description Slot_Range
HOST 1 A 4 1 NIU 2 18 - 21
Location: LIM 2 shelf 1
Unit 0 Software Load.Datafilled:NRS35CJ
 Actual:NRS35CJ
UNIT 1 Software Load.Datafilled:NRS35CJ Actual:

```

- 62** Record the number of the associated LIM.
- 63** To post the LIM that associates with the NIU, type  
**>POST LIM lim\_no**  
 and press the Enter key.

*where*

**lim\_no**  
 is the number of the LIM (0 to 16)

- 64** To access the F-bus level of the MAP display, type  
**>FBUS**  
 and press the Enter key.

*Example of a MAP display:*

```

LIM 1 ISTb
Unit0: ISTb Links_00S Taps_00S
Unit1: InSv . 19
 . 2
Tap: 0 4 8 12 16 20 24 28 32
FBus0: ManB BBBB BBBB BBBB BBBB ---- ---- ---- ---B BB--
FBus1: InSv ...M .I.. .S.. ---- ---- ----

```

**Note 1:** In the example, B under a tap number indicates that the F-bus is manual-busy. The letter B can also indicate that the controlling LIM unit is system busy or manual-busy. A dot (.) indicates an in-service tap. The letter M indicates a manual-busy tap. The letter I indicates an in-service trouble tap. The letter S indicates a system busy tap. A dash (-) indicates an unequipped tap.

**Note 2:** Link peripheral processors with shelves for a two-slot link interface unit have 36 taps.

- 65** Determine the state of the LIM and the F-buses.

| If the LIM and both F-buses | Do      |
|-----------------------------|---------|
| are InSv or ISTb            | step 71 |
| are not InSv or ISTb        | step 66 |

## PM NIU minor (continued)

- 66** Record the state of the LIM and F-buses that have faults.  
**Note:** A problem with the LIM produces a PM LIM alarm. A problem with the F-bus produces a PM LIMF alarm.

| If the state of                                                                                        | Do      |
|--------------------------------------------------------------------------------------------------------|---------|
| the LIM is system busy or system busy resource not available                                           | step 67 |
| the LIM is manual-busy, manual-busy resource not available, or in-service trouble resource unavailable | step 68 |
| both F-buses are system busy or manual-busy                                                            | step 69 |
| one of the F-buses is system busy or manual-busy                                                       | step 70 |

- 67** Perform the procedure *Clearing a PM LIM critical alarm* in this document. Complete the procedure and return to this point.

Go to step 1.

- 68** Perform the procedure *Clearing a PM LIM major alarm* in this document. Complete the procedure and return to this point

Go to step 1.

- 69** Perform the procedure *Clearing a PM LIMF critical alarm* in this document. Complete the procedure and return to this point.

Go to step 1.

- 70** Perform the procedure *Clearing a PM LIMF major alarm* in this document. Complete the procedure and return to this point.

Go to step 1.

- 71** To determine the F-bus taps that associate with the NIU, type

**>TRNSL n**

and press the Enter key.

where

**n**

is the number of either F-bus (0 or 1)

**Note:** The information in both F-buses is identical. The list that appears is 24 to 36 lines long.

*Example of a MAP response:*

**PM NIU**  
**minor** (continued)

---

LIM 0 FBus 0 Tap 0 is unequipped.  
LIM 0 FBus 0 Tap 1 is unequipped.  
LIM 0 FBus 0 Tap 2 is on XLIU 121.  
LIM 0 FBus 0 Tap 3 is on XLIU 122.  
LIM 0 FBus 0 Tap 4 is unequipped.  
LIM 0 FBus 0 Tap 5 is unequipped.  
LIM 0 FBus 0 Tap 6 is on NIU 1 unit 0.  
LIM 0 FBus 0 Tap 7 is on NIU 1 unit 1.

**72** Record the F-bus tap numbers for the NIU unit. Read through the MAP response until you find the correct NIU.

**73** Determine the states of the F-bus taps for the NIU unit.

**Note:** The tap number that you recorded in step 72 applies to both F-buses.

---

| If the state of                                 | Do      |
|-------------------------------------------------|---------|
| both F-bus taps is M                            | step 74 |
| both F-bus taps is S                            | step 85 |
| one F-bus tap is M and the other F-bus tap is S | step 74 |

---

**74** Choose a manual-busy F-bus tap to work on.

**75** Consult office records or operating company personnel. Determine the reason that the F-bus tap is manual-busy.

When you have permission, continue the procedure.

**76** To return the F-bus tap to service, type

**>RTS FBUS fbus\_no tap\_no**

and press the Enter key.

where

**fbus\_no**

is the number of the F-bus (0 or 1)

**tap\_no**

is the number of the F-bus tap (0 to 35)

---

| If the RTS command                                            | Do       |
|---------------------------------------------------------------|----------|
| passed, with the response local maintenance not accessible    | step 77  |
| passed, without the response local maintenance not accessible | step 112 |
| failed, and the system generated a card list                  | step 78  |

---

## PM NIU minor (continued)

|    | If the RTS command                                                                                                                                     | Do       |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|    | failed, and the system did not generate a card list                                                                                                    | step 112 |
| 77 | Wait 1 min for the F-bus tap to be in service.                                                                                                         |          |
|    | If the state of the F-bus tap                                                                                                                          | Do       |
|    | is in service                                                                                                                                          | step 112 |
|    | is I, S, or does not stabilize                                                                                                                         | step 85  |
| 78 | Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.                                |          |
| 79 | To access the PM level of the MAP display, type<br><b>&gt;PM</b><br>and press the Enter key.                                                           |          |
| 80 | To post the NIU, type<br><b>&gt;POST NIU niu_no</b><br>and press the Enter key.<br><i>where</i><br><b>niu_no</b><br>is the number of the NIU (0 to 29) |          |
|    | If the state of the NIU unit                                                                                                                           | Do       |
|    | is ManB                                                                                                                                                | step 83  |
|    | is Tb or SysB                                                                                                                                          | step 81  |
| 81 |                                                                                                                                                        |          |

**CAUTION****Possible action that affects service**

Contact the next level of support to make sure that you can busy the NIU unit before you continue. Do not take the in-service trouble NIU unit out of service if the mate NIU unit is out of service. If you take the complete NIU peripheral module out of service, you isolate application specific units (ASU) and interrupt service.

To manually force the NIU unit that associates with the F-bus to busy, type  
**>BSY UNIT unit\_no FORCE**  
and press the Enter key.

## PM NIU

### minor (continued)

---

where

**unit\_no**

is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

An activity switch will be required. Do you wish to continue? Please confirm ("YES", "Y", "NO", or "N")

**82** To confirm the command, type

**>YES**

and press the Enter key.

**83** Replace the first card on the list that you recorded in step 78. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

**84** Determine the card that you changed in step 83.

---

| If the card that you changed | Do      |
|------------------------------|---------|
| is an NTEX22                 | step 97 |
| is other than listed here    | step 95 |

---

**85** To access the PM level of the MAP display, type

**>PM**

and press the Enter key.

**86** To post the NIU, type

**>POST NIU niu\_no**

and press the Enter key.

where

**niu\_no**

is the number of the NIU (0 to 29)

---

| If the state of the NIU unit | Do      |
|------------------------------|---------|
| is ManB                      | step 89 |
| is ISTb or SysB              | step 87 |

---

## PM NIU minor (continued)

87

**CAUTION****Possible action that affects service**

Contact the next level of support to make sure that you can busy the NIU unit before you continue. Do not take the in-service trouble NIU unit out of service if the mate NIU unit is out of service. If you take the complete NIU peripheral module out of service, you isolate ASUs and interrupt service.

To manually force the NIU unit that associates with the F-bus to busy, type

**>BSY UNIT unit\_no FORCE**

and press the Enter key.

where

**unit\_no**

is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

An activity switch will be required. Do you wish to continue? Please confirm ("YES", "Y", "NO", or "N"):

**88** To confirm the command, type

**>YES**

and press the Enter key.

**89** To test the manual-busy NIU unit, type

**>TST UNIT unit\_no**

and press the Enter key.

where

**unit\_no**

is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

One or more problems are suspected with the following cards. Please check them in the order listed.

| Site | Flr | RPos | Ray_id  | Shf | Description | Slot | EqPEC       |
|------|-----|------|---------|-----|-------------|------|-------------|
| HOST | 00  | A00  | NIU:001 | 02  | IPF         | 22   | EX22BB FRNT |
| HOST | 00  | A00  | NIU:001 | 02  | CBC         | 21   | EX25BA FRNT |

**If the TST command**

**Do**

passed

step 117

## PM NIU minor (continued)

|           | If the TST command                                                                                                                                                                                                                                                                                                                                   | Do       |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|           | failed, and the system generated a card list                                                                                                                                                                                                                                                                                                         | step 92  |
|           | failed, and the system did not generate a card list                                                                                                                                                                                                                                                                                                  | step 90  |
| <b>90</b> | <p>To set the NIU unit again, type<br/> <b>&gt;PMRESET UNIT unit_no</b><br/> and press the Enter key.<br/> <i>where</i><br/> <b>unit_no</b><br/> is the number of the NIU unit (0 or 1)<br/> <i>Example of a MAP response:</i></p> <p>WARNING: Issuing a reset will restart the software in the unit. Please confirm ("YES", "Y", "NO", or "N"):</p> |          |
| <b>91</b> | <p>To confirm the command, type<br/> <b>&gt;YES</b><br/> and press the Enter key.</p>                                                                                                                                                                                                                                                                |          |
|           | If the PMRESET command                                                                                                                                                                                                                                                                                                                               | Do       |
|           | passed                                                                                                                                                                                                                                                                                                                                               | step 117 |
|           | failed                                                                                                                                                                                                                                                                                                                                               | step 118 |
| <b>92</b> | Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.                                                                                                                                                                                                                              |          |
| <b>93</b> | Replace the first card on the list that you recorded in step 92. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.                                                                                                                                                              |          |
| <b>94</b> | Determine the card that you changed in step 93.                                                                                                                                                                                                                                                                                                      |          |
|           | If the card that you changed                                                                                                                                                                                                                                                                                                                         | Do       |
|           | is an NTEX22                                                                                                                                                                                                                                                                                                                                         | step 102 |
|           | is other than listed here                                                                                                                                                                                                                                                                                                                            | step 100 |
| <b>95</b> | <p>To set the NIU unit again, type<br/> <b>&gt;PMRESET UNIT unit_no</b><br/> and press the Enter key.<br/> <i>where</i></p>                                                                                                                                                                                                                          |          |



## PM NIU minor (continued)

**unit\_no**  
is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

WARNING: Issuing a reset will restart the software in the unit. Please confirm ("YES", "Y", "NO", or "N"):

- 96** To confirm the command, type  
**>YES**  
and press the Enter key.

| If the PMRESET command | Do       |
|------------------------|----------|
| passed                 | step 102 |
| failed                 | step 97  |

- 97** To load the NIU unit, type  
**>LOADPM UNIT unit\_no**  
and press the Enter key.  
*where*

**unit\_no**  
is the number of the NIU unit (0 or 1)

| If the LOADPM command                                                               | Do       |
|-------------------------------------------------------------------------------------|----------|
| passed                                                                              | step 105 |
| failed, and you have not replaced allcards on the list that you recorded in step 78 | step 98  |
| failed, and you replaced all cards on the list that you recorded in step 78         | step 110 |

- 98** Replace the next card on the list that you recorded in step 78. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 99** Go to step 95.

- 100** To set the NIU unit again, type  
**>PMRESET UNIT unit\_no**  
and press the Enter key.  
*where*

**unit\_no**  
is the number of the NIU unit (0 or 1)

*Example of a MAP response:*

**PM NIU**  
**minor** (continued)

---

WARNING: Issuing a reset will restart the software in the unit. Please confirm ("YES", "Y", "NO", or "N"):

- 101** To confirm the command, type

**>YES**

and press the Enter key.

---

| If the <b>PMRESET</b> command | Do       |
|-------------------------------|----------|
| passed                        | step 105 |
| failed                        | step 102 |

---

- 102** To load the NIU unit, type  
**>LOADPM UNIT unit\_no**  
and press the Enter key.

where

**unit\_no**

is the number of the NIU unit (0 or 1)

---

| If the <b>LOADPM</b> command                                                         | Do       |
|--------------------------------------------------------------------------------------|----------|
| passed                                                                               | step 105 |
| failed, and you have not replaced all cards on the list that you recorded in step 92 | step 103 |
| failed, and you replaced all cards on the list that you recorded in step 92          | step 110 |

---

- 103** Replace the next card on the list that you recorded in step 92. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 104** Go to step 100.

- 105** To post the LIM for the NIU, type

**>POST LIM lim\_no**

and press the Enter key.

where

**lim\_no**

is the number of the LIM (0 to 16)

- 106** To access the F-bus level of the MAP, type

**>FBUS**

## PM NIU minor (continued)

and press the Enter key.

| If the state of F-bus tap | Do       |
|---------------------------|----------|
| is M                      | step 109 |
| is I                      | step 107 |
| is S                      | step 108 |
| is in service             | step 113 |

- 107** To manually busy the F-bus tap, type  
**>BSY FBUS fbus\_no tap\_no FORCE**  
 and press the Enter key.

*where*

**fbus\_no**  
 is the number of the F-bus (0 or 1)

**tap\_no**  
 is the number of the F-bus tap (0 to 35)

Go to step 109.

- 108** To force the F-bus tap to busy, type  
**>BSY FBUS fbus\_no tap\_no FORCE**  
 and press the Enter key.

*where*

**fbus\_no**  
 is the number of the F-bus (0 or 1)

**tap\_no**  
 is the number of the F-bus tap (0 to 35)

- 109** To return the F-bus tap to service, type  
**>RTS FBUS fbus\_no tap\_no**  
 and press the Enter key.

*where*

**fbus\_no**  
 is the number of the F-bus (0 or 1)

**tap\_no**  
 is the number of the F-bus tap (0 to 35)

| If the RTS command                                                            | Do       |
|-------------------------------------------------------------------------------|----------|
| passed                                                                        | step 112 |
| failed, and the same tap on the other F-bus is S and you have not worked on S | step 85  |

## PM NIU minor (continued)

|            | If the RTS command                                                                                                                                                                         | Do       |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|            | failed, and the same tap on the other F-bus is M and you have not worked on M                                                                                                              | step 75  |
|            | failed, and you worked on both F-bus taps                                                                                                                                                  | step 118 |
| <b>110</b> | To post the LIM for the NIU, type<br><b>&gt;POST LIM lim_no</b><br>and press the Enter key.<br><i>where</i><br><b>lim_no</b><br>is the number of the LIM (0 to 16)                         |          |
| <b>111</b> | To access the F-bus level of the MAP display, type<br><b>&gt;FBUS</b><br>and press the Enter key.                                                                                          |          |
| <b>112</b> | Determine if you worked on both F-bus taps.                                                                                                                                                |          |
|            | If the same tap on the other F-bus                                                                                                                                                         | Do       |
|            | is S, and you have not worked on S                                                                                                                                                         | step 85  |
|            | is M, and you have not worked on M                                                                                                                                                         | step 75  |
|            | is S or M, and you worked on S or M                                                                                                                                                        | step 118 |
|            | is in service                                                                                                                                                                              | step 113 |
| <b>113</b> | To access the PM level of the MAP display, type<br><b>&gt;PM</b><br>and press the Enter key.                                                                                               |          |
| <b>114</b> | To post the NIU, type<br><b>&gt;POST NIU niu_no</b><br>and press the Enter key.<br><i>where</i><br><b>niu_no</b><br>is the number of the NIU (0 to 29)<br><i>Example of a MAP display:</i> |          |

## PM NIU minor (continued)

NIU 2: InSv  
Unit 0: Act InSv  
Unit 1: InAct InSv

| If the state of the NIU unit | Do       |
|------------------------------|----------|
| is ManB                      | step 117 |
| is ISTb or SysB              | step 115 |

**115**



### CAUTION

#### Possible action that affects service

Contact the next level of support to make sure that you can busy the NIU unit before you continue. Do not take the in-service trouble NIU unit out of service if the mate NIU unit is out of service. When you take the complete NIU peripheral module out of service, you isolate ASUs and interrupt service.

To manually busy the NIU for the F-bus, type

**>BSY UNIT unit\_no**

and press the Enter key.

where

**unit\_no**

is the number of the NIU unit (0 or 1)

Example of a MAP response:

An activity switch will be required. Do you wish to continue? Please confirm ("YES", "Y", "NO", or "N"):

**116** To confirm the command, type

**>YES**

and press the Enter key.

**117** To return the NIU unit to service, type

**>RTS UNIT unit\_no**

and press the Enter key.

where

## PM NIU minor (end)

---

**unit\_no**  
is the number of the NIU unit (0 or 1)

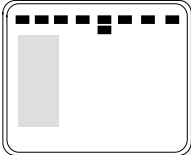
|            | <b>If the RTS command</b>                                                          | <b>Do</b> |
|------------|------------------------------------------------------------------------------------|-----------|
|            | passed and the NIU unit is InSv                                                    | step 119  |
|            | passed, but the NIU unit remains ISTb                                              | step 118  |
|            | failed, and the mate NIU unit is ISTb and you have not worked on the mate NIU unit | step 16   |
| <b>118</b> | For additional help, contact the next level of support.                            |           |
| <b>119</b> | The procedure is complete.                                                         |           |

---

**PM PMLOAD**  
**minor**

---

**Alarm display**

|                                                                                   |    |    |     |     |               |     |     |      |     |      |
|-----------------------------------------------------------------------------------|----|----|-----|-----|---------------|-----|-----|------|-----|------|
|  | CM | MS | IOD | Net | <b>PM</b>     | CCS | Lns | Trks | Ext | APPL |
|                                                                                   | .  | .  | .   | .   | <b>PMLOAD</b> | .   | .   | .    | .   | .    |

**Indication**

At the MTC level of the MAP display, PMLOAD under the PM header indicates a wrong entries in table PMLOADS.

**Meaning**

The system generates a minor alarm when a mismatch occurs between the entered peripheral module loads in table PMLOADS and the software loads. The current software loads are on disk. In table PMLOADS, the system cannot find the named loadfile on the assigned disk. Another possibility is that the device name assigned to the loadfile name in table PMLOADS does not have the load.

**Result**

There are no results.

**Common procedures**

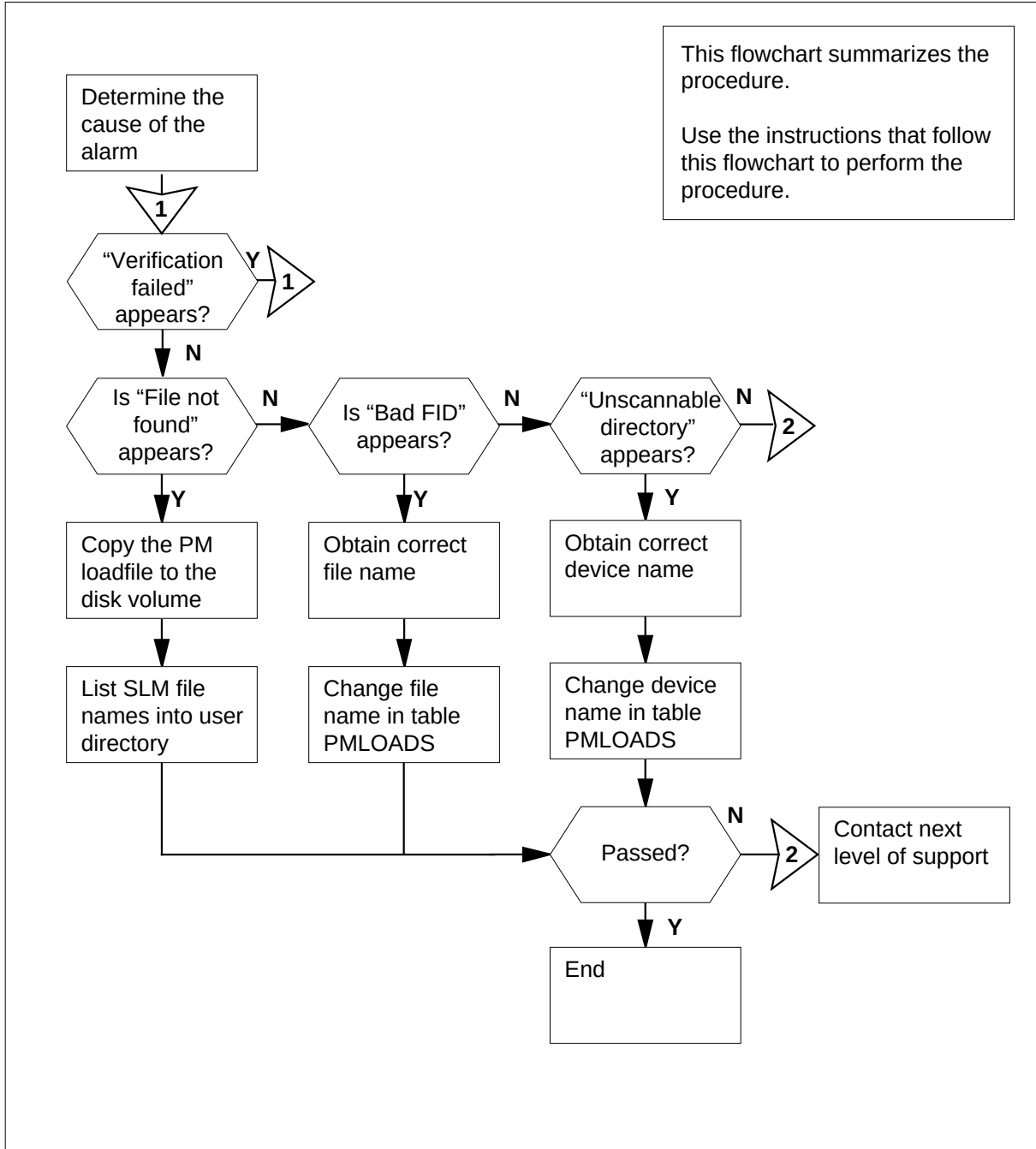
There are no common procedures.

**Action**

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

## PM PMLOAD minor (continued)

### Summary of clearing a PM PMLOAD minor alarm





## PM PMLOAD minor (continued)

### Clearing a PM PMLOAD minor alarm

#### At the MAP display

- 1 To access the PM level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

*Example of a MAP response:*

|    |      |      |      |      |      |      |
|----|------|------|------|------|------|------|
|    | SysB | ManB | OffL | CBsy | ISTb | InSv |
| PM | 5    | 0    | 0    | 1    | 3    | 5    |

- 2 To determine the cause of the alarm, type

**>PMLOADER QUERY ALARM**

and press the Enter key.

*Example of a MAP response:*

A MINOR alarm is being raised by table PMLOADS

| LOAD<br>Filename | Reason                    |
|------------------|---------------------------|
| ACC36CJ          |                           |
| ACC36CJ          | Unscannable directory     |
| ARC36CJ          |                           |
| ARC36CJ          | Bad FID or File not found |
| CFI34CR          |                           |
| CFI34CR          | Unscannable directory     |
| CJL35MS          |                           |
| CJL35MS          | Verification failed       |

- 3 Record the loadfile name and reason for each PMLOAD alarm.
- 4 Determine from office records the correct loadfile name and directory.
- 5 Choose a loadfile name on which to work.
- 6 Determine the PMLOAD alarm reason.

| If the alarm reason    | Do     |
|------------------------|--------|
| is Verification failed | step 7 |

**PM PMLOAD**  
**minor** (continued)

---

|                           | If the alarm reason                                                                                                                                                                                                                                                                               | Do      |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                           | is File not found                                                                                                                                                                                                                                                                                 | step 9  |
|                           | is Bad FID                                                                                                                                                                                                                                                                                        | step 18 |
|                           | is Unscannable directory                                                                                                                                                                                                                                                                          | step 38 |
| 7                         | A file attempted to load when you ran the PMLOADER audit. Wait 5 min before you proceed.                                                                                                                                                                                                          |         |
| 8                         | Go to step 2.                                                                                                                                                                                                                                                                                     |         |
| 9                         | Locate the tape that contains the PM load files.                                                                                                                                                                                                                                                  |         |
| <b>At the IOE frame</b>   |                                                                                                                                                                                                                                                                                                   |         |
| 10                        | Mount the tape on a magnetic tape drive.                                                                                                                                                                                                                                                          |         |
| <b>At the MAP display</b> |                                                                                                                                                                                                                                                                                                   |         |
| 11                        | To download the tape, type<br><b>&gt;MOUNT tape_no</b><br>and press the Enter key.<br><i>where</i><br><b>tape_no</b><br>is the number of the tape drive that contains the PM load files                                                                                                           |         |
| 12                        | To list the contents of the tape in your user directory, type<br><b>&gt;LIST T tape_no</b><br>and press the Enter key.<br><i>where</i><br><b>tape_no</b><br>is the number of the tape drive that contains the PM load files                                                                       |         |
| 13                        | To copy the PM loadfile to the disk volume, type<br><b>&gt;COPY &lt;pm_loadfile_name&gt; &lt;SLM_disk_volume_name&gt;</b><br>and press the Enter key.<br><i>where</i><br><b>pm_loadfile_name</b><br>is the name of the load file<br><b>SLM_disk_volume_name</b><br>is the name of the disk volume |         |
| 14                        | To access the disk utility level of the MAP display, type<br><b>&gt;DISKUT</b><br>and press the Enter key.                                                                                                                                                                                        |         |

## PM PMLOAD minor (continued)

- 15** To list the SLM disk volume names, type  
**>LV CM**  
 and press the Enter key.
- 16** To list the SLM file names into your user directory, type  
**>LF volume\_name**  
 and press the Enter key.  
*where*  
**volume\_name**  
 is the name of the volume that contains the PM load files
- 17** To exit the disk utility, type  
**>QUIT**  
 and press the Enter key.
- | If the PM header        | Do      |
|-------------------------|---------|
| displays PMLOAD         | step 49 |
| does not display PMLOAD | step 51 |
- 18** To access table PMLOADS, type  
**>TABLE PMLOADS**  
 and press the Enter key.
- 19** To position on the loadfile, type  
**>POS file\_name**  
 and press the Enter key.  
*where*  
**file\_name**  
 is the loadfile name from step 5  
*Example input:*  
**>POS ARC36CJ**  
*Example of a MAP response:*
- ```

ARC36CJ
ARC36CJ          S00DVOL1
ARC36CJ          S00DVOL1          Y
  
```
- 20** Record the device name that contains the loadfile.
- 21** To exit table PMLOADS, type
>QUIT
 and press the Enter key.

PM PMLOAD minor (continued)

- 22 To access the disk utility, type
>DISKUT
and press the Enter key.
Note: The command DISKUT applies to a SuperNode front end. For an NT40 front end, the command is DSKUT.
- 23 To name the loadfile again, type
>RNF file_name new_file_name
and press the Enter key.
where
file_name
is the loadfile name from step 5
new_file_name
is the new loadfile name
Note: The loadfile name must begin with a letter.
Example input:
>RNF ARC36CJ ARC37CJ
- 24 To exit the disk utility, type
>QUIT
and press the Enter key.
- 25 To access table PMLOADS, type
>TABLE PMLOADS
and press the Enter key.
- 26 To add the new loadfile name to table PMLOADS, type
>ADD new_file_name
and press the Enter key.
where
new_file_name
is the loadfile name from step 23
Example input:
>ADD ARC37CJ
Example of a MAP prompt:
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
- 27 To confirm the command, type
>Y
and press the Enter key.
Example of a MAP prompt:
ACTFILE:

**PM PMLOAD
minor** (continued)

- 28** To enter the name of the loadfile, type
>actfile
and press the Enter key.
where
actfile
is the new name of the loadfile from step 23
Example input:
>ARC37CJ
Example of a MAP prompt:
ACTVOL:
- 29** To enter the name of the storage device that contains the loadfile, type
>actvol
and press the Enter key.
where
actvol
is the name of the storage device from step 20
Example input:
>S00DVOL1
Example of a MAP prompt:
BKPFIL:
- 30** To enter the name of the backup loadfile, type
>bkpfile
and press the Enter key.
where
bkpfile
is the name of the backup loadfile and must be identical to the name entered in step 26
Example input:
>ARC37CJ
Example of a MAP prompt:
BKPVOL:
- 31** To enter the name of the storage device that contains the backup loadfile, type
>bkpvol
and press the Enter key.
where
bkpvol
is the name of the storage device from step 20

PM PMLOAD

minor (continued)

Example input:

>S00DVOL1

Example of a MAP prompt:

UPDACT:

- 32** To enter the update confirmation for the automatic loadfile name update confirmation, type

>updact

and press the Enter key.

where

updact

is if the system must update the loadfile name automatically (Y or N)

Example input:

>Y

Example of a MAP response:

TUPLE TO BE ADDED:

ARC37CJ

ARC37CJ

S00DVOL1

ARC37CJ

S00DVOL1

Y

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.

- 33** To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

TUPLE ADDED

- 34** To position on the original loadfile name, type

>POS file_name

and press the Enter key.

where

file_name

is the original loadfile name from step 5

- 35** To delete the old loadfile name, type

>DEL

and press the Enter key.

Example of a MAP prompt:

ENTER Y TO CONFIRM, N TO REJECT, OR E TO EDIT

- 36** To confirm the command, type

>Y

PM PMLOAD minor (continued)

- and press the Enter key.
- 37 To exit table PMLOADS, type
>QUIT
and press the Enter key.

If the PM header	Do
displays PMLOAD	step 49
does not display PMLOAD	step 51

- 38 To access the disk utility, type
>DISKUT
and press the Enter key.

Note: The command DISKUT applies to a SuperNode front end. For an NT40 front end, the command is DSKUT.

- 39 To confirm that the device contains the loadfile, type
>LISTFL dev_name
and press the Enter key.

where

dev_name
is the name of the device from step 5

Example input:

>LISTFL S00DVOL1

Note: The command LISTFL file_name applies to a SuperNode front end. For an NT40 front end, the command is LISTVOL vol_name.

Example of a MAP response:

File information for volume S00DVOL1:

{NOTE: 1 BLOCK = 512 BYTES }

LAST FILE O R I O	FILE	NUM OF	MAX	FILE NAME
MODIFY CODE R E T P	SIZE	RECORDS	REC	
DATE G C O E	IN	IN	LEN	
C N	BLOCKS	FILE		
920101	0 I F	9754	4877	1020 ORIG001MS
920101	0 I F	189350	94675	1020 ORIG001CM
931012	0 I F Y	9754	4877	1020 TEMP002MS
931012	0 I F Y	168810	84405	1020 TEMP002CM
930910	0 O F	4156	2078	1024 ARC36CJ
930910	0 O F	5288	2644	1024 CFI34CR
930910	0 O F	5304	2935	1024 ACC36CJ

PM PMLOAD
minor (continued)

- 40** To exit the disk utility, type
>QUIT
and press the Enter key.
- 41** Determine if the device specified for the loadfile matches the office records.
- | If the device name | Do |
|-----------------------------------|---------|
| does not match the office records | step 42 |
| matches the office records | step 50 |
- 42** To access table PMLOADS, type
>TABLE PMLOADS
and press the Enter key.
- 43** To position on the loadfile name, type
>POS file_name
and press the Enter key.
where
file_name
is the loadfile name from step 5
Example of a MAP response:
- | | | |
|---------|----------|---|
| CFI34CR | | |
| CFI34CR | S00DVOL2 | |
| CFI34CR | S00DVOL2 | Y |
- 44** To change the device indicated for the loadfile, type
>CHA ACTVOL
and press the Enter key.
Example of a MAP prompt:
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
- 45** To confirm the command, type
>Y
and press the Enter key.
Example of a MAP prompt:
ACTVOL: S00DVOL2
- 46** To enter the name of the device that contains the load, type
>vol_name
and press the Enter key.
where

PM PMLOAD
minor (end)

vol_name

is the name of the storage device

*Example input:***>S00DVOL1***Example of a MAP response:*

TUPLE TO BE CHANGED:

CFI34CR

CFI34CR

S00DVOL1

CFI34CR

S00DVOL2

Y

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT

47 To confirm the command, type**>Y**

and press the Enter key.

48 To exit table PMLOADS, type**>QUIT**

and press the Enter key.

If the PM header	Do
shows PMLOAD	step 49
does not show PMLOAD	step 51

49 To initiate a system audit to locate all loadnames and the associated devices of the loadnames, type**>PMLOADER AUDIT ALL**

and press the Enter key.

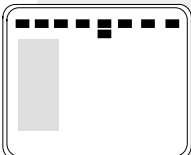
If the PM header	Do
show PMLOAD	step 50
does not show PMLOAD	step 51

50 For additional help, contact the next level of support.**51** The procedure is complete.

PM STC

major or minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	.	1STC	.	.	.	.	.
					M					

Indication

At the MTC level of the MAP display, STC (preceded by a number) appears under the PM header of the alarm banner. The STC indicates a major or minor alarm for the signaling terminal controller (STC).

Meaning

For a major alarm, an M appears under the alarm indicator. The system generates a major alarm when an STC is system busy or C-side busy.

For a minor alarm, information does not appear under the alarm indicator. The system generates a minor alarm when an STC is manually busy or in service trouble.

The number that precedes STC under the PM header in the alarm banner indicates the number of affected STCs.

Result

Common channel signaling (CCS) stops when an STC is system busy, C-side busy, or manually busy. An STC that is in service trouble continues to provide CCS service.

Common procedures

This procedure refers to *Loading a PM*.

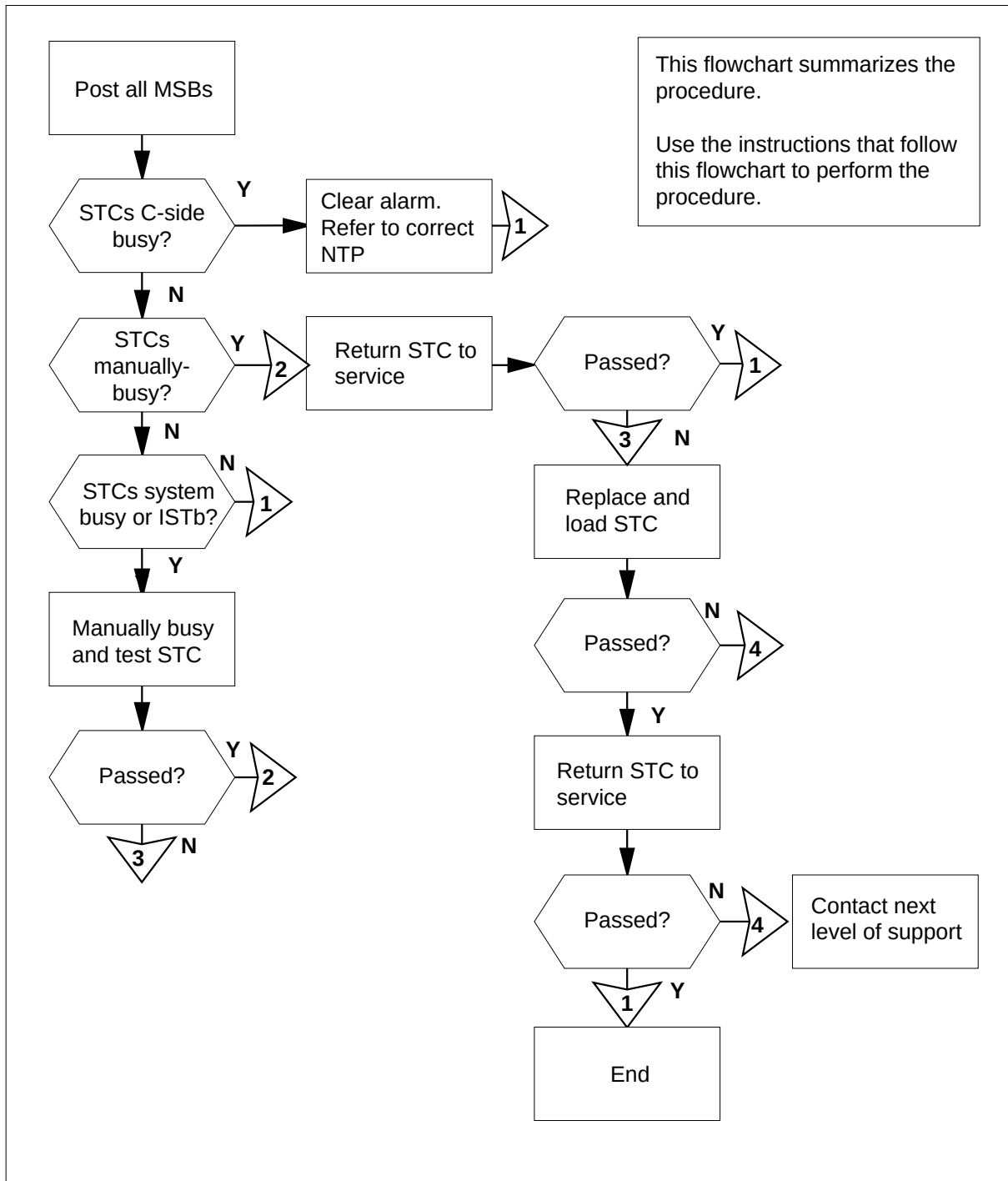
Do not go to the common procedure unless the step-action procedure directs you to go.

Action

This section provides a summary flowchart of the procedure and a list of steps to clear an alarm. A detailed step-action procedure follows the flowchart.

PM STC major or minor (continued)

Summary of clearing a PM STC major or minor alarm



PM STC

major or minor (continued)

Clearing a PM STC major or minor alarm

At the MAP display

- 1 To access the PM level of the MAP display, type

>MAPCI ; MTC ; PM

and press the Enter key.

Example of a MAP response:

	SysB	ManB	OffL	CBSy	ISTb	InSv
PM	1	3	5	7	6	12

- 2 Determine if an alarm is present under the Ext header of the MAP display.

If an Ext alarm	Do

is present	step 3

is not present	step 4

- 3 Perform the correct procedure in this document.

- 4 Determine if an audible alarm rings.

If an alarm	Do

rings	step 5

does not ring	step 6

- 5 To silence the alarm, type

>SIL

and press the Enter key.

- 6 To post all the MSBs, type

>POST MSBx ALL

and press the Enter key.

where

x

is the type of MSB (6 or 7)

Example of a MAP response:

```
MSB7    0 ISTb  Links_00S: CSide  0 , PSide  0
Unit0:   Act   ISTb
Unit1:   Inact ISTb
```

PM STC major or minor (continued)

7 Determine which MSB associates with the STCs that have faults.

8 To access the STC level of the MAP display, type

>STC

and press the Enter key.

9 From the MAP display, determine the status of the STCs.

If the status	Do
is InSv	step 10
is SysB	step 13
is CBsy	step 33
is ManB	step 34
is ISTb	step 53

10 To exit the STC level of the MAP display, type

>QUIT

and press the Enter key.

11 To display the next MSB in the posted set, type

>NEXT

and press the Enter key.

12 Go to step 8 to determine the status of the STCs.

13 To post all system busy STCs, type

>POST SYSB

and press the Enter key.

14 Work on the first STC in the posted set.

15 To manually busy the STC, type

>BSY

and press the Enter key.

16 To test the STC, type

>TST

and press the Enter key.

	If the TST command	Do
passed	step 17
failed, and the system generated a card list	step 18

PM STC**major or minor** (continued)

	If the TST command	Do
	failed, and the system did not generate a card list	step 20
17	To return the STC to service, type >RTS and press the Enter key.	
	If the RTS command	Do
	passed, and all STCs are InSv	step 74
	passed, the STC is InSv, but other SysB STCs are present	step 31
	failed, and the system generated a card list	step 18
	failed, and the system did not generate a card list	step 20
18	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.	
19	Perform the correct procedure in <i>Card Replacement Procedures</i> to change the first card on the list. Complete the procedure and return to this point.	
20	To load the STC, type >LOADPM and press the Enter key.	
	If the LOADPM command	Do
	passes	step 28
	fails, and MAP response includes: STC Load stc_loadname not in MSB7	step 21
	fails	step 24
21	To exit the STC level of the MAP display, type >QUIT and press the Enter key.	
22	From office records, determine the correct STC loadname.	
23	To add the STC load to each of the MSB units, type >STCLOAD UNIT unit_no A stc_loadname	

PM STC major or minor (continued)

and press the Enter key.

where

unit_no

is the number of the MSB unit (0 or 1)

stc_loadname

is the name of the STC load that you determined in step 22

If the STCLOAD command	Do
passed	step 25
failed	step 24

24 Perform the procedure *Loading a PM*. Complete the procedure and return to this point.

25 To access the STC level of the MAP display, type

>STC

and press the Enter key.

26 To post the original STC that you worked on, type

>POST STC stc_no

and press the Enter key.

where

stc_no

is the number of the STC

27 To load the STC, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passes	step 28
fails	step 73

28 To return the STC to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passes, and all STCs are InSv	step 74
passes, but other SysB STCs are present	step 31

PM STC

major or minor (continued)

	If the RTS command	Do
	fails, and you did not replace all cards in the list that you recorded in step 18	step 29
	fails, and you replaced all cards in the list that you recorded in step 18	step 73
29	Perform the correct procedure in <i>Card Replacement Procedures</i> to change the next card on the list. Complete the procedure and return to this point.	
30	Go to step 20.	
31	To display the next system busy STC in the posted set, type >NEXT and press the Enter key.	
32	Repeat steps 15 and 16 for each system busy STC. Complete these steps and go to step 33.	
33	The fault exists in the MSB that contains the STCs. Go to the procedure <i>Clearing a PM MSB6, MSB7 critical, major, or minor alarm</i> .	
34	To post all manually-busy STCs, type >POST MANB and press the Enter key.	
35	Work on the first STC in the posted set.	
36	Determine from office records or operating company personnel why the STC is manually busy. When you have permission, continue this procedure.	
37	To return the STC to service, type >RTS and press the Enter key.	
	If the RTS command	Do
	passes, and all STCs are InSv	step 74
	passes, the STC is InSv, but other ManB STCs are present	step 51
	fails, and the system generated a card list	step 38
	fails, and the system did not generate a card list	step 40
38	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.	
39	Perform the correct procedure in <i>Card Replacement Procedures</i> to change the first card on the list. Complete the procedure and return to this point.	

PM STC major or minor (continued)

- 40** To load the STC, type
>LOADPM
 and press the Enter key.
- | If the LOADPM command | Do |
|---|---------|
| passes | step 48 |
| fails, and MAP response includes: STC Load stc_loadname not in MSB7 | step 41 |
| fails | step 44 |
- 41** To exit the STC level of the MAP display, type
>QUIT
 and press the Enter key.
- 42** Determine from office records the correct STC loadname.
- 43** To add the STC load to each of the MSB units, type
>STCLOAD UNIT unit_no A stc_loadname
 and press the Enter key.
where
 unit_no
 is the number of the MSB unit (0 or 1)
 stc_loadname
 is the name of the STC load that you determined in step 22
- | If the STCLOAD command | Do |
|-------------------------------|---------|
| passes | step 45 |
| fails | step 44 |
- 44** Perform the procedure "Loading a PM". Complete the procedure and return to this point.
- 45** To access the STC level of the MAP display, type
>STC
 and press the Enter key.
- 46** To post the original STC that you worked on, type
>POST STC stc_no
 and press the Enter key.
where
 stc_no
 is the number of the STC

PM STC**major or minor** (continued)

- 47** To load the STC, type
>LOADPM
and press the Enter key.
- | If the LOADPM command | Do |
|------------------------------|-----------|
| passes | step 48 |
| fails | step 73 |
- 48** To return the STC to service, type
>RTS
and press the Enter key.
- | If the RTS command | Do |
|---|-----------|
| passes, and all STCs are InSv | step 74 |
| passes, the STC is InSv, but other ManB STCs are present | step 52 |
| fails, and you did not replace all cards on the list that you recorded in step 38 | step 49 |
| fails, and you replaced all cards in the list that you recorded in step 38 | step 73 |
- 49** Perform the correct procedure in *Card Replacement Procedures* to change the next card on the list. Complete the procedure and return to this point.
- 50** Go to step 47.
- 51** To display the next manually-busy STC in the posted set, type
>NEXT
and press the Enter key.
- 52** Repeat steps 36 and 37 for each manually-busy STC. Complete these steps and go to step 53.
- 53** To post all the in-service trouble STCs, type
>POST ISTB
and press the Enter key.
- 54** Work on the first STC in the posted set.
- 55** To busy the STC, type
>BSY
and press the Enter key.
-

PM STC major or minor (continued)

- 56** To load the STC, type
>LOADPM
 and press the Enter key.
- | If the LOADPM command | Do |
|---|---------|
| passes | step 64 |
| fails, and MAP response includes: STC Load stc_loadname not in MSB7 | step 57 |
| fails | step 60 |
- 57** To exit the STC level of the MAP display, type
>QUIT
 and press the Enter key.
- 58** Determine from office records the correct STC loadname.
- 59** To add the STC load to each of the MSB units, type
>STCLOAD UNIT unit_no A stc_loadname
 and press the Enter key.
where
 unit_no
 is the number of the MSB unit (0 or 1)
 stc_loadname
 is the name of the STC load that you determined in step 22
- | If the STCLOAD command | Do |
|-------------------------------|---------|
| passes | step 61 |
| fails | step 60 |
- 60** Perform the procedure "Loading a PM". Complete the procedure and return to this point.
- 61** To access the STC level of the MAP display, type
>STC
 and press the Enter key.
- 62** To post the first STC that you worked on, type
>POST STC stc_no
 and press the Enter key.
where
 stc_no
 is the number of the STC

PM STC

major or minor (continued)

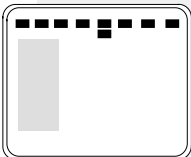
63	To load the STC, type >LOADPM and press the Enter key.										
<table> <tr> <th data-bbox="540 499 860 531">If the LOADPM command</th><th data-bbox="987 499 1023 531">Do</th></tr> <tr> <td data-bbox="540 558 625 590">passes</td><td data-bbox="987 558 1079 590">step 64</td></tr> <tr> <td data-bbox="540 617 600 648">fails</td><td data-bbox="987 617 1079 648">step 73</td></tr> </table>		If the LOADPM command	Do	passes	step 64	fails	step 73				
If the LOADPM command	Do										
passes	step 64										
fails	step 73										
64	To return the STC to service, type >RTS and press the Enter key.										
<table> <tr> <th data-bbox="540 814 800 846">If the RTS command</th><th data-bbox="1242 814 1278 846">Do</th></tr> <tr> <td data-bbox="540 873 933 905">passes, and all STCs are InSv</td><td data-bbox="1242 873 1334 905">step 74</td></tr> <tr> <td data-bbox="540 932 1209 1005">passes, the STC is InSv, but other ISTb STCs are present</td><td data-bbox="1242 932 1334 963">step 71</td></tr> <tr> <td data-bbox="540 1033 1063 1064">fails, and the system generated a card list</td><td data-bbox="1242 1033 1334 1064">step 65</td></tr> <tr> <td data-bbox="540 1092 1144 1123">fails, and the system did not generate a card list</td><td data-bbox="1242 1092 1334 1123">step 73</td></tr> </table>		If the RTS command	Do	passes, and all STCs are InSv	step 74	passes, the STC is InSv, but other ISTb STCs are present	step 71	fails, and the system generated a card list	step 65	fails, and the system did not generate a card list	step 73
If the RTS command	Do										
passes, and all STCs are InSv	step 74										
passes, the STC is InSv, but other ISTb STCs are present	step 71										
fails, and the system generated a card list	step 65										
fails, and the system did not generate a card list	step 73										
65	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.										
66	Perform the correct procedure in <i>Card Replacement Procedures</i> to change the first card on the list. Complete the procedure and return to this point.										
67	To load the STC, type >LOADPM and press the Enter key.										
<table> <tr> <th data-bbox="540 1432 860 1463">If the LOADPM command</th><th data-bbox="987 1432 1023 1463">Do</th></tr> <tr> <td data-bbox="540 1491 625 1522">passes</td><td data-bbox="987 1491 1079 1522">step 68</td></tr> <tr> <td data-bbox="540 1549 600 1581">fails</td><td data-bbox="987 1549 1079 1581">step 73</td></tr> </table>		If the LOADPM command	Do	passes	step 68	fails	step 73				
If the LOADPM command	Do										
passes	step 68										
fails	step 73										
68	To return the STC to service, type >RTS and press the Enter key.										
<table> <tr> <th data-bbox="540 1747 800 1778">If the RTS command</th><th data-bbox="1242 1747 1278 1778">Do</th></tr> <tr> <td data-bbox="540 1803 933 1835">passes, and all STCs are InSv</td><td data-bbox="1242 1803 1334 1835">step 74</td></tr> </table>		If the RTS command	Do	passes, and all STCs are InSv	step 74						
If the RTS command	Do										
passes, and all STCs are InSv	step 74										

PM STC
major or minor (end)

	If the RTS command	Do
	passes, the STC is InSv, but other ISTb STCs are present	step 71
	fails, and you did not replace all cards in the list that you recorded in step 65	step 69
	fails, and you replaced all cards in the list that you recorded in step 65	step 73
69	Perform the correct procedure in <i>Card Replacement Procedures</i> to change the next card on the list. Complete the procedure and return to this point.	
70	Go to step 67.	
71	To display the next manually-busy STC in the posted set, type >NEXT and press the Enter key.	
72	Repeat steps 55 and 56 for each manually-busy STC. Complete these steps and return to this point.	
73	For additional help, contact the next level of support.	
74	The procedure is complete.	

PM SysB major

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	1SysB	.	.	.		.
					M					

Indication

At the MTC level of the MAP display, SysB (preceded by a number and followed by an M) appears under the PM header of the alarm banner. The SysB indicates a system busy (SysB) major alarm. The number that precedes the SysB indicates the number of affected PMs. The previous figure shows an alarm banner with a SysB major alarm.

This alarm applies only to the following PMs:

- maintenance trunk module (MTM)
- service trunk module (STM)
- trunk module 8 (TM8)

Meaning

The indicated number of PMs are system busy.

Result

Service stops when a PM is system busy.

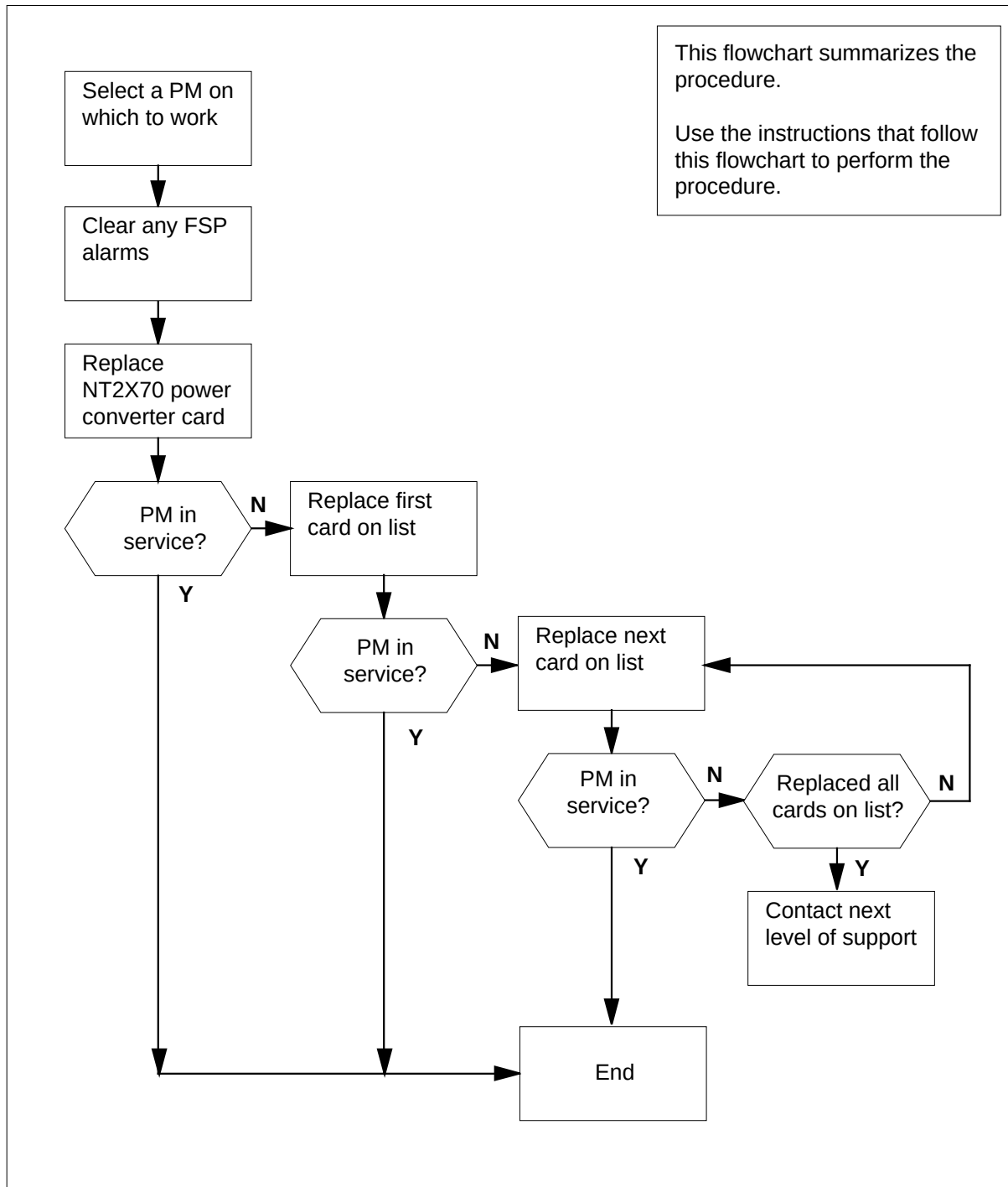
Common procedures

This procedure refers to *Monitoring system maintenance*.

Do not go to the common procedure unless the step-action procedure directs you to go.

Action

This section provides a summary flowchart of the procedure and a list of steps to clear an alarm. A detailed step-action procedure follows the flowchart.

**PM SysB
major** (continued)**Summary of clearing a PM SysB major alarm**

PM SysB major (continued)

Design of a TM shelf

		21
NT2X09	Power converter card	20
	Trunk interface circuit	19
	Trunk interface circuit	18
	Trunk interface circuit	17
	Trunk interface circuit	16
	Trunk interface circuit	15
	Trunk interface circuit	14
	Trunk interface circuit	13
	Trunk interface circuit	12
	Trunk interface circuit	11
	Trunk interface circuit	10
	Trunk interface circuit	09
	Trunk interface circuit	08
	Trunk interface circuit	07
	Trunk interface circuit	06
	Trunk interface circuit	05
NT2X59	Codec and tone card	04
NT2X53	Control card	03
NT0X70	Processor card	02
NT2X45	Network interface card	01

Design of an MTM shelf

PM SysB major (continued)

NT2X06	Power converter card	21
—OR—		
NT2X70	Power converter card	20
NT0X50	Filler card	19
		18
NT2X09	Power converter card	17
	Trunk interface circuit	16
	Trunk interface circuit	15
	Trunk interface circuit	14
	Trunk interface circuit	13
	Trunk interface circuit	12
	Trunk interface circuit	11
	Trunk interface circuit	10
	Trunk interface circuit	09
	Trunk interface circuit	08
	Trunk interface circuit	07
	Trunk interface circuit	06
	Trunk interface circuit	05
NT2X59	Codec and tone card	04
NT2X53	Control card	03
NT0X70	Processor card	02
NT2X45	Network interface card	01

Clearing a PM SysB major alarm

At the MAP display

- 1 To access the PM level of the MAP display, type
>MAPCI ; MTC ; PM
and press the Enter key.

Example of a MAP response:

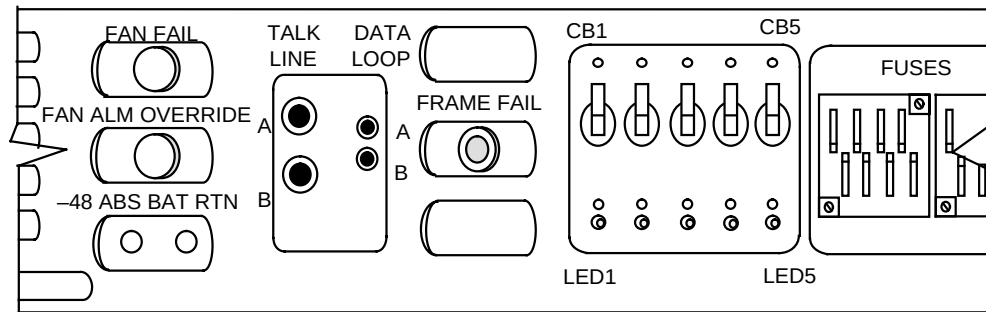
PM SysB major (continued)

PM	SysB 1	ManB 3	OffL 5	CBsy 7	ISTb 6	InSv 12
If		Do				
an audible alarm rings		step 2				
the M indicator at the alarm banner flashes		step 2				
other than listed here		step 3				
2	To silence the alarm, type >SIL and press the Enter key.					
3	To display all SysB PMs, type >DISP STATE SYSB and press the Enter key. <i>Example of a MAP response:</i> SysB TM8 : 0					
Note: If multiple types of PMs are SysB, work on MTMs first. If multiple PMs of the same type are SysB, select one on which to work. Record the number of the PM.						
4	Check the EXT header of the alarm banner.					
If an FSP alarm		Do				
is present		step 5				
is not present		step 23				
5	To locate the FSP alarm, type >EXT; LIST FSP and press the Enter key. <i>Example of a MAP response:</i> FSPAISD In this example, the alarm is an FSP alarm on Aisle D.					
At the equipment aisle						
6	Go to the aisle that you identified in step 5. The end aisle alarm is lit.					

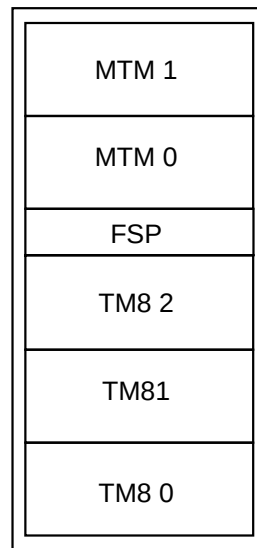
PM SysB major (continued)

At the equipment frame

- 7 Identify the frame with the FSP alarm. Examine the frame fail lamp on the frame supervisory panel (FSP) of each frame. The frame with the FSP alarm has a lit frame fail lamp. The following figure shows an FSP with a lit fail lamp.

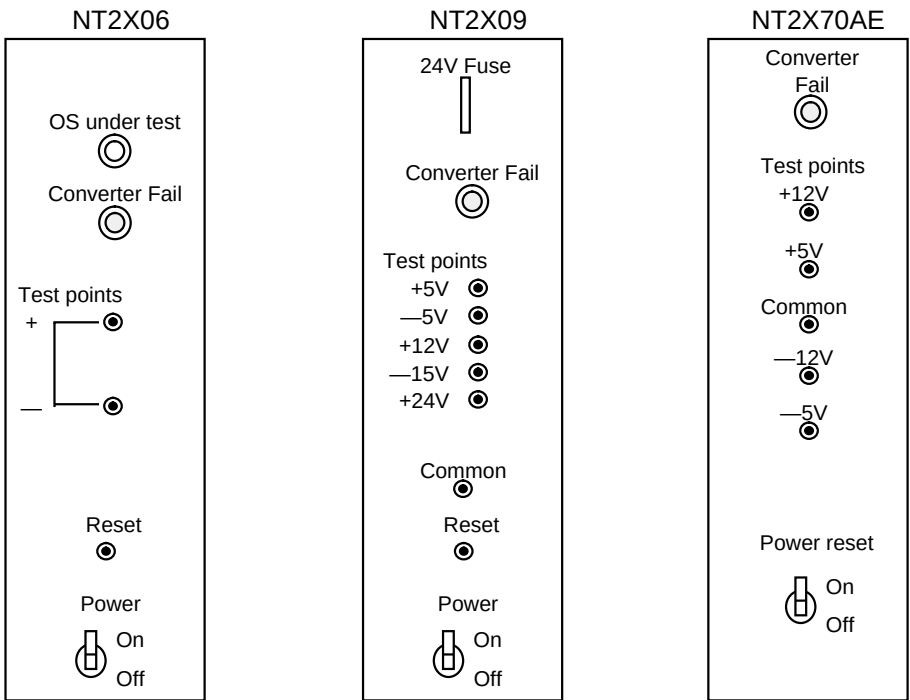


- 8 Identify the PMs in the frame. Refer to the following figures of trunk module equipment (TME) frames for help.



- 9 Examine the Converter Fail LED on each NT2X06, NT2X09, and NT2X70 power converter card in the frame. Refer to the figures "Design of a TM shelf" and "Design of an MTM shelf" for help to locate these cards. Refer to the following figures for help to check the Converter Fail LED on each card.

PM SysB
major (continued)



If any LEDs	Do
are lit	step 10
are not lit	step 14

10 Note the PM with the LED light on.

At the MAP display

11 To post the PM and identify the location of the PM, type
>PM; POST pm pm_no;QUERYPM
and press the Enter key.
where

pm
is the type of PM (MTM, STM, or TM8)

pm_no
is the number (0 to 2047) of the PM

Example of a MAP response:

PM SysB major (continued)

```

TM8      0          SysB
QUERYPM
    PM Type: TM8  PM No.: 0  Node_No.: 10
PM_STATUS: InSv  NODE_STATUS: OK,FALSE,  CHKSUM: #023E
PP LOAD: VALID  PP EXECS: VALID  FNAME: BTMKA02
PMS EQUIPPED: 13  PM INT. #: 1
    Site Flr  RPos  Bay_id  Shf  Description  Slot  EqPEC
HOST  01    D04  TME 00   04    TM8 : 000          2X52AG
TM Entries:  0 to 4

```

	If a maintenance (Mtce) flag	Do
	appears next to the PM	step 12
	does not appear	step 13
12	Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this point.	
	If the major alarm	Do
	remains	step 13
	changes	step 40
	clears	step 42
13	Determine if the PM is the same as the PM that you identified in step 10.	
	If the PM	Do
	is different	step 15
	is the same	step 14
14	Clear the FSP alarm. Perform the correct alarm clearing procedure in this document. Complete the procedure and return to this step.	
15	To busy the PM, type >BSY and press the Enter key.	

At the equipment frame

- 16** Change the NT2X06, NT2X09, or NT2X70 power converter card. Refer to the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

PM SysB major (continued)

At the MAP display

- 17** To load the PM, type
>LOADPM
and press the Enter key.

where

pm
is the type of PM (MTM, STM, or TM8)

pm_no
is the number (0 to 2047) of the PM

If the LOADPM	Do
fails, and the system generated a card list	step 27
fails, and the system did not generate a card list	step 41
fails, and the response is load-file not found in directory	step 18
passes	step 26

- 18** Examine office records to determine the device and volume of your PM load files.

If your device	Do
is an SLM	step 19
is a DDU	step 21

- 19** To access the DISKUTIL level, type
>DISKUT
and press the Enter key.

- 20** To list the PM load file to the user directory, type
>LF device_volume_name
and press the Enter key.

where

device_volume_name
is the location and name of the PM load file

Example of input: LF S00DPMLOADS

Go to step 17.

PM SysB major (continued)

- 21** To access the DSKUT level, type
>DSKUT
 and press the Enter key.
- 22** To list the PM load file to the user directory, type
>LIV device_volume_name
 and press the Enter key.
where
device_volume_name
 is the location and name of the PM load file
Example of input: LIV D01PMLOADS
 Go to step 17.

- 23** To post the PM, type
>POST pm pm_no
 and press the Enter key.
where
pm
 is the type of PM (MTM, STM, or TM8)
pm_no
 is the number (0 to 2047) of the PM
Example of a MAP response:

TM8	0	SysB

If a maintenance flag	Do
appears next to the PM	step 24
does not appear	step 25

- 24** Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this point.

If the major alarm	Do
remains	step 25
changes	step 40
clears	step 42

- 25** To busy the PM, type
>BSY
 and press the Enter key.

PM SysB major (continued)

- 26** Return the PM to service, type
>RTS
and press the Enter key.

If the PM	Do
does not return to service, and the system generated a card list	step 27
does not return to service, and the system did not generate a card list	step 41
returns to service	step 35

At the equipment frame

- 27** Replace the first or next card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Refer to the figures *Design of a TM shelf* and *Design of an MTM shelf* for help to locate the card.

If you replace	Do
an NT0X70, NT2X06, NT2X09, NT2X45, NT2X53, or NT2X70 card	step 28
other than listed here	step 34

At the MAP display

- 28** To load the PM, type
>LOADPM
and press the Enter key.
where

pm
is the type of PM (MTM, STM, or TM8)

pm_no
is the number (0 to 2047) of the PM

If the LOADPM	Do
fails, and the system generated a card list, and you did not replace all cards on the list of cards that have faults	step 27

PM SysB major (continued)

	If the LOADPM	Do
	fails, and the system generated a card list, and you replaced all cards on the list of cards that have faults	step 41
	fails, and the system did not generate a card list	step 41
	fails, and the response is loadfile not found in directory	step 29
	passes	step 34
29	Check office records to determine the device and volume of your PM load files.	
	If your device	Do
	is an SLM	step 30
	is a DDU	step 32
30	To access the DISKUTIL level, type >DISKUT and press the Enter key.	
31	To list the PM load file to the user directory, type >LF device_volume_name and press the Enter key. <i>where</i> device_volume_name is the location and name of the PM load file <i>Example of input:</i> LF S00DPMLOADS Go to step 28.	
32	To access the DSKUT level, type >DSKUT and press the Enter key.	
33	To list the PM load file to the user directory, type >LIV device_volume_name and press the Enter key. <i>where</i>	

PM SysB

major (continued)

device_volume_name

is the location and name of the PM load file

Example of input: LIV D01PMLOADS

Go to step 28.

- 34** To return the PM to service, type

>RTS

and press the Enter key.

If the PM	Do
does not return to service, the system generated a card list, and you did not replace all cards on the list of cards that have faults	step 27
does not return to service, the system generated a card list, and you replaced all cards on the list of cards that have faults	step 41
does not return to service, and the system did not generate a card list	step 41
returns to service	step 35

- 35** To access the TTP level, type

>TRKS;TTP

and press the Enter key.

- 36** To post the PM, type

>POST P pm pm_no

and press the Enter key.

where

pm

is the type of PM (MTM, STM, or TM8)

pm_no

is the number (0 to 2047) of the PM

- 37** To busy all trunk circuits, type

>BSY ALL

and press the Enter key.

**PM SysB
major (end)**

- 38** To post the PM again, type
>POST P pm pm_no
and press the Enter key.
where
pm
is the type of PM (MTM, STM, or TM8)
pm_no
is the number (0 to 2047) of the PM
- 39** To return all trunk circuits to service, type
>RTS ALL
and press the Enter key.
Go to step 42.
- 40** The SysB major alarm changed to another type of alarm. Refer to the correct alarm clearing procedure in this document. Go to step 42.
- 41** You will require additional maintenance action to clear this alarm. Contact the next level of support. Describe in detail the steps you performed to clear this alarm.
- 42** The procedure is complete.

PM SysB (OSNM) major

Alarm display

	CM	MS	IOD	Net	PM SysB M	CCS	Lns	Trks	Ext	APPL
	.	.	.	.		.	.	.	.	.

Indication

At the MTC level of the MAP display, an M can appear under the PM header of the alarm banner. The M indicates a major alarm.

Meaning

A peripheral module is system busy. An Operator Service Node Maintained (OSNM) module is system busy.

One of the following conditions is present:

- The OSNM loses contact with the computing module.
- The OSNM fails to respond to the system audit.
- The OSNM exceeds the invalid message threshold.
- The OSNM did not return to service after a system restart.

Result

All session pools on the OSNM are out of service. Call processing on the OSNM does not occur.

Common procedures

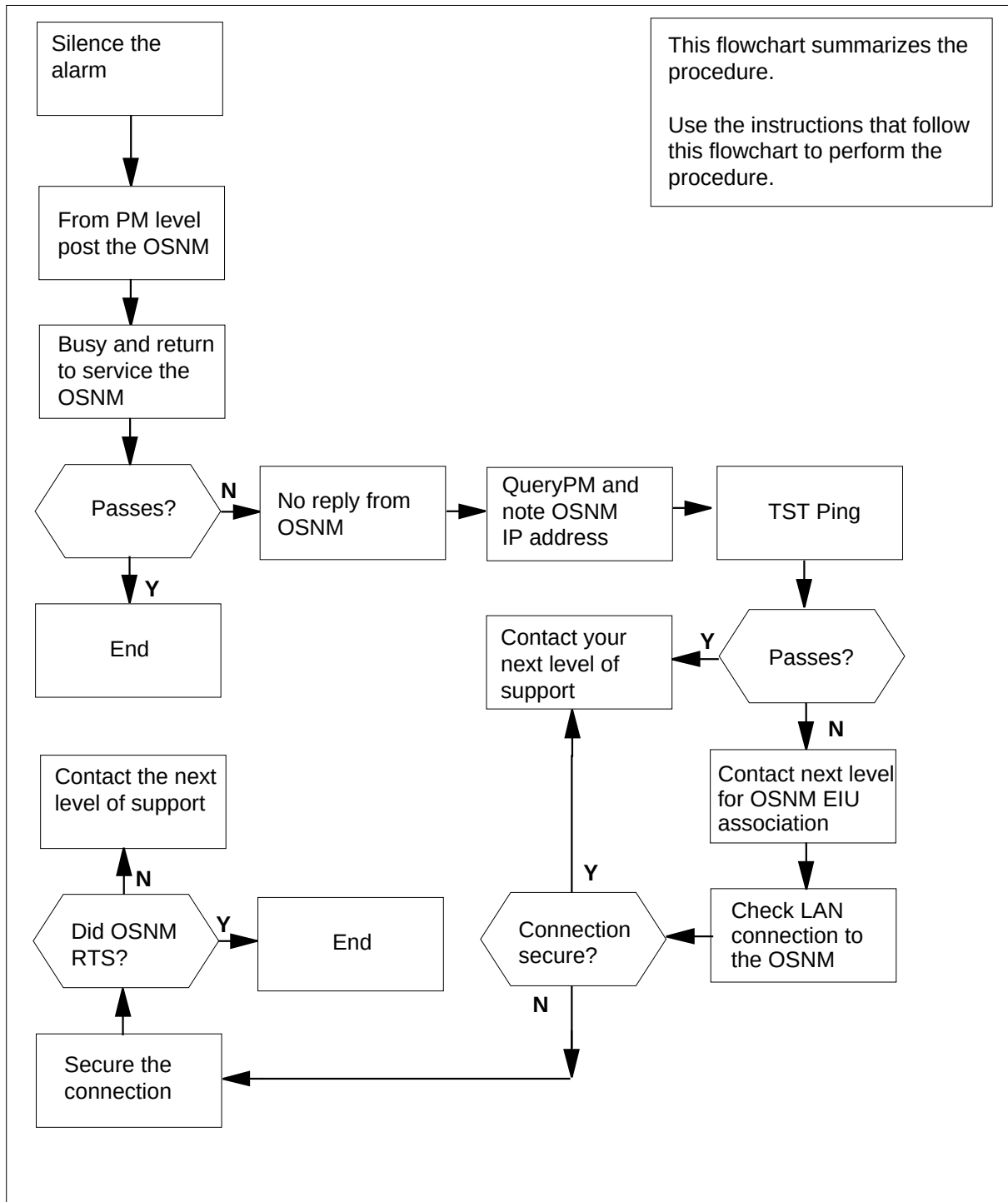
Does not apply

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM SysB (OSNM) major (continued)

Summary of Clearing an OSNM SysB Major alarm



PM SysB (OSNM)
major (continued)

Clearing a PM SysB (OSNM) OSNM SysB alarm

At the MAP display

- 1 To silence the alarm, type
>MAPCI;MTC;SIL
and press the Enter key.
- 2 To access the PM level of the MAP display, type
>PM
and press the Enter key.

Example of a MAP display:

SysB	ManB	OffL	CBsy	ISTb	InSv
1	0	0	0	0	0

PM

- 3 To post the system busy OSNM, type
>POST OSNM SysB
and press the Enter key.

Example of a MAP display:

SysB	ManB	OffL	CBsy	ISTb	InSv
1	0	0	0	0	0

PM
OSNM

OSNM 0
NONE
SysB

- 4 To busy and return to service the OSNM, type
>BSY;RTS
and press the Enter key.

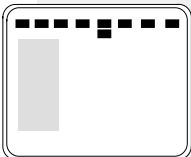
If RTS	Do
passes	step 12
fails	step 5

PM SysB (OSNM)
major (end)

5	Note the failure reason.
If failure	Do
is no reply from OSNM	step 6
is other condition	step 11
6	To perform a ping test on the OSNM, type >TST PING and press the Enter key.
If the ping test	Do
passes	step 11
fails	step 7
7	Contact next level of support. Provide the results of the ping test and ask network personnel for Ethernet Interface Unit (EIU) to OSNM connections. Return to this point in the procedure.
8	Check the LAN connection to the OSNM at the associated EIU.
If the connection	Do
is secure	step 11
is not secure	step 9
9	Secure the connection to the EIU.
10	Determine if the OSNM returned to service?
If	Do
Yes	step 12
No	step 11
11	For additional help, contact the next level of support.
12	The procedure is complete.

PM talk battery
critical

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	Appl
	.	.	.	.	nTBAT	.	.	.	.	.
					C					

Indication

An nTBAT under the PM subsystem header indicates a critical alarm. The alarm involves the talk battery (TBAT) of an extended line concentrating module (XLCM) or enhanced LCM (LCME). A *C* appears underneath the nTBAT at the MTC level of the MAP.

Meaning

The alarm condition indicates, one or both units of the XLCM/LCME do not have talk batteries.

Note: References to LCM apply to XLCM and LCME peripheral module types.

Result

A loss of call processing and an indication of a critical alarm occur when a talk battery failure is present.

Common procedures

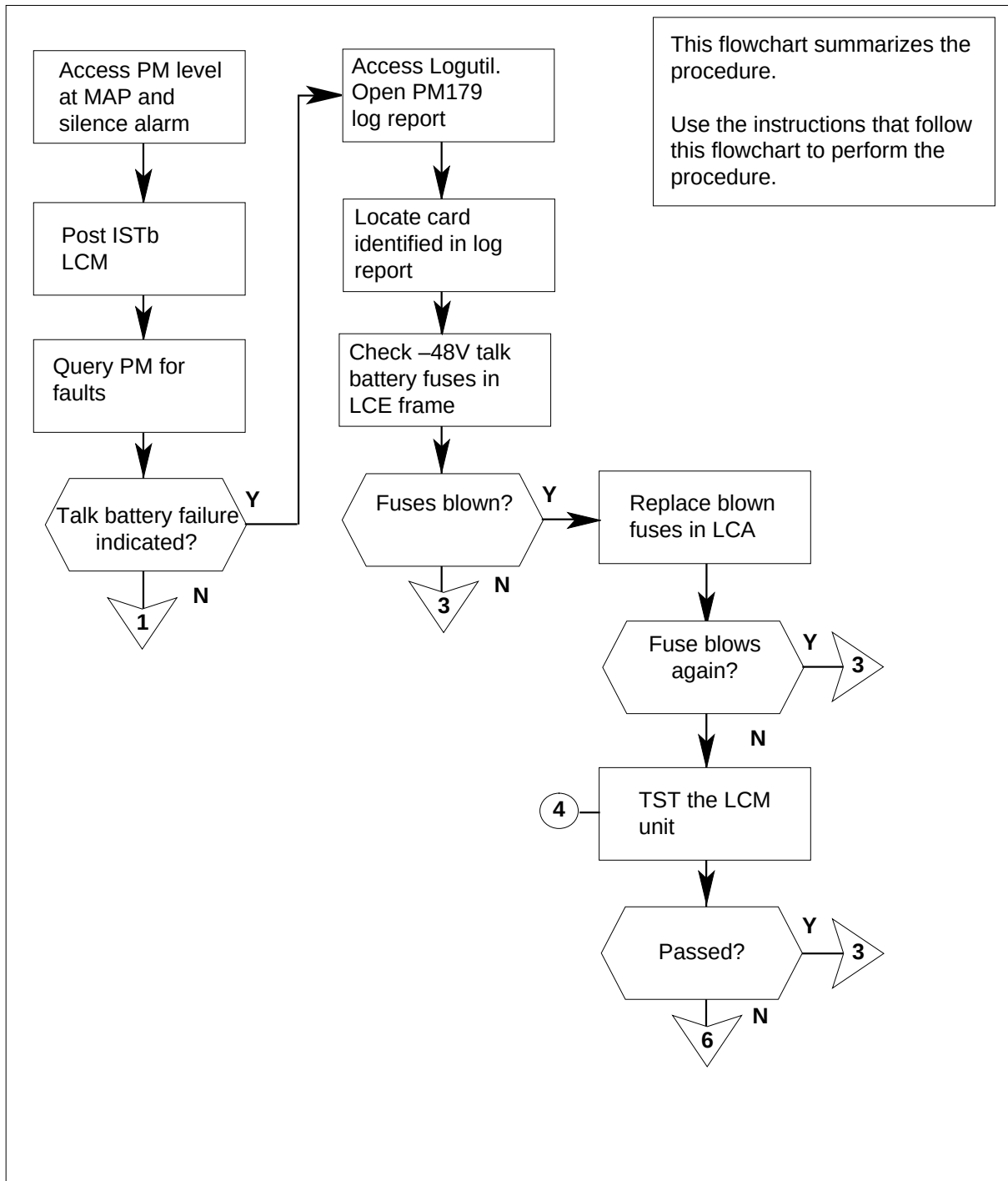
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

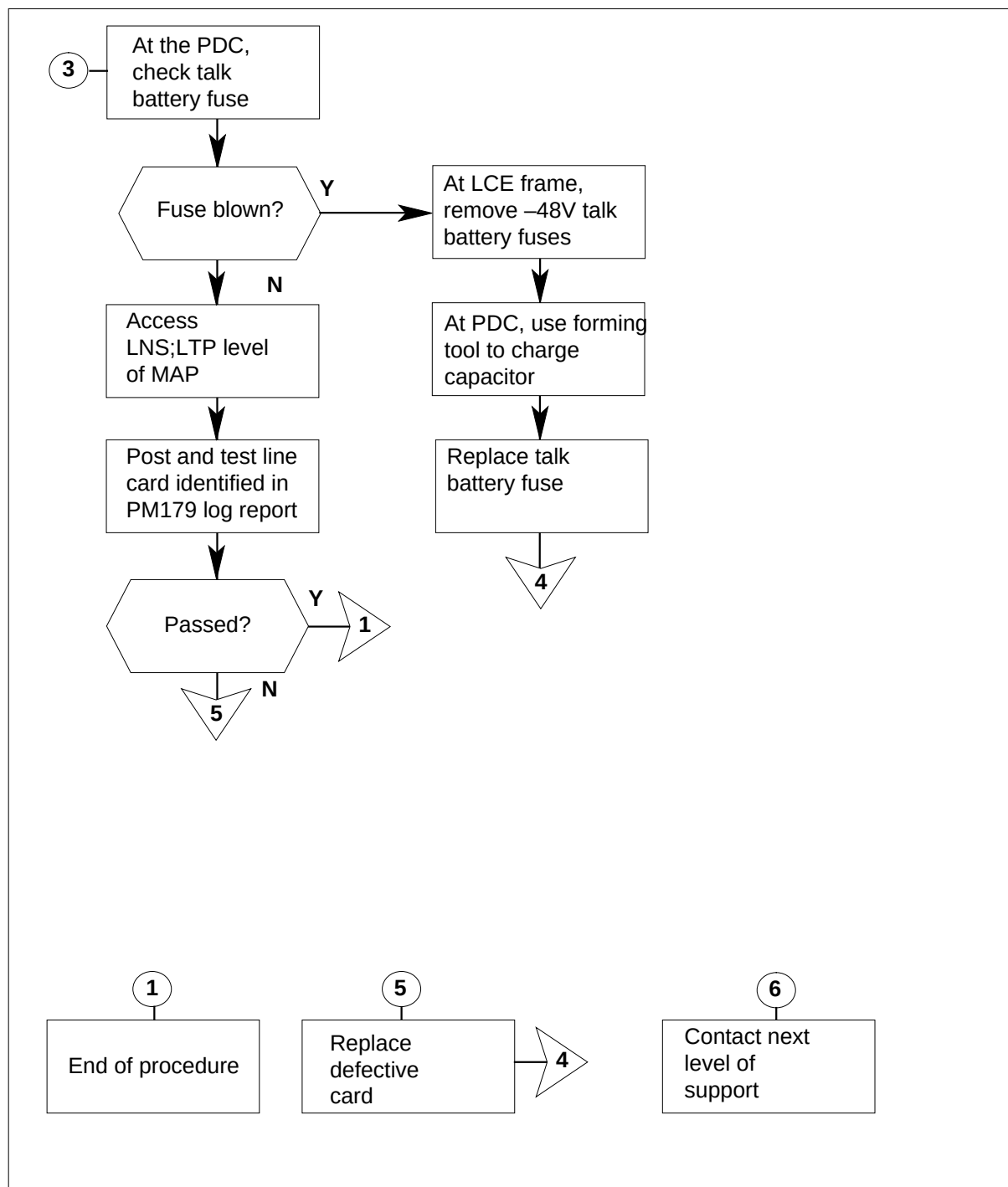
PM talk battery critical (continued)

Summary of Clearing a PM talk battery critical alarm



PM talk battery critical (continued)

Summary of Clearing a PM talk battery critical alarm (continued)



**PM talk battery
critical** (continued)

Clearing a PM talk battery critical alarm**ATTENTION**

Enter this procedure from a step in a procedure at the PM system level to clear alarms. Enter from the step that identified a PM alarm for the failure of an LCM or LCME talk battery.

At the MAP terminal

- 1 To silence an audible alarm, type
>MAPCI;MTC;SIL
and press the Enter key.
- 2 To access the PM level of the MAP display, type
>PM
and press the Enter key.
- 3 To identify the LCM(E) that has faults, type
>DISP STATE ISTB LCM
and press the Enter key.
or
>DISP STATE ISTB LCME
and press the Enter key.
- 4 To post the LCM(E) with the lost talk battery, type
>POST LCM(E) site frame lcm(e)
and press the Enter key.
where
site
is the site name of the LCM (alphanumeric)
frame
is the frame number of the LCE (0-511)
lcm(e)
is the number of the LCM or LCME (0 or 1) in the frame

Example of an LCM MAP display:

PM talk battery critical (continued)

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	1LCM *C*	.	.	.	.	.
LCM		SysB	ManB	OffL	CBsy	ISTb	InSv		
0 Quit	PM	0	0	2	0	2	42		
2 Post_	LCM	0	0	0	0	2	9		
3 ListSet									
4 SwRG	LCM	HOST	00 0	ISTb	Links_OOS:	CSide	0	PSide	0
5 TrnsL_	Unit0:	ISTb			/RG: 1				
6 Tst_	Unit1:	ISTb			/RG: 1				
7 Bsy_					11 11 11	11 11	RG:Pref	1	InsV
8 RTS_	Drwr:	01 23 45 67 89	01 23 45 67 89	01 23 45 67 89	01 23 45 67 89	01 23 45 67 89	Stby	0	InsV
9 OffL		.. ..	.. ..	.. ..	.. ..	.. ..	.. ..		
10 LoadPM_									
11 Disp_									
12 Next									
13									
14 QueryPM									
15									
16									
17									
18									

- 5 To query the LCM(E) fault, type

>QUERYPM FLT

and press the Enter key.

Example of an LCM MAP response:

```
Node inservice troubles exist:
One or both Units inservice trouble
LCM UNIT 0 Inservice Troubles Exist:
Talk Battery Failure
LCM UNIT 1 Inservice Troubles Exist:
Talk Battery Faliure
```

- 6 To access the logutil utility subsystem and open the PM179 log buffer, type

>LOGUTIL;OPEN PM 179

and press the Enter key.

- 7 To locate the line card where the system detected the loss of a talk battery, type

>BACK

and press the Enter key.

Example of a MAP response:

PM talk battery critical (continued)

```
*** PM179 NOV30 19:02:45 7465 TBL PM HW EXCEPTION REPORT
LCM HOST 00 1 Unit 0Self Test Fail - Talk Battery Problem
Talk Battery failure: detected on shelf 38 by card
6X17BA-8:2
```

Note: Repeat this command until you find the log or reach the end of the buffer.

- 8 To quit the logutil utility, type
>QUIT
and press the Enter key.

At the LCE/LCME frame

- 9 Check the fuses in each LCA baffle.

If fuses	Do
have blown (indicator protrudes)	step 10
have not blown	step 19

- 10 Determine if the fuse has blown.

- Note 1: In the LCM
 - fuses 01 to 05 each supply +5 V
 - fuses 06 to 10 each supply +15 V
 - fuses 11 to 15 each supply -48 V
- Note 2: In the LCME
 - fuses F01 to F04 each supply -48V battery return
 - fuses F05 to F08 supply -48V for the PUPS
 - fuses F09 to F12 each supply +15V
 - fuses F13 to F16 each supply -48V talk battery
 - fuse F17 supplies the ringing generator

- 11 Use the following table to determine the next step.

If the frame type	Do
is an LCE frame	step 12
is an LCME frame	step 13

PM talk battery critical (continued)

- 12** Use the following table to determine the LCM -48V fuses and their associated +15V fuses. The LCM -48V fuses range from 11 to 15. The +15V fuses range from 06 to 10.

+15V fuse number	-48V fuse number
06	11
07	12
08	13
09	14
10	15

Go to step 14

- 13** Use the table below to determine the LCME -48V fuse and their associated +15V fuses and -48V fuses. The +15V fuses range from F09 to F12. The -48V battery return fuses range from F01 to F04. The LCME -48V talk battery fuses range from F13 to F16.

+15V fuse number	-48V battery return fuse number	-48V talk battery fuse number
F09	F01	F13
F10	F02	F14
F11	F03	F15
F12	F04	F16

Go to step 14.

At the MAP terminal

- 14** To make the line drawer (LD) that associates with the blown fuses busy, type
>BSY DRWR drwr_no
 and press the Enter key.
where
drwr_no
 is the line subgroup (LSG) (0 to 19 for an LCM and 0 to 15 for an LCME) that associates with the blown fuse

Example of a MAP response:

PM talk battery critical (continued)

LCM

```
LCM HOST 00 0 ISTb Links 00S: Cside 0 Pside 0
Unit0: ISTb /RG: 1
Unit1: ISTb /RG: 1
11 11 11 11 11 RG: Pref 1 InSv
Drwr: 01 23 45 67 89 01 23 45 67 89 Stby 0 InSv
.. .. S. .. .. .. .. ..
bsy drwr 4
LCM HOST 00 0 Drwr 4 will be taken out of service
Please confirm ("YES", "Y", "NO", or "N"):
```

or

LCME

```
LCME HOST 01 1 ISTb Links 00S: Cside 0
Unit0: ISTb /RG: 1
Unit1: ISTb /RG: 1
11 11 11 RG: Pref 1 InSv
Drwr: 01 23 45 67 89 01 23 45 Stby 0 InSv
.. .. SS .. .. .. ..
bsy drwr 4
WARNING ... this action will affect both drwrs 4 and 5
LCME HOST 01 1 Drwr 4 will be taken out of service
Please confirm ("YES", "Y", "NO", or "N"):
```

- 15** Use the following table to determine the next step

If the blown fuse	Do
is +15V	step 16
is -48V	step 17

- 16** Remove the blown fuse, and the associated fuse. For example, in an LCM, if the blown fuse is 06, also remove fuse 11.

- 17** Obtain a replacement fuse with the same voltage and amperage as the blown fuse.

- 18**



DANGER

Protect against risk of fire

Replace the blown fuse with a fuse of the same type, rating (color code), and manufacturer.

PM talk battery critical (continued)

Insert the +15V fuse. Insert the -48V fuse removed in step 16.

If the fuse	Do
has blown (protruding indicator)	step 36
has not blown	step 19

At the PDC frame

- 19** Check the associated fuses of the talk battery at the power distribution center (PDC).

If the fuses	Do
have blown (indicator protrudes)	step 20
have not blown	step 31

- 20** Remove the fuse holder. Replace the cartridge fuse. Remove the guard fuse in the fuse holder.

- 21** Obtain a capacitor forming tool.

Note: A capacitor forming tool consists of a 100 watt 120V light bulb screwed into a socket with bare-ended twisted wires.

At the LCE/LCME frame

- 22** Refer to the following table to determine the next step.

If the frame type	Do
is an LCE frame	step 23
is an LCME frame	step 24

- 23** At the LCE frame that associates with the blown fuse, remove the five fuses for the -48V talk battery. The fuses reside in the baffels above the LCA that associate with the blown PDC fuse. Refer to the following table for feed-to-LCA links.

If LCM LCA in the frame	Talk batter feed at PDC
is LCA 0	is PDC feed A
is LCA 1	is PDC feed B

Go to step 25

- 24** At the LCME frame that associates with the blown fuse, remove the eight fuses for the -48 V talk battery. The fuses reside in the shelf fuse panel at the

PM talk battery critical (continued)

LCA that associates with the blown PDC fuse. Refer to the following table for feed to LCME LCA links.

If LCME LCA in the frame	DoTalk battery feed at PDC
is LCA 0	is PDC feed A
is LCA 1	is PDC feed B

At the PDC frame

25



DANGER

Risk of electrocution

Some terminals inside the PDC have an electrical potential of -48V dc to -60V dc. Do not touch any terminals inside the PDC.

Connect the leads of the capacitor forming tool across the connectors in the fuse holder slot.

Note: The bulb glows. The bulb becomes dark when the capacitors are at maximum charge.

26 Insert the fuse holder into the PDC frame slot.

At the LCE/LCME frame

27 After you form the capacitor, insert the LCA fuses that you removed in step 23 or 24.

If the fuse	Do
has blown again	step 36
has not blown again	step 28

At the MAP terminal

28 To test the ManB line drawer, type
>TST DRWR drawr_no
 and press the Enter key.
where

PM talk battery critical (continued)

drwr_no

is the LSG (0 to 19) that associates with the blown fuse

Note: If in an LCM, repeat this command for the other LSG in the LD.

If TST command	Do
passed	step 29
failed and card has not been previously replaced	step 35
failed and card has been replaced	step 36

29 To return the LD to service, type

>RTS DRWR drwr_no

and press the Enter key.

where

drwr_no

is the LSG (0 to 19) that you tested in step 28.

Note: If in an LCM, repeat this command for the other LSG in the LD.

If the RTS command	Do
passes	step 30
fails	step 36

30 To determine if the fault cleared, type

>QUERYPM FLT

and press the Enter key.

If the LCM minor alarm	Do
remains	step 31
clears	step 37

31 To access the LTP level of the MAP display and post the line circuit card identified in step 7, type

>LNS;LTP;POST L site frame lcm lsg circuit

and press the Enter key.

site

is the site name of the LCM (alphanumeric)

frame

is the frame number of the LCE frame (0 to 511)

**PM talk battery
critical (end)**

lcm
is the number of the LCM

lsg
is the number (0 to 19) of the LSG

circuit
is the number (0 to 31) of the line circuit card

32 To test the WLC, type

>DIAG

If diagnostics

Do

passed

step 34

failed and card has not been pre-
viously replaced

step 33

failed and card has been re-
placed

step 36

33 Go to the correct procedure in the *Card Replacement Procedures*. Replace the WLC that has faults. Notify operating company personnel the card must change. Go to step 32 after the card replacement.

34 To query the LCM, to make sure that faults are not present, type

>QUERYPM FLT

and press the Enter key.

Example of a MAP response:

No faults exist:
LCM UNIT 0 Inservice:
LCM UNIT 1 Inservice:

If the alarm condition

Do

clears

step 37

remains

step 36

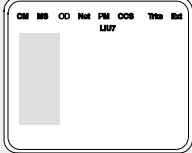
35 Go to the correct procedure in *Card Replacement Procedures* to replace the card that has faults. Notify operating company personnel the card must change. After the BIC card replacement, go to step 28.

36 For additional help, contact the next level of support.

37 The procedure is complete. If other alarms appear, use the correct procedures to clear the alarms.

PM talk battery
minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	nTBAT	.	.	.	.	.

Indication

The alarm code TBAT under the peripheral module (PM) subsystem header indicates a talk battery (TBAT) alarm. The absence of *C* or M under the TBAT indicates a minor alarm. The number (*n*) before TBAT indicates the number of line concentrating modules (LCM) with a minor alarm.

Meaning

The alarm code indicates the number (*n*) of LCMs in the in service trouble (ISTb) state that cannot test the talk battery.

Note: References to LCM apply to XLCM and LCME peripheral module types.

Result

The ISTb condition does not directly affect service. The ISTb condition indicates that testing of the talk battery is not possible for the number (*n*) of LCMs indicated.

Talk battery failure interrupts service.

Common procedures

This procedure refers to procedure “How to monitor system maintenance”.

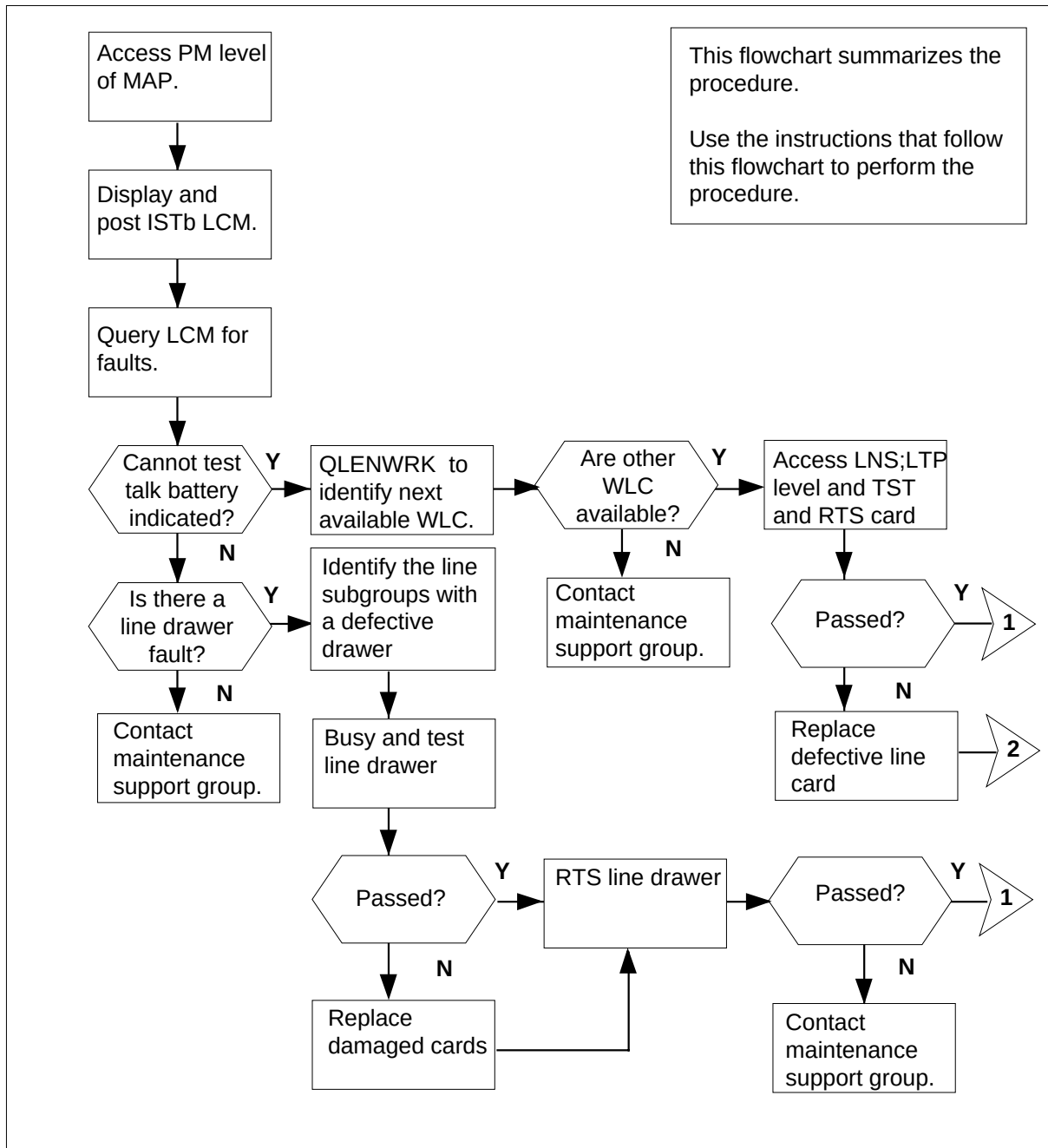
Do not go to the common procedures unless the step-action procedure directs you to the common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

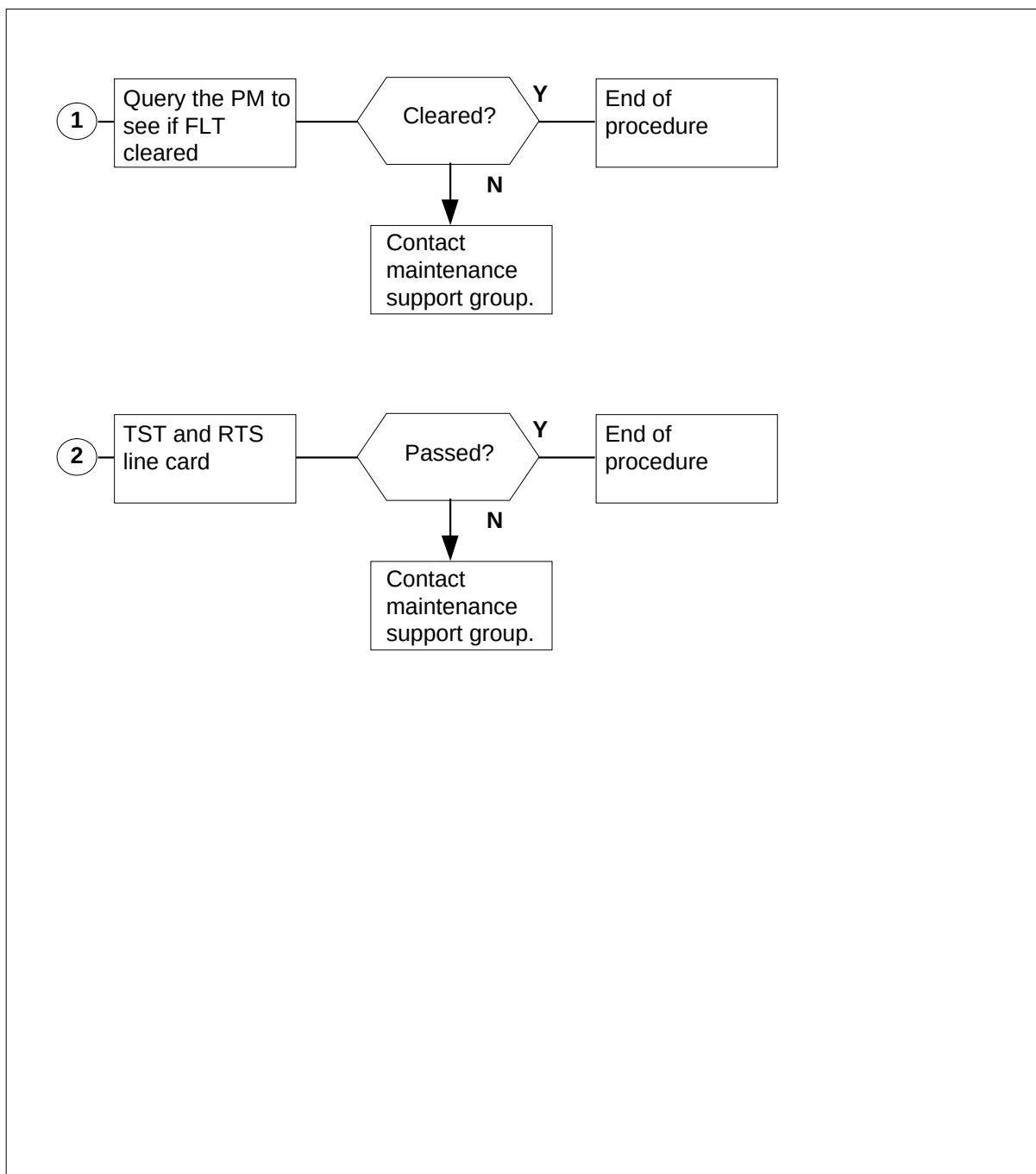
PM talk battery minor (continued)

Summary of Clearing a PM talk battery minor alarm



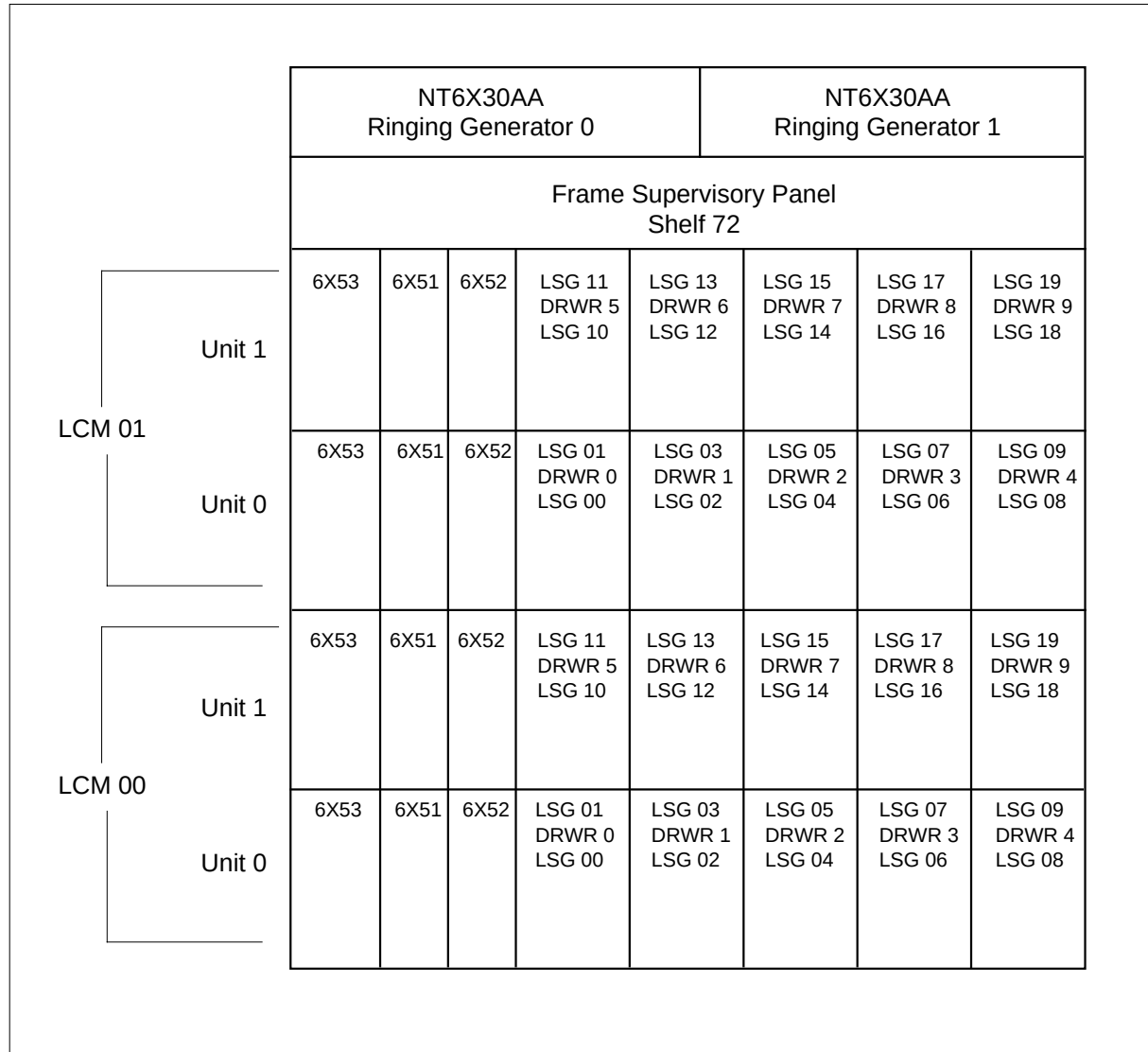
PM talk battery minor (continued)

Summary of Clearing a PM talk battery minor alarm (continued)



PM talk battery minor (continued)

LCE frame



PM talk battery
minor (continued)

Clearing a PM talk battery minor alarm

ATTENTION

You only enter this procedure from a step in the PM system level alarm clearing procedure. You enter from the step that identified a PM alarm for a fault in an LCM talk battery.

At the MAP terminal

- 1 To access the PM level of the MAP display, type
>MAPCI;MTC;PM
and press the Enter key.

Example of a MAP response:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	1	2	0	0	1	12
If an audible				Do		
rings				step 2		
does not ring				step 3		

- 2 To silence the alarm, type
>SIL
and press the Enter key.
- 3 To display all ISTb LCM(E)s, type
>DISP STATE ISTB LCM
and press the Enter key.

or

>DISP STATE ISTB LCME
and press the Enter key.

Example an LCM MAP response:
ISTb LCM :HOST 00 0

Note 1: If more than one LCM(E) is ISTb, select an LCM(E) to work on.

Note 2: Record the name and number of the ISTb LCM(E)s.

- 4 To post the LCM(E) with the alarm condition, type
>POST LCM(E) site frame lcm(e)

PM talk battery minor (continued)

and press the Enter key.

where

site

is the site name of the LCM(E) (alphanumeric)

frame

is the frame number that houses the LCM(E) (0 to 511)

lcm(e)

is the number of the LCM or LCME that you recorded in step 3

Example of an LCM MAP response:

```
LCM HOST 00 0 ISTb Links OOS: Cside 0 Pside 0Unit 0: ISTb /RG:0Unit
1: ISTb /RG:0 11 11 11 11 11 RG: Pref 0 InSvDrwr:
01 23 45 67 89 01 23 45 67 89 Stby 1 InSv .. SS .. .. .. .. ..
```

If a maintenance flag	Do
appears next to either unit	step 5
does not appear	step 6

- 5 Go to the common procedure "How to monitor system maintenance" in this document. Complete the procedure and return to this step.

If the LCM minor alarm	Do
remains	step 6
clears	step 28

- 6 To determine the fault indicators, type

>QUERYPM FLT

and press the Enter key.

Example of an LCM MAP response:

```
Node inservice troubles exist:
One or both Units inservice trouble
LCM UNIT 0 Inservice Troubles Exist:
Cannot test Talk Battery
LCM UNIT 1 Inservice Troubles Exist:
Cannot test Talk Battery
```

- 7 To access the logutil utility subsystem and open the PM179 log buffer, type

>LOGUTIL;OPEN PM 179

and press the Enter key.

- 8 To locate the line card where the system detected the loss of talk battery, type

>BACK

and press the Enter key.

PM talk battery minor (continued)

Example of a MAP response:

```
* PM179 NOV30 18:57:45 5148 TBL  PM HW EXCEPTION REPORT
LCM HOST 00 0  Unit 0 Self Test Fail - Talk Battery Problem
Cannot test Talk Battery: shelf 04 no WLC provisioned
```

Note: Repeat this command until you find the log or reach the end of buffer.

- 9 To quit the logutil utility, type

>QUIT

and press the Enter key.

- 10 A number of WLCs are available to the posted LCM for a test of the talk battery. To query the DMS system for the number, type

>QLENWRK r lcm to_lcm ALL nlcc \$ d

and press the Enter key.

where

r

is the range of LCMs you must check

lcm

is the number of the first LCM number you query

nlcc

is the nil line class code

\$

is the end of entries

d

is a request for a detailed report

Example QLENWRK R HOST 0 0 HOST 0 0 ALL NLCC \$ D

- 11 Examine the report for any WLCs available to test the talk battery.

If WLCs	Do
are available	step 13
are not available	step 12

- 12 Contact next level of support to have a WLC added to the LCM for a test of the talk battery.

- 13 Examine the MAP display screen and determine the state of the LCM line drawers (LD).

If LDs	Do
are S (SysB)	step 14
are M (ManB)	step 15

PM talk battery minor (continued)

	If LDs	Do
	are 0 (OFFL)	step 14
- 14** To make the line drawer (LD) busy, type
>BSY DRWR lsg_no
 and press the Enter key.
where
lsg_no
 is the line subgroup (LSG) (0 to 19 for an LCM and 0 to 15 for an LCME).
- Example of an LCM and LCME MAP responses:*
- LCM**
- ```
LCM HOST 00 0 ISTb Links 00S: Cside 0 Pside 0
Unit0: ISTb /RG: 1
Unit1: ISTb /RG: 1
11 11 11 11 11 RG: Pref 1 InSv
Drwr: 01 23 45 67 89 01 23 45 67 89 Stby 0 InSv
.. .. S.
bsy drwr 4
LCM HOST 00 0 Drwr 4 will be taken out of service
Please confirm ("YES", "Y", "NO", or "N"):
```
- or**
- LCME**
- ```
LCME HOST 01 1 ISTb Links 00S: Cside 0
Unit0: ISTb /RG: 1
Unit1: ISTb /RG: 1
11 11 11 RG: Pref 1 InSv
Drwr: 01 23 45 67 89 01 23 45 Stby 0 InSv
.. .. SS .. .. .. ..
bsy drwr 4
WARNING ... this action will affect both drwrs 4 and 5
LCME HOST 01 1 Drwr 4 will be taken out of service
Please confirm ("YES", "Y", "NO", or "N"):
```
- 15** To test the ManB line drawer, type
>TST DRWR lsg_no
 and press the Enter key.
where
lsg_no
 is the number of the LSG (0 to 19 for an LCM and 0 to 15 for an LCME).

PM talk battery minor (continued)

Note: Repeat this command for the other LSG in the LCM line drawer.

	If the TST command	Do
	passes	step 16
	fails and card has not been previously replaced	step 26
	fails and card has been replaced	step 27
16	To return the LD to service, type >RTS DRWR lsg_no and press the Enter key. lsg_no is the number of the LSG (0 to 19 for an LCM and 0 to 15 for an LCME).	
	If the RTS command	Do
	passes	step 17
	fails	step 27
17	To determine if the fault cleared, type >QUERYPM FLT and press the Enter key.	
	If the LCM minor alarm	Do
	remains	step 18
	clears	step 28
18	Access the LTP level of the MAP. Post the world line card (WLC), identified in step 12, as available to test the talk battery. To post the WLC, type >LNS;LTP;POST L site frame lcm(e) lsg circuit and press the Enter key. site is the site name of the LCM(E) (alphanumeric) frame is the frame number of the LCE frame (0 to 511) lcm(e) is the number of the LCM or LCME lsg is the number (0 to 19) of the LSG circuit is the number (0 to 31) of the line circuit card	

PM talk battery minor (continued)

- 19** Examine the MAP for the state of the WLC

Example of a MAP response:

```
LCC PTY RNG .....LEN..... DN STA F S LTA TE RESULT
1FR      HOST 00 0 03 03      NO DIR SB
```

If the line circuit card state	Do
is MB	step 20
is SB	step 21
is OFFL	step 21
is Cut	step 21
is INB	step 21
is NEQ	step 27

- 20** To return the WLC to service, type
>RTS and press the Enter key.

If the RTS command	Do
passed	step 28
failed	step 22

- 21** To make the WLC busy, type
>BSY
and press the Enter key.

- 22** To test the WLC, type
>DIAG
and press the Enter key.

If diagnostics	Do
pass	step 23
fails and card has not been previously replaced	step 25
fails and card has been replaced	step 27

- 23** To return the WLC to service, type
>RTS

PM talk battery minor (end)

and press the Enter key.

If the RTS command	Do
passed	step 28
failed	step 27

- 24** Access the PM level of the MAP display and query the PM to make sure that the alarm cleared. To access the PM level of the MAP, type

>QUIT;PM;POST LCM(E) site frame lcm(e);QUERYPM FLT

and press the Enter key.

where

site

is the site name of the LCM(E) (alphanumeric)

frame

is the frame number that houses the LCM(E) (0 to 511)

lcm(e)

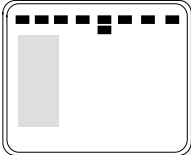
is the number of the LCM or LCME, as recorded in step 3

If the minor alarm	Do
clears	step 28
remains	step 27

- 25** Go to the correct procedure in *Card Replacement Procedures*. Replace the WLC. Go to step 23.
- 26** Go to the correct procedure in *Card Replacement Procedures*. Return to step 15 after you replace the card.
- 27** For additional help, contact the next level of support.
- 28** The procedure is complete.
- If additional alarms appear, proceed to the correct procedure to clear the alarms.

PM TMS critical

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	1TMS	.	.	.		.
					C					

Indication

A TMS, a number, and a *C* appear under the PM header of the alarm banner. The number precedes the TMS. The *C* follows the TMS. These items indicate a TOPS message switch (TMS) critical alarm. The number that precedes the TMS indicates the number of TMSs the alarm affects. The alarm banner is at the MTC level of the MAP display. An alarm banner with a TMS critical alarm appears in the preceding figure.

This procedure applies to all TOPS office configurations for the TMS, which follow:

- The TMS connects to an integrated TPC, which supports up to four integrated MP positions.
- The TMS connects to a virtual TPC, which supports MPX-IWS positions on a token ring.

Meaning

The TMS is system busy (SysB) or C-side busy (CBsy). A TMS is system busy if both units are system busy. A TMS is system busy if one unit is system busy and the other unit is manual busy (ManB). A TMS is C-side busy if both units are C-side busy.

Result

Service does not continue when a TMS is system busy or C-side busy.

Common procedures

This document refers to the following common procedures:

- Clearing PM C-side links
- Monitoring system maintenance

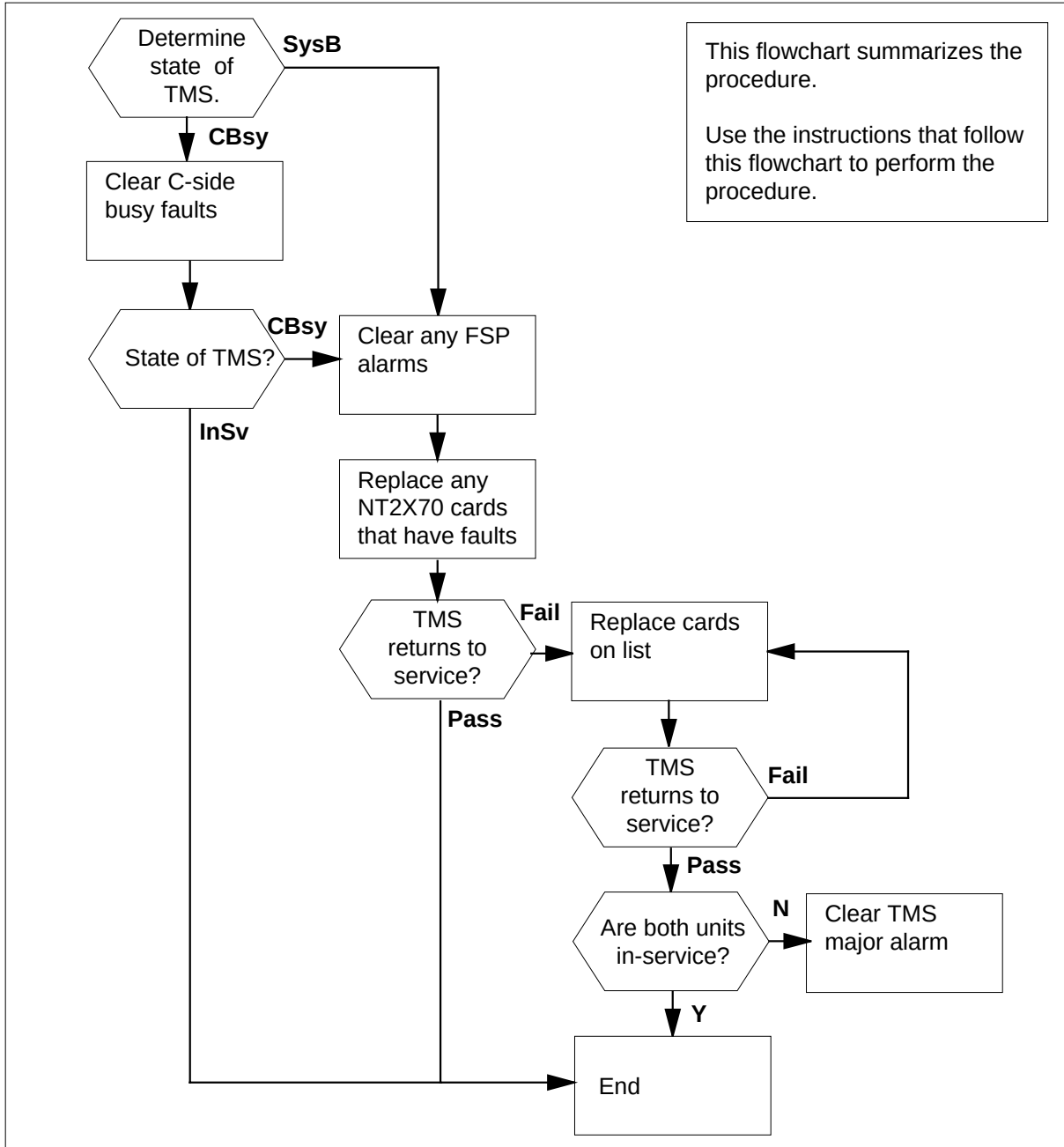
Go to the common procedures when the step-action procedure directs you to go.

PM TMS critical (continued)

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to clear the alarm.

Summary of clearing a PM TMS critical alarm



PM TMS critical (continued)

Layout of TMS shelf

	27
	26
NT2X70 Power converter card	25
NT0X50 Filler pack	24
NT0X50 Filler pack	23
NT6X40 DS30 C-interface card	22
NT6X41 Speech bus formatter card	21
NT6X42 Channel supervision message card	20
NT0X50 Filler pack	19
NT6X69 Message and tone card	18
NT0X50 Filler pack	17
NT6X92 Universal tone receiver card	16
NT6X92 Universal tone receiver card	15
NT6X44 Time switch card	14
NT7X05 Peripheral/Remote loader	13
NTMX77 Unified Processor (UP)	12
NT0X50 Filler pack	11
NT0X50 Filler pack	10
NT0X50 Filler pack	09
NT0X50 Filler pack	08
NT0X50 Filler pack	07
NT0X50 Filler pack	06
NT6X50 DS1 Interface	05
NT6X50 DS1 Interface	04
NT6X50 DS1 Interface	03
NT6X50 DS1 Interface	02
NT6X50 DS1 Interface	01

PM TMS critical (continued)

Clearing a PM TMS critical alarm

At the MAP display

- 1 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP display response:

PM	SysB	ManB	OffL	CBsy	ISTb	InSv
	1	3	5	7	6	12
If			Do			
an audible alarm is ringing			step 2			
the *C* indicator at the alarm banner is flashing			step 2			

- 2 To silence the alarm, type

>SIL

and press the Enter key.

- 3 To determine if system-busy or C-side busy TMSs causes the critical alarm, type

>STATUS

and press the Enter key.

Example of a MAP display response:

PM	SysB	ManB	OffL	CBsy	ISTb	InSv
	2	0	0	2	0	25
TM8	0	0	0	0	0	2
MTM	0	0	0	0	0	3
LGC	1	0	0	0	0	3
LCM	0	0	0	2	0	0
TMS	1	0	0	0	0	1
LIM	0	0	0	0	0	1
LIU7	0	0	0	0	0	1
FRIU	0	0	0	0	0	1
DTC	0	0	0	0	0	1
LCME	0	0	0	0	0	1
						MORE . . .

PM TMS critical (continued)

Note: If TMSs are SysB and CBsy, work on the SysB TMSs first.

- 4 To display every CBsy or SysB TMSs, type

>DISP STATE state TMS

and press the Enter key.

where

state

is CBsy or SysB, as you determined in step 2

Example of a MAP display response:

SysB TMS : 0

Note: If multiple TMSs are CBsy or SysB, select a TMS on which to work. Record the TMSs number.

If you	Do
recover a CBsy TMS	step 5
recover a SysB TMS	step 6

- 5 Go to the common procedure "Clearing PM C-side faults" in this document. Complete the procedure. Return to this step.

If	Do
the TMS remains CBsy	Treat the CBsy TMS as a SysB TMS. Go to step 23.
the TMS changes to SysB	step 6
one TMS unit returns to service	step 43
both TMS units return to service	step 45

- 6 Check the EXT header of the alarm banner for an FSP alarm.

If an FSP alarm	Do
is present	step 7
is not present	step 23

- 7 To locate the FSP alarm, type

>EXT; LIST FSP

and press the Enter key.

Example of a MAP display response:

FSPAISD

In this example, the alarm is an FSP alarm on Aisle D.

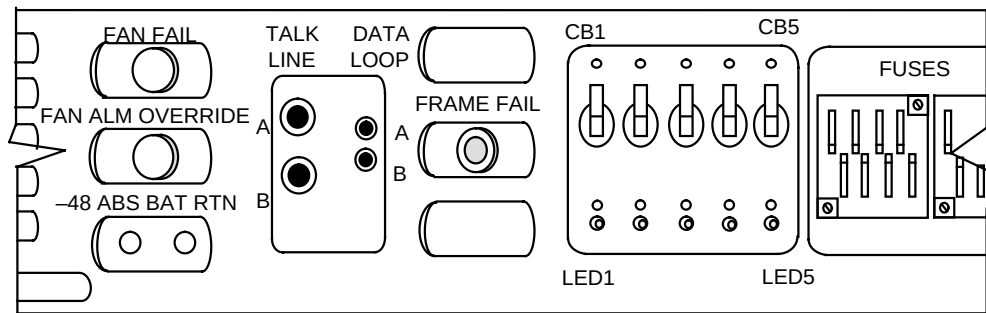
PM TMS critical (continued)

At the equipment aisle

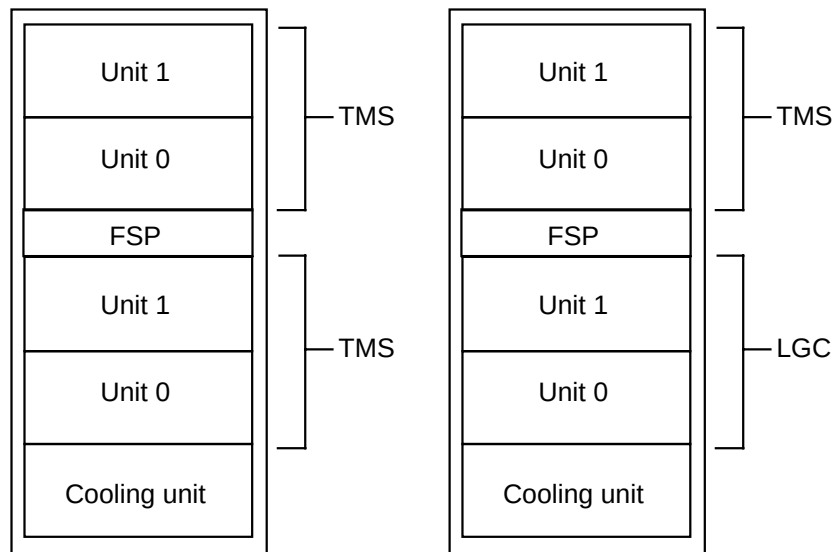
- 8 Go to the aisle that step 7 identifies. The system illuminates the end aisle alarm.

At the equipment frame

- 9 Check the frame fail lamp on the frame supervisory panel (FSP) of each frame to identify the frame with the FSP alarm. The frame with the FSP alarm has an illuminated frame fail lamp. An FSP with an illuminated fail lamp appears in the following figure.

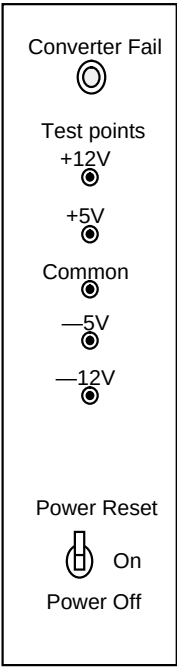


- 10 This alarm is a TMS critical alarm. The frame is a digital trunk equipment (DTE) frame or a line group equipment (LGE) frame. Identify the PMs in the frame. See the following figure for help.



- 11 Check the Converter Fail LED on each NT2X70 power converter card in the frame. See the figure "Layout of TMS shelf" for assistance in locating this card. See the following figure of a NT2X70AE card for assistance in checking the Converter Fail LED.

PM TMS
critical (continued)



If any LEDs	Do
are lit	step 12
are not lit	step 23

12 Note the TMS with the LED lights on.

At the MAP display

13

ATTENTION

Record the Active unit for use later in this procedure. When the TMS is manually-busied, unit activity does not appear. The active unit is 0 or 1.

To post the system-busy TMS and identify the location of the TMS, type
>PM; POST TMS tms_no;QUERYPM
and press the Enter key.
where

PM TMS

critical (continued)

tms_no

is the number of the TMS you recorded in step 4. The range of the number is 0 to 255.

Example of a MAP display response:

```
TMS      0          SysB Links_00S: CSide 32, PSide 0
Unit0:    Act      SysB
Unit1:    Inact    SysB
```

```
PM Type: TMS PM No.: 0 PM Int. No: 0 Node_No.: 21
PMs Equipped: 38 Loadname: ECL06BB
Unit 0 is patched
Unit 1 is patched
WARM SWACT is supported but not possible: node redundancy lost.
TMS 0 is included in the REX schedule.
REX on TMS 0 has not been performed.
Node Status: {OK, FALSE}
Unit 0 Act, Status: {OK, FALSE}
Unit 1 Inact, Status: {OK, FALSE}
Site Flr RPos Bay_id Shf Description Slot EqPEC
HOST 02 D01 DTE 00 51 TMS : 000 6X02NA
```

	If a Mtce indicator	Do
	appears next to one unit	step 14
	does not appear	step 15
14	Go the common procedure "Monitoring system maintenance" in this document. Complete this procedure. Return to this step.	
	If the critical alarm	Do
	remains	step 15
	changes	step 43
	clears	step 45
15	Determine if the TMS is the TMS you identified in step 12.	
	If the TMS	Do
	is different	step 33
	is the same	step 16
16	To busy the TMS, type >BSY PM and press the Enter key.	
17	Choose the active unit on which to work.	

PM TMS critical (continued)

At the equipment frame

- 18** Change the NT2X70 card. Refer to the correct procedure in *Card Replacement Procedures*. Complete this procedure. Return to this step.

At the MAP display

- 19** The peripheral/remote loader-16 card (NT7X05) allows local loading of XPM data. This action reduces recovery time. To check if the NT7X05 card is provisioned, type

>QUERYPM FILES

and press the Enter key.

Example of a MAP display:

```

      CM   MS   IOD   Net   PM   CCS   LNS   Trks   Ext   APPL
      .    .    .    .    1TMS
                   *C*

TMS
0 Quit      PM      2      0      2      0      2      25
2 Post      TMS     0      0      0      0      1      10
3 ListSet
4           TMS     0 ISTb  Links_00S: CSide 0, PSide 0
5 TRNSL_    Unit 0:  ManB
6 TST_      Unit 1:  ManB
7 BSY_      QueryPM files
8 RTS_      Unit 0:
9 OffL      NT7X05 load File:[ECL06BD] ← (NT7X05 load file name)
10 LoadPM_   NT7X05 Image File:ECL06BD
11 Disp_     NT7X05 Image Timestamp: 1996/01/17 16:01:52.944 WED.
12 Next_     Unit 1:
13 SwAct     NT7X05 load File: ECL06BD
14 QueryPM   NT7X05 Image File:ECL06BD
15           NT7X05 Image Timestamp: 1996/01/17 16:04:52.944 WED.
16
17 Perform
18

```

Note: If the NT7X05 card is not provisioned, the MAP response is: NT7X05 not datafilled. QueryPm files invalid

If the NT7X05 card	Do
is provisioned	step 20
is not provisioned	step 22

- 20** To load the TMS from the local Image, type

>LOADPM PM LOCAL IMAGE

PM TMS**critical** (continued)

and press the Enter key.

If the load	Do
passed	step 34
failed	step 21

21**DANGER****Possible service interruption**

The LOCAL LOADFILE option of the LOADPM command has a parameter of [<file> string]. The LOADPM command does not patch the loadfile when you use this parameter. Do not use this parameter unless you need to use the NOPATCH option of the loadfile.

To load the TMS from the local loadfile, type

>LOADPM PM LOCAL LOADFILE

and press the Enter key.

If the load	Do
passed	step 34
failed	step 22

22

To load the TMS from the CM, type

>LOADPM PM

and press the Enter key.

If the load	Do
failed, and the system generates a card list	step 35
failed, and the system does not generate a card list	step 44
passed	step 34

23

To post the TMS, type

>POST TMS tms_no

and press the Enter key.

PM TMS

critical (continued)

where

tms_no

is the number as you recorded in step 4. The number can be from 0 to 255.

Example of a MAP display response:

```
TMS      0          SysB  Links_00S:  CSide 32, PSide 0
Unit0:    Act      SysB
Unit1:    Inact    SysB
```

	If a Mtce indicator	Do
	appears next to one unit	step 24
	does not appear	step 25
24	Go the common procedure "Monitoring system maintenance" in this document. Complete this procedure. Return to this step.	
	If the critical alarm	Do
	remains	step 25
	changes	step 43
	clears	step 45
25	To query the TMS for fault indications, type: >QUERYPM FLT and press the Enter key. <i>Example of a MAP display response:</i> Activity dropped	
26	Record the MAP response.	
	If the MAP response	Do
	is SWACT In Progress	step 27
	is Load Corruption	step 28
	is Load Failed	step 28
	is Distributed Data Loading Failed	step 28
	is Activity dropped	step 28
	is other than listed here	step 33

PM TMS**critical** (continued)

- 27 The system switches activity between the two TMS units to attempt to recover the TMS. Wait until system maintenance is complete.

If	Do
a TMS unit does not return to service	step 33
one TMS unit returns to service	step 43
both TMS units return to service	step 45

- 28 To busy the TMS, type

>BSY PM

and press the Enter key.

- 29 The peripheral/remote loader-16 card (NT7X05) allows local loading of XPM data. Local loading reduces recovery time. To check if the NT7X05 card is provisioned, type

>QUERYPM FILES

and press the Enter key.

Example of a MAP display:

```

      CM   MS   IOD   Net   PM   CCS   LNS   Trks   Ext   APPL
      .    .    .    .    1TMS .    .    .    .    .
                *C*

TMS
0 Quit      PM      2      0      2      0      2      25
2 Post      TMS     0      0      0      0      1      10
3 ListSet

4           TMS     0 ISTb Links_00S: CSide 0, PSide 0
5 TRNSL_    Unit 0:  ManB
6 TST_      Unit 1:  ManB
7 BSY_      QueryPM files
8 RTS_      Unit 0:
9 OffL      NT7X05 load File: [ECL06BD] ← (NT7X05 load file name)
10 LoadPM_  NT7X05 Image File: ECL06BD
11 Disp_    NT7X05 Image Timestamp: 1996/01/17 16:01:52.944 WED.
12 Next_    Unit 1:
13 SwAct    NT7X05 load File: ECL06BD
14 QueryPM  NT7X05 Image File: ECL06BD
15          NT7X05 Image Timestamp: 1996/01/17 16:04:52.944 WED.
16
17 Perform
18

```

Note: If the NT7X05 card is not provisioned, the MAP response is:

PM TMS critical (continued)

NT7X05 not datafilled. QueryPm files invalid

If the NT7X05 card	Do
is provisioned	step 30
is not provisioned	step 32

- 30** To load the TMS from the local Image, type
>LOADPM PM LOCAL IMAGE
 and press the Enter key.

If the load	Do
passed	step 34
failed	step 31

31



DANGER

Possible service interruption

The LOCAL LOADFILE option of the LOADPM command has a parameter of [<file> string]. The LOADPM command does not patch the loadfile when you use this parameter. Do not use this parameter unless you need to use the NOPATCH option of the loadfile.

To load the TMS from the local loadfile, type
>LOADPM PM LOCAL LOADFILE
 and press the Enter key.

If the load	Do
passed	step 34
failed	step 32

- 32** To load the TMS, type
>LOADPM PM
 and press the Enter key.

If the load	Do
failed, and the system generates a card list	step 35

PM TMS**critical** (continued)

	If the load	Do
	failed, and the system does not generate a card list	step 44
	passed	step 34
33	To busy the TMS, type >BSY PM and press the Enter key.	
34	To return the TMS to service, type >RTS PM and press the Enter key.	
	If	Do
	the TMS failed to return to service and the system generates a card list	step 35
	one TMS unit returns to service	step 43
	both TMS units return to service	step 45

At the equipment frame

- 35** Replace the first card on the list. Refer to the correct procedure in *Card Replacement Procedures*. See the figure "Layout of TMS shelf" for assistance in locating this card.
- The MAP response in step 26 can help you isolate the card that has faults. See the following table for support.

(Sheet 1 of 2)

MAP response	Suspect cards
PM Audit	NT6X45, NT6X46, NT6X47, NT6X69, NTMX77
Activity Dropped	NT6X45, NT6X46, NT6X47, NTMX77
No WAI Received	NT6X40, NT6X41, NT6X42, NT6X44, NT6X45, NT6X46, NT6X47, NT6X69, NTMX77

PM TMS critical (continued)

(Sheet 2 of 2)

MAP response	Suspect cards
LINK Audit	NT6X40, NT6X41, NT6X42, NT6X44, NT6X45, NT6X46, NT6X47, NT6X69, NTMX77
Load Corruption	NT6X42, NT6X45, NT6X46, NT6X47, NTMX77
Load Failed	NT6X45, NT6X46, NT6X47, NTMX77
Distributed Data Loading Failed	NT6X45, NT6X46, NT6X47, NT6X69, NTMX77

If you	Do
replace an NT6X42, NT6X45, NT6X46, NT6X47, or NTMX77 card	step 36
replace any other card	step 41

At the MAP display

- 36** To load the active TMS unit from the local image on the NT7X05 card, type
>LOADPM UNIT unit_no LOCAL IMAGE
 and press the Enter key.

where

unit_no
 is the number of the active TMS unit.

If the load	Do
passed	step 41
failed	step 37

PM TMS
critical (continued)

37



DANGER
Possible service interruption
The LOCAL LOADFILE option of the LOADPM command has a parameter of [<file> string}. The LOADPM command does not patch the loadfile when you use this parameter. Do not use this parameter unless you need to use the NOPATCH option of the loadfile.

To load the active TMS unit from the local loadfile on the NT7X05 card, type
>LOADPM UNIT unit_no LOCAL LOADFILE
and press the Enter key.

where
 unit_no
 is the number of the active TMS unit.

If the load	Do
passed	step 41
failed	step 38

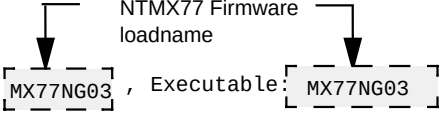
- 38** To load the active TMS unit from the CM, type
>LOADPM UNIT unit_no
and press the Enter key.
where
 unit_no
 is the number of the active TMS unit you recorded in step 13.
- 39** To query the TMS counters for the firmware load on the NTMX77, type
>QUERYPM CNTRS
and press the Enter key.
Example of a MAP display:

PM TMS critical (continued)

```

Unsolicited MSG limit = 250, Unit 0 = 0, Unit 1 = 0
Unit 0:
Ram Load: ECL06BB
EProm Version: AB02
EEPROM Load: Loadable: MX77NG03, Executable: MX77NG03
UP:MX77AA
Unit 1:
Ram Load: ECL06BB
EProm Version: AB02
EEPROM Load: Loadable: [MX77NG03], Executable: [MX77NG03]
UP:MX77AA

```



If firmware	Do
is correct	step 41
is not correct	step 40

- 40** To load the NTMX77 firmware, type
>LOADPM UNIT unit_no CC FIRMWARE
 and press the Enter key.

where

unit_no
 is the number of the active TMS unit you recorded in step13

If load	Do
passes	step 41
fails	step 44

- 41** To return the active TMS unit to service, type
>RTS UNIT unit_no
 and press the Enter key.

where

unit_no
 is the number of the active TMS unit you recorded in step 13

If the unit	Do
does not return to service (RTS) and you did not replace every card on the list of cards that have faults	step 42
does not RTS and you replaced every card on the list of cards that have faults	step 44
fails and the system does not generate a card list	step 44

PM TMS
critical (end)

If the unit	Do
RTS	step 43

At the equipment frame

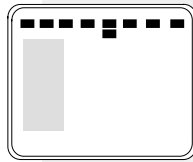
- 42** Replace the next card on the card list. Refer to the correct procedure in *Card Replacement Procedures*. See the figure "Layout of TMS shelf" for assistance in locating this card.

If you	Do
replace an NTMX77 or NT6X42 card	step 36
replace any other cards	step 41

- 43** The TMS critical alarm changed to another type of alarm. See the correct procedure in this document to clear the alarm. Go to step 45 .
- 44** You require additional maintenance action to clear this alarm. Contact the next level of support. Describe in detail the steps you performed in attempting to clear this alarm.
- 45** The procedure is complete.

PM TMS major

Alarm display



CM	MS	IOD	Net	PM	Lns	Trks	Ext	APPL
.	.	.	.	n TMS	.	.	.	.
				M				

Indication

An n TOPS message switch (TMS) indication appears under the peripheral module (PM) subsystem header at the maintenance level of the MAP. The n TMS indication indicates a TMS alarm. An M indication under the n TMS indicates a major alarm.

This procedure applies to all TOPS office configurations for the TMS, which follow:

- The TMS connects to an integrated TPC, which supports up to four integrated MP positions.
- The TMS connects to a virtual TPC, which supports MPX-IWS positions on a token ring.

Meaning

The n indicates the number of TMSs in the state of in-service trouble.

Result

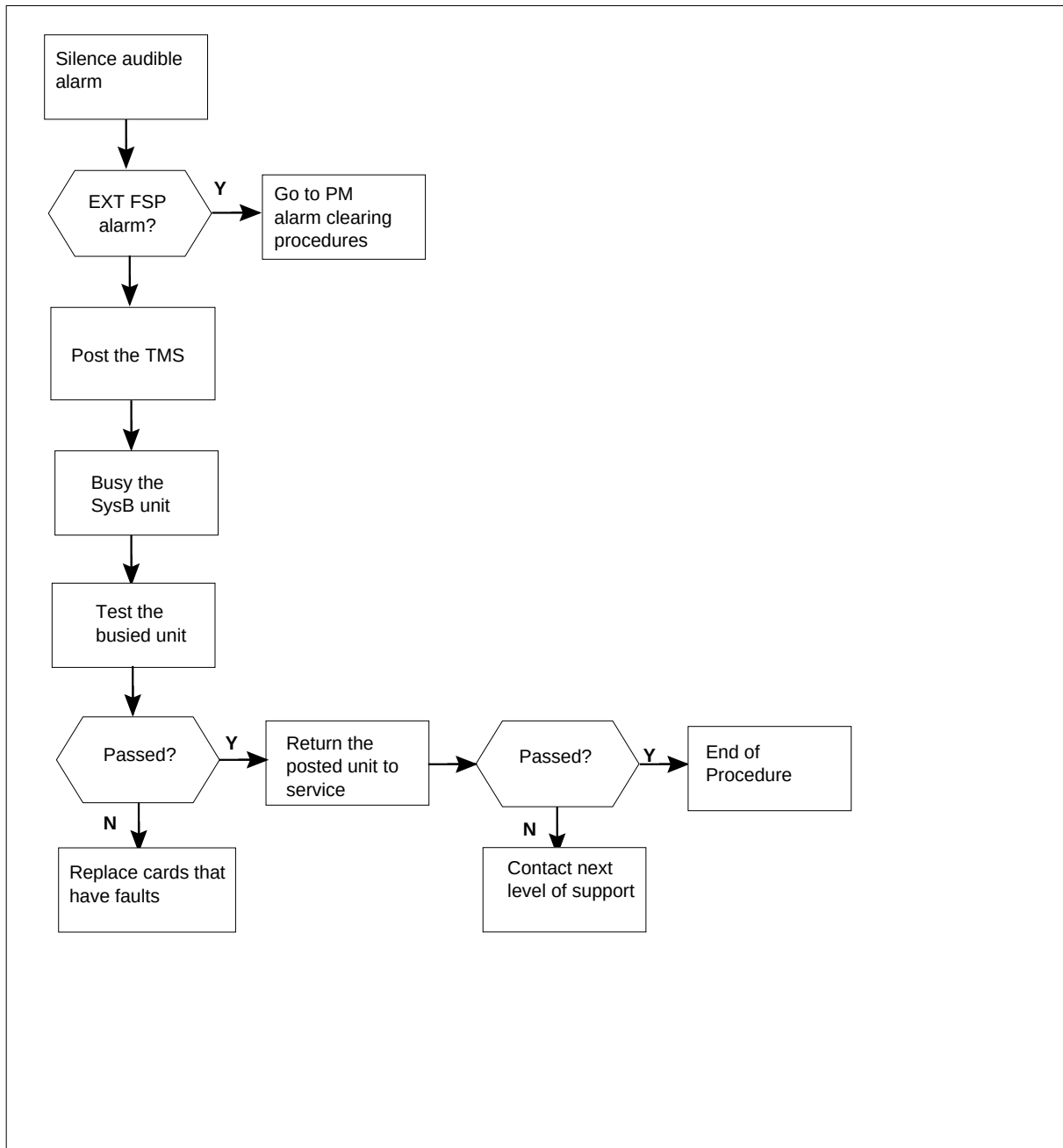
The TMS is a redundant unit. A TMS major alarm does not affect call handling because of this condition. If a fault occurs in the remaining unit, the system can lose the ability to handle a call. You must clear this alarm as soon as possible to prevent the loss of call handling.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM TMS major (continued)

Summary of clearing a PM TMS major alarm



PM TMS
major (continued)

Clearing a PM TMS major alarm***At the MAP terminal*****1****ATTENTION**

Enter this procedure from a PM system level alarm clearing procedure step.
This step identified a fault associated with a TMS.

To silence the audible alarm, type

>MAPCI ; MTC ; SIL

and press the ENTER key.

2 A power problem can cause this alarm. Check the EXT subsystem level for an FSP major alarm.

If an EXT FSP major alarm**Do**

is not present

step 3

is present and caused the FSP alarm

Follow EXT subsystem alarm clearing procedures. If TMS alarm is present after power problem cleared, go to appropriate alarm clearing procedure.

3 To access the PM level of the MAP and determine the status of the TMS units, type

>PM ; POST TMS

and press the ENTER key.

Note: The status can be ISTb.

PM TMS major (continued)

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TMS   .    .    .    .    .
      M
TMS
0  Quit    PM      SysB  ManB  OffL  CBsy  ISTb  InSv
2  Post_   TMS     0      0      0      0      1     130
3  Listset
4          TMS     Links_OOS: CSide , PSide
5  Trnsl_  Unit  0:
6  Tst_    Unit  1:
7  Bsy_    POST:
8  RTS_    No PM posted
9  OffL
10 LoadPM_
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16
17 PERFORM
18 ISG

```

Note: The number 1 appears under the ISTb header of this alarm.

- 4 To post the in-service trouble (ISTb) TMS, type

>POST ISTB

and press the ENTER key.

On the TMS MAP display, examine the status information for the TMS units. The status information appears in the highlighted area of the following example

Unit 0 or unit1 is SysB, record the unit number.

PM TMS major (continued)

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TMS   .    .    .    .    .
      M
TMS
0  Quit      PM      0      0      0      0      1      130
2  Post_     TMS     0      0      0      0      1      4
3  Listset
4          TMS 0  ISTb Links_00S: CSide 1, PSide 0
5  Trnsl_   Unit 0: InAct SysB Mtce
6  Tst_     Unit 1: Act   InSv
7  Bsy_
8  RTS_
9  OffL
10 LoadPM_
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16
17 PERFORM
18 ISG

```

Note: To stop system maintenance activity, type

>ABTK

and press the ENTER key.

Note: The number 1 appears under the ISTb header of this alarm.

- 5 To determine unit fault, type

>QUERYPM FLT

and press the ENTER key.

PM TMS
major (continued)

Example of a MAP display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	n TMS	.	.	.	.	.
				M					
	TMS			SysB	ManB	OffL	CBsy	ISTb	InSv
0	Quit	PM	0	0	0	0	1	130	
2	Post_	TMS	0	0	0	0	1	4	
3	Listset								
4		TMS	0	ISTb	Links_00S:	CSide	1,	PSide	0
5	Trnsl_	Unit 0:		InAct	SysB (or	CBsy	or	ManB)	Mtce
6	Tst_	Unit 1:		Act	InSv				
7	Bsy_								
8	RTS_								
9	OffL								
10	LoadPM_	QueryPM	FLT						
11	Disp_	Inactive unit	out of service						
12	Next	CSide	Links out of service						
13	SwAct	Unit 0							
14	QueryPM	System busy reason:	Not loaded since power up						
15	DCH	Unit 1							
16		no fault exists							
17	PERFORM								
18	ISG								

Note: The number 1 appears under the ISTb header for this alarm.

- 6
- To busy the SysB unit, type
>BSY UNIT n
and press the ENTER key.
where
n
is the unit number you found in step 4.

PM TMS major (continued)

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TMS   .    .    .    .
      M
TMS
0 Quit      PM    1    0    2    0    1    18
2 Post_     TMS   0    0    0    0    1    1
3 Listset
4           TMS  0  ISTb  Links_00S: CSide 0, PSide 0
5 Trnsl_    Unit 0:   InAct ManB
6 Tst_      Unit 1:   Act   InSv
7 Bsy_
8 RTS_      Bsy Unit 0
9 OffL      TMS 0 Unit 0 Bsy Passed
10 LoadPM_
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16
17 PERFORM
18 ISG

```

- 7 To test the posted unit, type

>TST UNIT n

and press the ENTER key.

where

n

is the unit number you found in step 4.

Note the system response. The following MAP response appears when all the tests pass.

Example of a MAP response

```

TMS n  Unit n  Non-Destructive ROM test and
        OSvce tests will be run
TMS n  Tst Passed

```

The following is an example of a MAP response when a test fails.

PM TMS

major (continued)

Example of a MAP display

```

TMS n    Unit n    Non-Destructive ROM test and
              OSvce tests will be run
TMS n    Tst Failed
              Diagnostic TESTALL failed.
              ROM Level Test Failed
              Replace the Cards in the Card List
              and applicable Paddleboards (i.e. 6x12) :
Site Flr  RPos  Bay_id  Shf  Description  Slot  EqPEC
HOST   00   D006  LTEI 00  32    TMS : 000   18    6Xnn
HOST   00   D006  LTEI 00  32    TMS : 000   21    6Xnn
  
```

	If a test	Do
	passes	step 15
	fails and the system generates a card list that has faults	step 8
	fails and the system does not generate a card list that has faults	step17
8	Record the product engineering code (PEC) and shelf location of each card in the list. Use the <i>Card Replacement Procedures document</i> to replace the first card on the list. When you return from the card replacement procedure, proceed to the next step.	
9	A replaced card can be one of the following: • NT6X45 • NT6X46 • NT6X47 • BX01 • MX77 • BX02	
	If the replaced card	Do
	appears in the above list	step 10
	does not appear in the above list	step12

PM TMS major (continued)

- 10** If the replaced card is a BX02, access the DCH level of MAP. Post and reload the DCH. Proceed to step 15. If the replaced card is not a BX02, load the affected unit. To load the affected unit, type

>LOADPM UNIT n

and press the ENTER key.

where

n

is the unit number found in step 4.

If the load completes, the following response appears:
LoadPM Passed

- 11** Determine if the reload completes.

If the reload occurs AFTER a card replacement and the reload	Do
completes	step 15
does not complete	step 13

- 12** To test the unit that has faults, type

>tst unit n

and press the ENTER key.

where

n

is the unit number you found in step 4.

Examine the system response and determine if the test passed or failed.

If the test	Do
passes	step 15
fails and the system generates a card list of the cards that have faults	step 13
fails and the system does not generate a card list of the cards that have faults	step 17

PM TMS
major (continued)

- 13** Examine the cards that appear on the card list you received in step 8. Determine if replacement of all the cards on the list occurred.

If replacement of all the cards on the list	Do
occurred	step 20
did not occur	step 14

- 14** Replace the next card on the list of cards that have faults. Refer to *Card Replacement Procedures*. After you replace the card, return to step 9.

- 15** To return the posted unit to service, type

>RTS UNIT n

and press the ENTER key.

where

n

is the unit number you found in step 4.

Note the system response. The following is the system response when the return to service (RTS) is successful:
OK

The status of the TMS unit is INSV or ISTb. The unit remains ISTb for a maximum of 10 min while dynamic data synchronization is in progress. If an alarm is present after 10 min, proceed to the appropriate alarm clearing procedure.

If the RTS fails, the system responds with a failure message. The system can include a card list of the cards that have faults with the message.

If RTS	Do
is successful	step 21
is not successful	step 16

- 16** Examine the cards that appear on the card list you received in step 8. Determine if replacement occurred for all the cards on the list.

If replacement for all cards on list	Do
occurred	step 21
did not occur	step 14

PM TMS major (continued)

At the MAP terminal

- 17** The peripheral/remote loader-16 card (NT7X05) allows local loading of XPM data. This action reduces recovery time. To verify if the NT7X05 card is available, type

>QUERYPM FILES

and press the Enter key.

Example of a MAP display:

CM	MS	IOD	Net	PM 1DTC	CCS	LNS	Trks	Ext	APPL
.	.	.	.	.	.	.	.	.	.
TMS SysB ManB OffL CBsy ISTb InSv									
0	Quit	PM	2	0	2	0	2	25	
2	Post	TMS	0	1	0	0	0	10	
3	ListSet								
4		TMS	0	ManB	Links_00S:	CSide	0,	PSide	0
5	TRNSL_	Unit 0:	Act	ManB					
6	TST_	Unit 1:	InAct	ManB					
7	BSY_								
8	RTS_	QUERYPM files							
9	OffL	Unit 0:							
10	LoadPM_	NT7X05 load File: ETM06BB							
11	Disp_	NT7X05 Image File:							
12	Next_	NT7X05 Image Timestamp: 1996/02/07 13:56:25.663 WED							
13	SwAct								
14	QueryPM	Unit 1:							
15		NT7X05 load File: [ETM06BB]							
16		NT7X05 Image File:							
17	Perform	NT7X05 Image Timestamp: 1996/02/07 13:54:09.523 WED							
18									

(NT7X05 load file name)

If the NT7X05 card is not available, the MAP response is
NT7X05 not datafilled, QueryPm files invalid

If the NT7X05 card	Do
is available	step 18
is not available	step 19

PM TMS major (continued)

18



DANGER

Possible service interruption

The LOCAL LOADFILE option of the LOADPM command has a parameter of [<file> string}. The LOADPM command does not patch the loadfile when you use this parameter. Do not use this parameter unless you need to use the NOPATCH option of the loadfile.

To load the TMS software from the local loadfile, type

>LOADPM PM LOCAL LOADFILE

If LOADPM	Do
passed	step 20
failed	step 19

19

To load the TMS unit that has faults, type

>LOADPM UNIT n

and press the ENTER key.

where

n

is the unit number you found in step 4.

If the load completes, the following response appears

LoadPM Passed

The unit status is in-service (INSV) or in-service trouble (ISTb). If the load fails, a failure message appears.

If reload	Do
completes	step 18
does not complete	step 20

20

To return the posted unit to service, type

>RTS UNIT n

and press the ENTER key.

where

n

is the unit number you found in step 4.

Note the system response. If the RTS completes, the system responds with:
OK

PM TMS
major (end)

The status of the TMS unit is INSV or ISTb.

If the RTS fails, the system responds with a failure message. This message can include a list of cards that have faults.

- 21** Determine if the return to service (RTS) completed. If the RTS completes the status of the unit is INSV or ISTb.

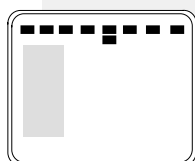
If RTS	Do
completes	step 21
does not complete	step 20

- 22** The fault remains. You replaced all of the cards on the list, or the reload was not successful. For additional help, contact the next level support.

- 23** The procedure is complete. If other alarms appear, refer to the appropriate alarm clearing procedures for the alarms that appear.

PM TMS minor

Alarm display



CM	MS	IOD	Net	PM	Lns	Trks	Ext	APPL
.	.	.	.	n TMS	.	.	.	.

Indication

A TMS (TOPS message switch) indication indicates a TMS alarm. The TMS indication appears under the peripheral module (PM) subsystem header at the maintenance level of the MAP (maintenance and administration position).

This procedure applies to all TOPS office configurations for the TMS, which follow:

- The TMS connects to an integrated TPC, which supports up to four integrated MP positions.
- The TMS connects to a virtual TPC, which supports MPX-IWS positions on a token ring.

Meaning

The indicated number of TMSs (n) are in the in-service trouble state.

Impact

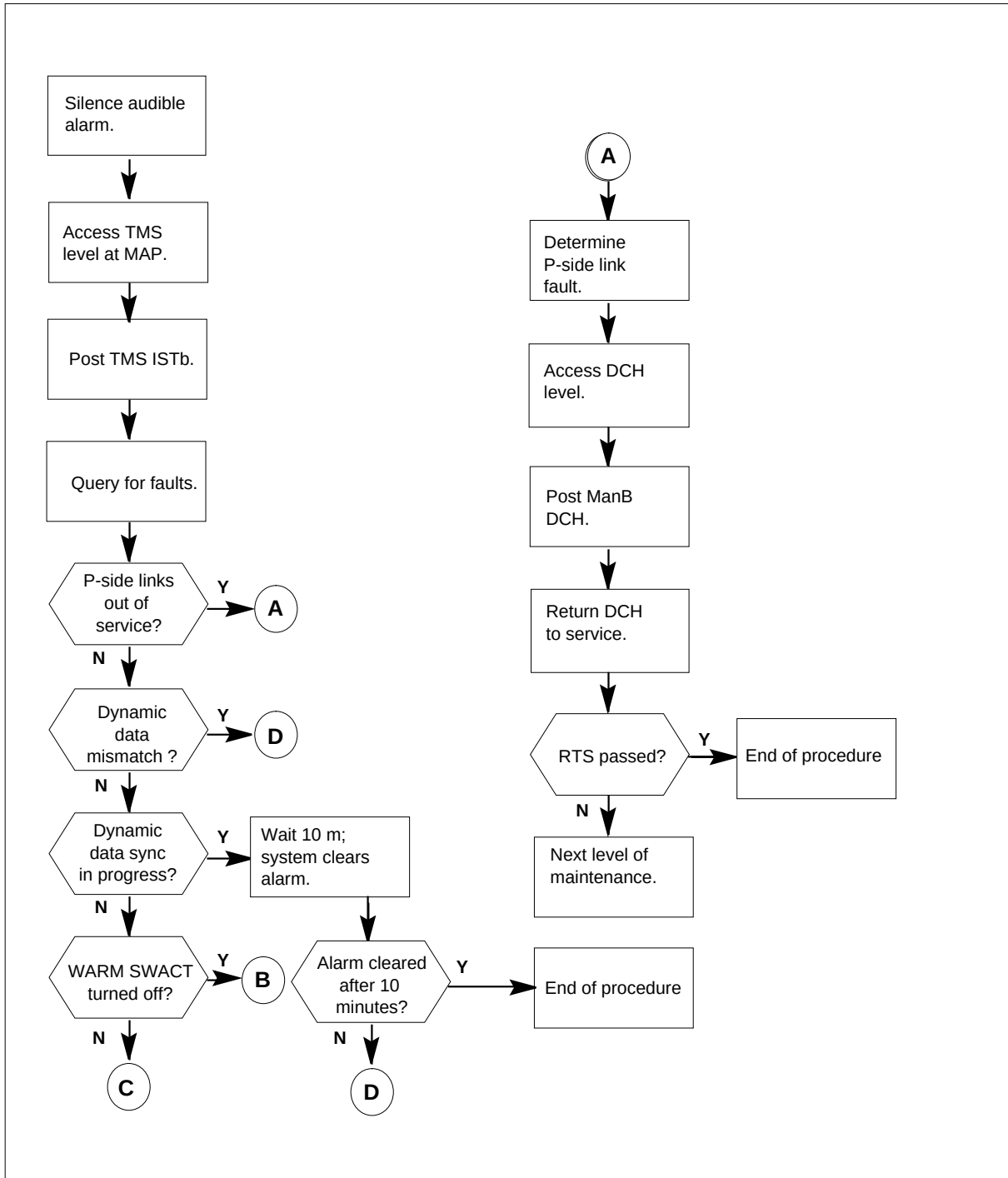
The TMS is a redundant unit. A TMS minor alarm does not affect call handling abilities. You must clear this alarm immediately. If a fault occurs in the remaining unit, the system can lose call handling abilities.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

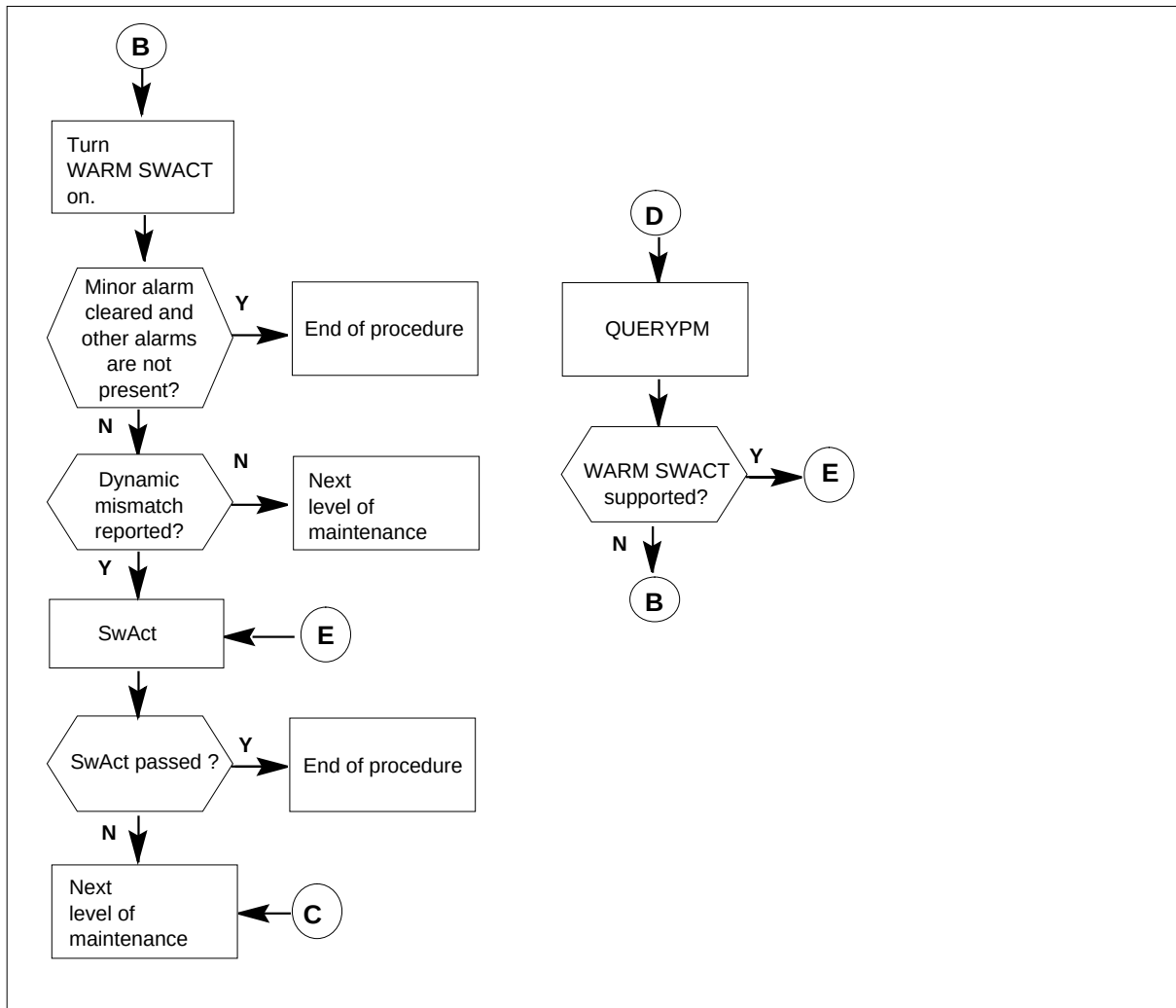
PM TMS minor (continued)

Summary of Clearing a PM TMS minor alarm



PM TMS minor (continued)

Summary of Clearing a PM TMS minor alarm (continued)



PM TMS minor (continued)

Clearing a PM TMS minor alarm

At the MAP terminal

1

ATTENTION

Enter this procedure from a PM system level clearing alarm procedure step that identifies a TMS associated fault.

To silence the alarm, type

>MAPCI;MTC;SIL

and press the ENTER key.

2

To post the in-service trouble (ISTb) TMS, type

>PM;POST TMS ISTB

and press the ENTER key.

Examine the status information for the TMS units on the TMS MAP display. This status information appears in the following example

Note: Determine which unit, 0 or 1, is ISTb. Record the unit number.

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TMS   .    .    .    .    .

TMS
0 Quit      PM      0      0      0      0      1      48
2 Post_     TMS     0      0      0      0      1      4
3 Listset
4           TMS 0 ISTb Links_00S: CSide 0, PSide 1
5 Trnsl_    Unit 0: Act   InSv
6 Tst_      Unit 1: InAct InSv
7 Bsy_      POST
8 RTS_
9 OffL
10 LoadPM_
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16
17 PERFORM
18 ISG

```

Note:

To stop system maintenance activity, type

>ABTK

and press the ENTER key.

Note: A 1 appears under the ISTb header for this alarm, as appears in the preceding figure.

PM TMS
minor (continued)

- 3 To determine unit fault, type
>QUERYPM FLT
and press the ENTER key.

Example of a MAP display

```
CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .     .     n TMS .     .     .     .

TMS                               SysB  ManB  OffL  CBsy  ISTb  InSv
0  Quit      PM      0      0      0      0      1      48
2  Post_     TMS     0      0      0      0      1      0
3  Listset
4                               TMS 0  ISTb Links_00S: CSide 0, PSide 1
5  TrnsL_    Unit 0: InAct  InSv
6  Tst_      Unit 1: Act    InSv
7  Bsy_      POST:
8  RTS_
9  OffL      QueryPM FLT
10 LoadPM_  Node is ISTb
11 Disp_     PSide Links out of service
12 Next      Unit 0
13 SwAct     no fault exists
14 QueryPM   Unit 1
15 DCH       no fault exists
16
17 PERFORM
18 ISG
```

Note: A 1 appears under the ISTb header for this alarm, as appears in the preceding figure.

- 4 Check TMS MAP display for P-side link failure or error messages.

If	Do
error message indicates dynamic data synchronization in progress	Wait ten minutes. The system clears the alarm. End of procedure. Go to step 13.
error message indicates the system does not support the WARM SWACT	step 6
P-side links out of service	step 8

PM TMS minor (continued)

If	Do
error message indicates dynamic data mismatch or dynamic data synchronization in progress that takes more than ten minutes	step 5
5	To check to see if the system supports WARM SWACT, type >QUERYPM and press the ENTER key.

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TMS   .    .    .    .    .

TMS
0 Quit      PM      0      0      0      0      1      48
2 Post_     TMS     0      0      0      0      1      0
3 Listset
4           TMS 0 ISTb Links_00S: CSide 0, PSide 1
5 TrnsL_    Unit 0: InAct InSv
6 Tst_      Unit 1: Act   InSv
7 Bsy_      POST:
8 RTS_
9 OffL      QueryPM
10 LoadPM_  WARM SWACT not supported
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16
17 PERFORM
18 ISG

```

Note: A 1 appears under the ISTb header for this alarm, as appears in the preceding figure.

If the system	Do
supports a WARM SWACT	step 7
does not support a WARM SWACT	step 6
6	To enable WARM SWACT, type >WARMSWACT ON

PM TMS
minor (continued)

and press the ENTER key.

Note: This action can take a minimum of ten minutes to data synchronization.

To confirm request for WARM SWACT, type

>yes

and press the ENTER key.

If	Do
minor alarm clears and other alarms are not present	step 13
the system reports a dynamic data mismatch	step 7
other problem are present	step 12

7

To switch activity, type

>swact

and press the ENTER key.

To confirm SWACT, type

>yes

and press the ENTER key.

If	Do
SWACT is successful (SWACT Passed)	step 13
SWACT is not successful	step 12

8

To determine cause of P-side link fault, type

>trns1 P

and press the ENTER key.

PM TMS minor (continued)

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TMS .    .    .    .    .

TMS
0 Quit      PM    0    0    0    0    1    48
2 Post_     TMS   0    0    0    0    1    0
3 Listset
4           TMS  0  ISTb  Links_00S: CSide 0, PSide 1
5 Trnsl_    Unit 0: InAct  InSv
6 Tst_      Unit 1: Act   InSv
7 Bsy_      POST:
8 RTS_
9 OffL      Trnsl P
10 LoadPM_  Link 0: Multiple Nodes0;CapMS;Status:OK;MssCond:OPN
11 Disp_    Link 1: Carrier of Class-Trunk;Status:OK
12 Next     Link13: DCH 5;Status:OK
13 SwAct    Link15: DCH 4;Status:OK
14 QueryPM  Link17: DCH 2;Status:OK
15 DCH      Link19: DCH 3;Status:MBsy
16
17 PERFORM
18 ISG

```

- 9 To access the DCH level of the PM level of the MAP, type
>dch
 and press the ENTER key.

PM TMS
minor (continued)

Example of a MAP display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	n TMS	.	.	.	.	.
TMS									
0	Quit	PM	0	0	10	0	1	48	
2	Post_	TMS	0	0	0	0	1	0	
3	Listset								
4		TMS	0	ISTb	Links_00S:	CSide	0,	PSide	1
5	Trnsl_	Unit 0:	Act	InSv					
6	Tst_	Unit 1:	InAct	InSv					
7	Bsy_								
8	RTS_	DCH	0	1	0	0	0	3	
9	OffL								
10	LoadPM_								
11									
12	Next								
13									
14	QueryPM								
15	Disp								
16									
17									
18									

- 10 To post the manual busy (ManB) DCH, type
>post manb
and press the ENTER key.

PM TMS minor (continued)

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TMS   .    .    .    .    .

TMS
0 Quit      PM    0    0    10    0    1    48
2 Post_     TMS   0    0    0    0    1    0
3 Listset
4           TMS  0  ISTb  Links_00S: CSide 0, PSide 1
5 Trnsl_    Unit 0: Act    InSv
6 Tst_      Unit 1: InAct  InSv
7 Bsy_
8 RTS_      DCH   0    1    0    0    0    3
9 OffL
10 LoadPM_  DCH  3  ISG  3  ManB TMS 0 port 19
11
12 Next
13
14 QueryPM
15 Disp
16
17
18

```

- 11** To return the ManB DCH to service, type
>rts
 and press the ENTER key.

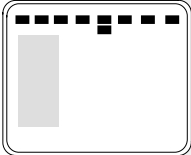
PM TMS
minor (end)

Example of a MAP display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	n TMS	.	.	.	.	.
TMS									
0	Quit	PM	0	0	10	0	1	48	
2	Post_	TMS	0	0	0	0	1	0	
3	Listset								
4		TMS	0	ISTb	Links_00S:	CSide	0,	PSide	1
5	Trnsl_	Unit 0:	Act	InSv					
6	Tst_	Unit 1:	InAct	InSv					
7	Bsy_								
8	RTS_	DCH	0	0	0	0	0	4	
9	OffL								
10	LoadPM_	RTS							
11		RTS Passed							
12	Next	DCH 3	ISG 3	InSv	TMS 0	port 19			
13									
14	QueryPM								
15	Disp								
16									
17									
18									

	If RTS	Do
	passed	step 13
	failed	step 12
12	For additional help to clear the alarm, contact the next level of support.	
13	The procedure is complete. If other alarms appear, refer to the correct alarm clearing procedures for the indicated alarms.	

PM TMS (ETMS_OCDL_OOS)
major

Alarm display

CM	MS	IOD	Net	PM	Lns	Trks	Ext	APPL
.	.	.	.	1TMS M	.	.	.	.

Indication

At the MTC level of the MAP display, M and a number appears under the PM header of the alarm banner. The number precedes M, which indicate a major PM alarm.

Meaning

An ETMS_OCDL_OOS alarm occurs under the PM alarm system.

Result

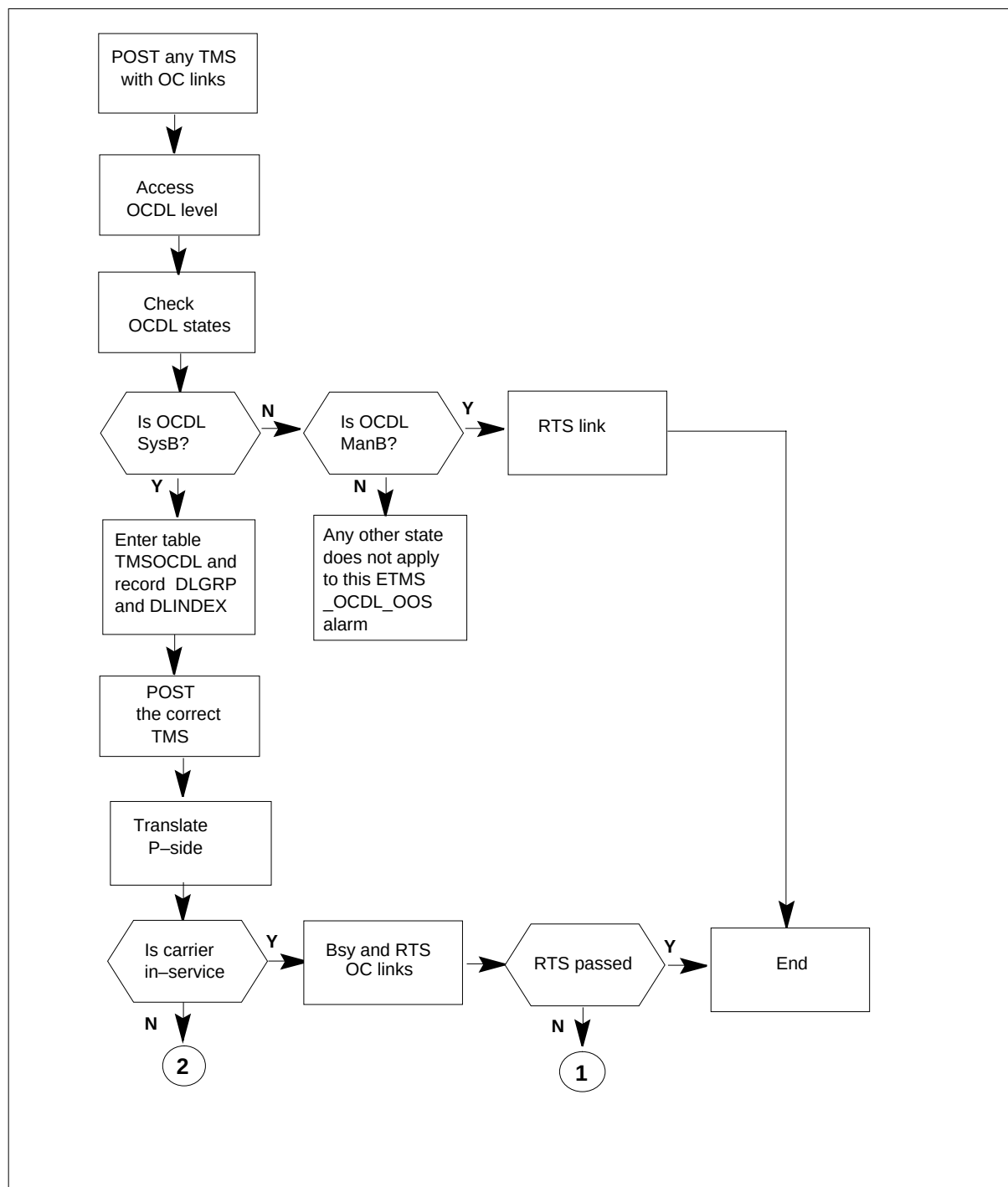
An ETMS_OCDL_OOS alarm indicates operator centralization from a remote toll center to a host DMS TOPS toll center was affected. A reduction of remote links to the TOPS toll center occurs.

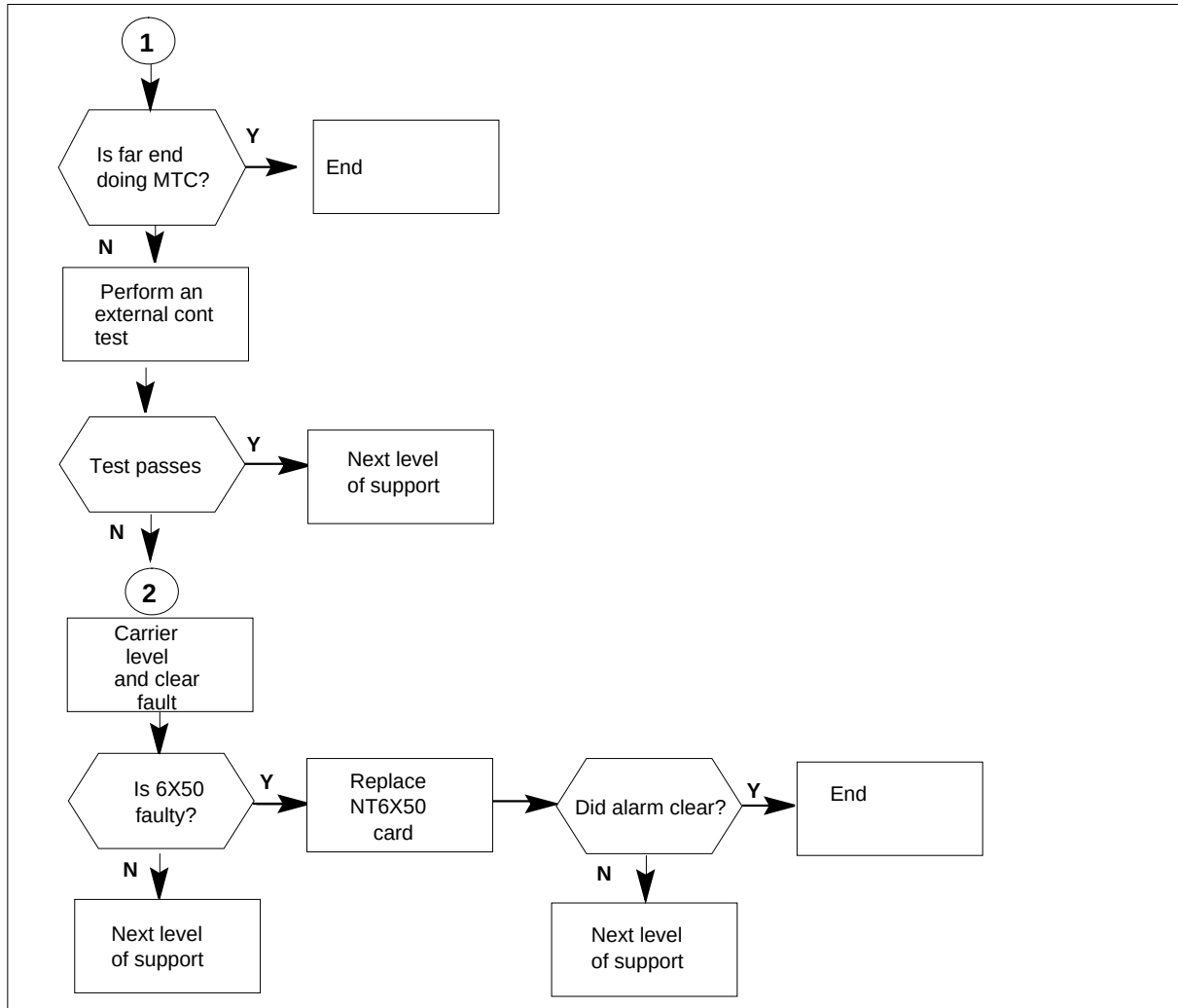
Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM TMS (ETMS_OCDL_OOS) major (continued)

Summary of clearing a PM TMS (ETMS_OCDL_OOS) major alarm



**PM TMS (ETMS_OCDL_OOS)
major (continued)****Summary of clearing a PM TMS (ETMS_OCDL_OOS) major alarm (continued)**

PM TMS (ETMS_OCDL_OOS)
major (continued)

Clearing a PM TMS (ETMS_OCDL_OOS) major alarm

At the MAP terminal

1

ATTENTION

You must enter this procedure from a PM system level alarm clearing procedure step that identifies a OCDL system busy fault.

To post any TOPS Message Switch (TMS) with Operator Centralization (OC) links, type

>PM;POST TMS tms_no

and press the ENTER key.

where

tms_no

is the number of the TMS is 0-255

Note: To determine a TMS with OC links, enter table LTCINV, position on each TMS, and check the field OPTATTR for OC link.

Example of a MAP display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	.	.	.	.	.	.
TMS				SysB	ManB	OffL	CBsy	ISTb	InSv
0	Quit	PM	0	0	0	0	0	0	48
2	Post_	TMS	0	0	0	0	0	0	4
3	Listset								
4		TMS	0	InSv	Links_OOS:	CSide	0,	PSide	0
5	Trnsl_	Unit 0:	Act	InSv					
6	Tst_	Unit 1:	InAct	InSv					
7	Bsy_	POST							
8	RTS_								
9	OffL								
10	LoadPM_								
11	Disp_								
12	Next								
13	SwAct								
14	QueryPM								
15	DCH								
16	OCDL								
17	PERFORM								
18	ISG								

PM TMS (ETMS_OCDL_OOS) major (continued)

- 2 To enter OCDL level of the MAP and query the system busy OC links, type
>OCDL;QOCDL SYSB
and press the ENTER key.

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    .    .    .    .    .    .

TMS
0  Quit          PM    0    0    0    0    0    48
2              TMS    0    0    0    0    0    4
3
4              TMS 0  ISTb Links_00S: CSide 0, PSide 0
5              Unit 0: Act   InSv
6              Unit 1: InAct InSv
7  Bsy_
8  RTS_          OCDL          1111111111 2222222222 33
9  OffL          0123456789 0123456789 0123456789 01
10         0000--0000 0000--0000 ----- --
11
12         OCDLGRP  DLINDEX  TMS  OCDL#      PROTLEVEL  STATE
13         =====  =====  ===  =====  =====
14         HOSTDL    0        2    1          LOW      SYSB
15  Cont
16  Loopbk_
17  OCPing_
18  QOCDL_

```

- 3 Record the system busy OCDLGRP, DLINDEX, TMS Number and OCDL#.
- 4 To leave the MAP maintenance level, type
>QUIT ALL
and press the ENTER key.
- 5 Enter table TMSOCDL and position on the OCDLGRP and DLINDEX you recorded in step 3.
>Table TMSOCDL; POS <OCDLGRP> <DLINDEX>
and press the ENTER key.

PM TMS (ETMS_OCDL_OOS)
major (continued)

Example of a MAP display

TABLE:TMSOCDL
TOP

OCDLKEY	PROTLEVEL	TMS	PORT	CHANNEL	OCDL
HOSTDL 1	LOW	2	0	1	1
REMOTEDL 1	LOW	0	0	2	2
HOST2DL 1	LOW	0	1	3	3
REMOTE2DL 1	LOW	2	2	4	4

- 6 To record the TMS, port, and channel, and quit table TMSOCDL. To quit table TMSOCDL, type
>QUIT
and press the ENTER key.
- 7 To post the TMS with the system busy OC links you recorded in step 3, type
>MAPCI;MTC;PM;POST TMS tms_no
and press the ENTER key.
where
tms_no
is the number of the TMS is 0-255

PM TMS (ETMS_OCDL_OOS) major (continued)

Example of a MAP display

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.      .      .      .      .      .      .      .      .      .

TMS
0 Quit      PM      0      0      0      0      0      48
2 Post_     TMS      0      0      0      0      0      4
3 Listset
4           TMS 2 InSv Links_OOS: CSide 0, PSide 0
5 Trnsl_    Unit 0: Act      InSv
6 Tst_      Unit 1: InAct    InSv
7 Bsy_      POST
8 RTS_
9 OffL
10 LoadPM_
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16 OCDL
17 PERFORM
18 ISG

```

- 8 To translate the Peripheral side (P-side) of the TMS, type
>TRNSL P
 and press the ENTER key.

PM TMS (ETMS_OCDL_OOS)
major (continued)

Example of a MAP display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	.	.	.	.	.	.
TMS				SysB	ManB	OffL	CBsy	ISTb	InSv
0	Quit	PM	0	0	0	0	0	0	48
2	Post_	TMS	0	0	0	0	0	0	4
3	Listset								
4		TMS	2	InSv	Links_OOS:	CSide	0,	PSide	0
5	Trnsl_	Unit 0:	Act	InSv					
6	Tst_	Unit 1:	InAct	InSv					
7	Bsy_	TRNSL P							
8	RTS_								
9	OffL	LINK 0	CARRIER	CLASS OF - TRUNK					:STATUS OK
10	LoadPM_	LINK 1	CARRIER	CLASS OF - TRUNK					:STATUS OK
11	Disp_	LINK 2	CARRIER	CLASS OF - TRUNK					:STATUS OK
12	Next	LINK 3	CARRIER	CLASS OF - TRUNK					:STATUS OK
13	SwAct	LINK 4	CARRIER	CLASS OF - TRUNK					:STATUS OK
14	QueryPM	LINK 5	CARRIER	CLASS OF - TRUNK					:STATUS OK
15	DCH	LINK 6	CARRIER	CLASS OF - TRUNK					:STATUS OK
16	OCDL	LINK 7	CARRIER	CLASS OF - TRUNK					:STATUS OK
17	PERFORM								
18	ISG								

9 Is the carrier busy?

If	Do
INSV	step 10
SYSB	step 34

10 To enter the OCDL level of the MAP, type

>**OCDL**

and press the ENTER key.

11 To busy the OC link you recorded in step 3, type

>**BSY <CHNL>**

and press the ENTER key.

where

CHNL

is the specified channel from 0-31

PM TMS (ETMS_OCDL_OOS) major (continued)

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    .    .    .    .    .    .

TMS
0  Quit      PM      0      0      0      0      0      48
2          TMS      0      0      0      0      0      4
3
4          TMS 2  InSv  Links_00S: CSide 0, PSide 0
5          Unit 0: Act   InSv
6          Unit 1: InAct InSv
7  Bsy_
8  RTS_      OCDL      1111111111 2222222222 33
9  OffL      0123456789 0123456789 0123456789 01
10         0M00--0000 0000--0000 ----- --
11
12
13
14
15  Cont
16  Loopbk_
17  OCPing_
18  QOCDL_

```

- 12** To return the OC link to service, type

>RTS <CHNL>

and press the ENTER key.

where

CHNL

is the specified channel from 0-31

- 13** Did return to service pass?

If

Do

YES

step 47

NO

step 14

- 14** To perform an internal continuity test, type

>CONT <CHNL> INT

and press the ENTER key.

where

CHNL

is the specified channel from 0-31

PM TMS (ETMS_OCDL_OOS) major (continued)

15	Did test pass?
If	Do
YES	step 28
NO	step 16
- 16** To switch the processing activity to the inactive unit, type
>SWACT
 and press the ENTER key.
 The system determines the type of SwAct the system can perform. The type can be a warm SwAct or a cold SwAct. The system displays a confirmation prompt for the SwAct the system selects.
Note: The PM major alarm clears after the SWACT.
- 17** To busy the inactive TMS unit with the system busy OC links, type
>BSY UNIT unit_no
 and press the ENTER key.
where
 unit_no
 is the TMS unit number 0 or 1
- 18** To return-to-service the TMS unit, type
>RTS UNIT unit_no
 and press the ENTER key.
where
 unit_no
 is the TMS unit number 0 or 1
- | | |
|-----------|-------------------|
| 19 | Did the RTS pass? |
| If | Do |
| YES | step 28 |
| NO | step 20 |
20	Does the system indicate the BX01 EISP card has faults?
If	Do
YES	step 21
NO	step 24
- 21** Go to the *Card Replacement Procedures* document. Use the BX01 card replacement procedure to replace the card. Return to this point.

PM TMS (ETMS_OCDL_OOS) major (continued)

At the MAP terminal

- 22 The peripheral/remote loader-16 card (NT7X05) allows local loading of XPM data. Local loading of XPM data reduces recovery time. To check if the NT7X05 card is provisioned, type

>QUERYPM FILES

and press the Enter key.

Example of a MAP display:

CM	MS	IOD	Net	PM 1DTC	CCS	LNS	Trks	Ext	APPL
.	.	.	.	.	.	.	.	.	.
TMS SysB ManB OffL CBsy ISTb InSv									
0	Quit	PM	2	0	2	0	2	25	
2	Post	TMS	0	1	0	0	0	10	
3	ListSet								
4		TMS	0	ManB	Links_00S:	CSide	0,	PSide	0
5	TRNSL_	Unit 0:	Act	ManB					
6	TST_	Unit 1:	InAct	ManB					
7	BSY_								
8	RTS_	QUERYPM files							
9	OffL	Unit 0:							
10	LoadPM_	NT7X05 load File: ETM06BB							
11	Disp_	NT7X05 Image File:							
12	Next_	NT7X05 Image Timestamp: 1996/02/07 13:56:25.663 WED							
13	SwAct								
14	QueryPM	Unit 1:							
15		NT7X05 load File: [ETM06BB]							
16		NT7X05 Image File:							
17	Perform	NT7X05 Image Timestamp: 1996/02/07 13:54:09.523 WED							
18									

(NT7X05 load file name)

Note: If the NT7X05 card is not provisioned, the MAP response is:
NT7X05 not datafilled, QueryPm files invalid

If the NT7X05 card	Do
is provisioned	step 23
is not provisioned	step 24

PM TMS (ETMS_OCDL_OOS) major (continued)

23

**DANGER****Possible service interruption**

The LOCAL LOADFILE option of the LOADPM command has a parameter of [<file> string}. The LOADPM command does not patch the load file when you use this parameter. Do not use this parameter unless you need to use the NOPATCH option of the loadfile.

To load the TMS software from the local loadfile, type:

>LOADPM PM LOCAL LOADFILE

If LOADPM	Do
passed	step 26
failed	step 24

24 To load the inactive unit of the TMS from the CC, type

>LOADPM UNIT unit_no

and press the ENTER key.

where

unit_no

is the TMS unit number 0 or 1

25 Did the load pass?

If	Do
YES	step 26
NO	step 45

26 To return-to-service the TMS unit, type

>RTS UNIT unit_no

and press the ENTER key.

where

unit_no

is the TMS unit number 0 or 1

27 Did the RTS pass?

If	Do
YES	step 28

PM TMS (ETMS_OCDL_OOS) major (continued)

	If	Do
	NO	step 45
28	Does the far-end office perform maintenance?	
	If	Do
	YES	step 29
	NO	step 30
29	Ask the far-end office to contact you when maintenance is complete. Return to step 12.	
30	Ask the far-end office to manually busy the far-end office end of the OC link(s) and setup a loopback. The command at the far-end office is LOOPBK <CHNL> SETUP.	
31	To perform an external continuity test on the OC links, type >CONT <CHNL> PM and press the ENTER key. <i>where</i> CHNL is the channel number 0-31	
32	To confirm the external continuity test, type >YES and press the ENTER key. Note: After you complete the test, ask the far-end office to release the loopback. The command at the far-end office is LOOPBK <CHNL> RLS.	
33	Did the test pass?	
	If	Do
	YES	step 46
	NO	step 34
34	Go to the carrier level of the MAP and POST the TMS with the system busy carrier or OC link. To post the TMS with the system busy carrier or OC, type >TRKS;CARRIER;POST TMS tms_no and press the ENTER key. <i>where</i> tms_no is the number of TMS 0-255	

PM TMS (ETMS_OCDL_OOS)
major (continued)

Example of a MAP display

CLASS	ML	OS	ALARM	SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	2	0	4	1	0	22	5	0	0	255
REMOTE	1	1	3	5	1	0	0	1	0	10

N	CLASS	SITE	TMS	CK	D	ALARM	SLIP	FRME	BER	ES	SES	STATE
0	TRUNKS	BRSC	0	4	C		0	0	<-6.3	0	0	InSv
1	TRUNKS	BRSC	0	5	C		0	0	<-6.3	0	0	InSv
2	TRUNKS	BRSC	0	6	C	LCGA	11	OS	ML	.0	0	SysB-T
3	TRUNKS	BRSC	0	7	C		0	0	<-6.3	0	0	InSv
4	TRUNKS	BRSC	0	8	C		0	0	<-6.3	0	0	InSv
MORE												

35 To busy the carrier with the system busy OC links, type

>BSY <tst_no>

and press the ENTER key.

where

tst_no

is the N number at carrier level 0-4

Note: To determine the carrier with the OC links, check table TMSOCDL under the field PORT. The PORT number in table TMSOCDL is the same as the CK number (circuit number) at carrier level. The CK number maps to the N (test number) at carrier level 0-4

36 To test the carrier, type

>TST <tst_no>

and press the ENTER key.

where

tst_no

is the N number at carrier level 0-4

37 Did the test pass?

If

Do

YES

step 42

PM TMS (ETMS_OCDL_OOS) major (continued)

	If	Do
	NO	step 38
38	Does the system indicate the 6X50 circuit pack has defects?	
	If	Do
	YES	step 39
	NO	step 46
39	Go to the card replacement procedure in this document and replace the 6X50 card. Return to this point.	
40	To return the carrier to service, type >RTS <tst_no> and press the ENTER key. <i>where</i> tst_no is the N number at carrier level 0-4	
41	Did the return to service pass?	
	If	Do
	YES	step 42
	NO	step 45
42	Did the alarm clear?	
	If	Do
	YES	step 47
	NO	step 46
43	Are there additional system busy OC links?	
	If	Do
	YES	step 44
	NO	step 47
44	Use PM major OCDL_SysB procedure in this document to clear additional system busy OC links.	
45	The OCDL system busy major escalates to a higher priority alarm condition. Use the procedure in this document to clear this alarm.	

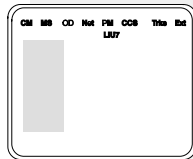
PM TMS (ETMS_OCDL_OOS)

major (end)

- 46** Contact the next level of support. Give details of OCDL_SYSB procedure that you perform.
- 47** The procedure is complete.

PM TPC critical

Alarm display



CM	MS	IOD	Net	PM	Lns	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.
				C				

Indication

The TOPS MPX system does not have a TPC (TOPS programmable controller). The TPC functionality is programmed into the type 2 TOPS MPX positions in the token ring. The type 2 TOPS MPX position is referred to as the virtual programmable controller (VPC). The n TPC indication under the peripheral module (PM) subsystem header at the maintenance level of the maintenance and administration position (MAP) indicates a VPC alarm. A C indication under the n TPC indicates a critical alarm.

Meaning

The indicated number (n) of PMs are in the critical state.

Impact

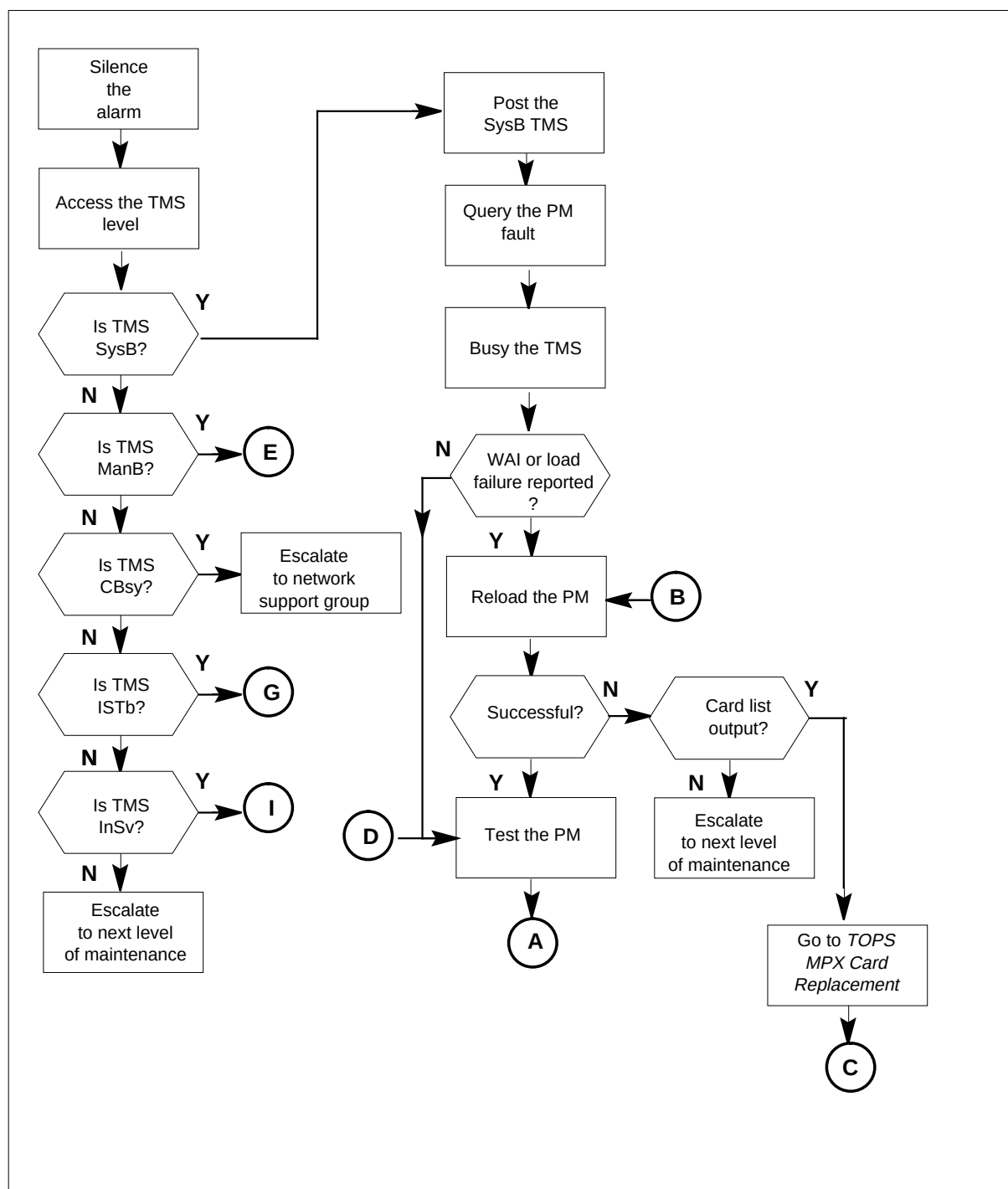
The VPCs are redundant in each token ring; therefore, call handling capabilities for a token ring are not affected by a TPC critical alarm. However, this alarm must be cleared as soon as possible, as call handling capabilities could be lost if a fault occurs in the remaining VPC unit.

Action

A summary of the alarm clearing procedure for PM TPC critical is shown in the flowchart beginning on the following page. The step-action procedure that you use to perform the task follows the flowchart.

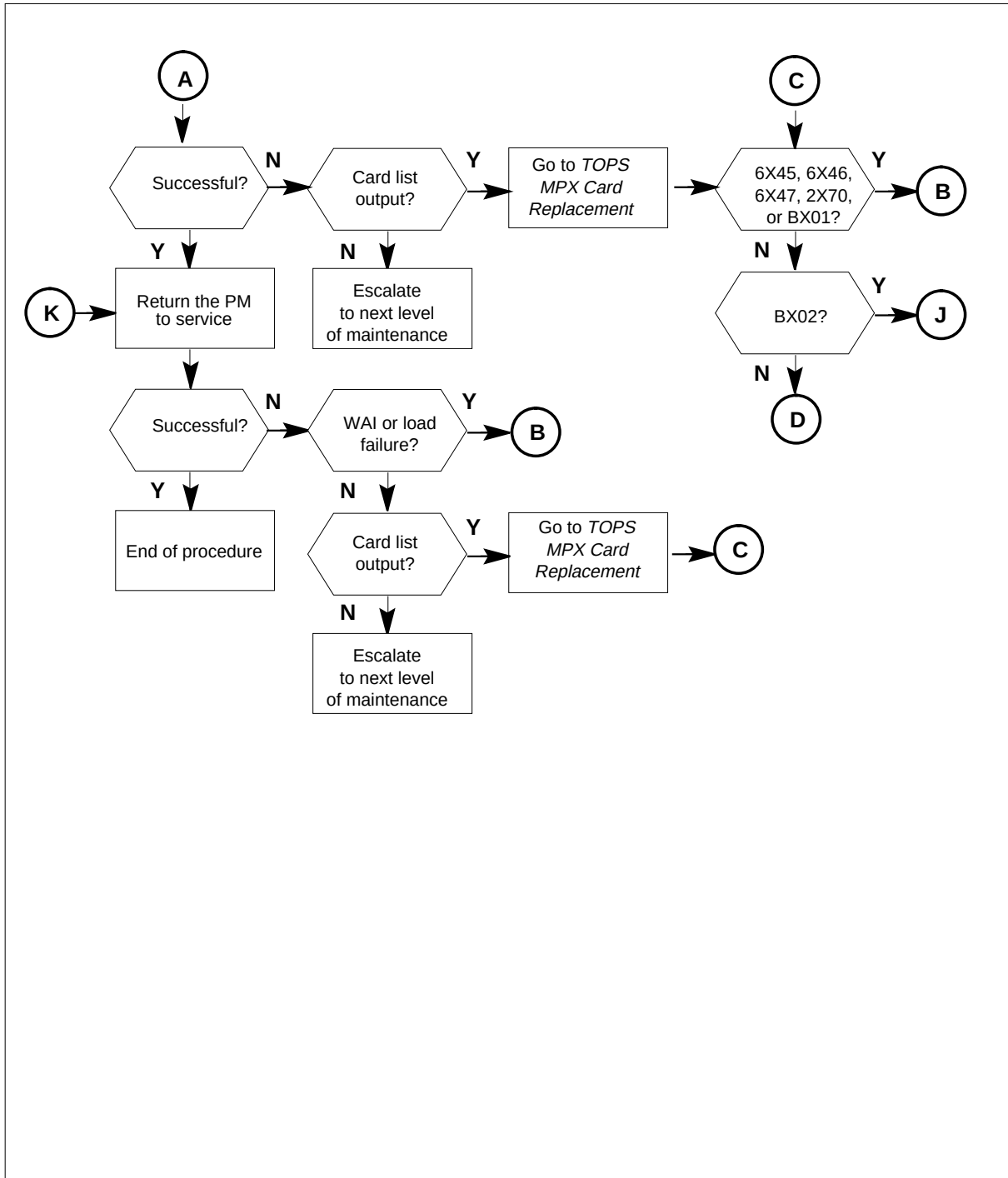
PM TPC critical (continued)

Summary of Clearing a PM TPC critical alarm



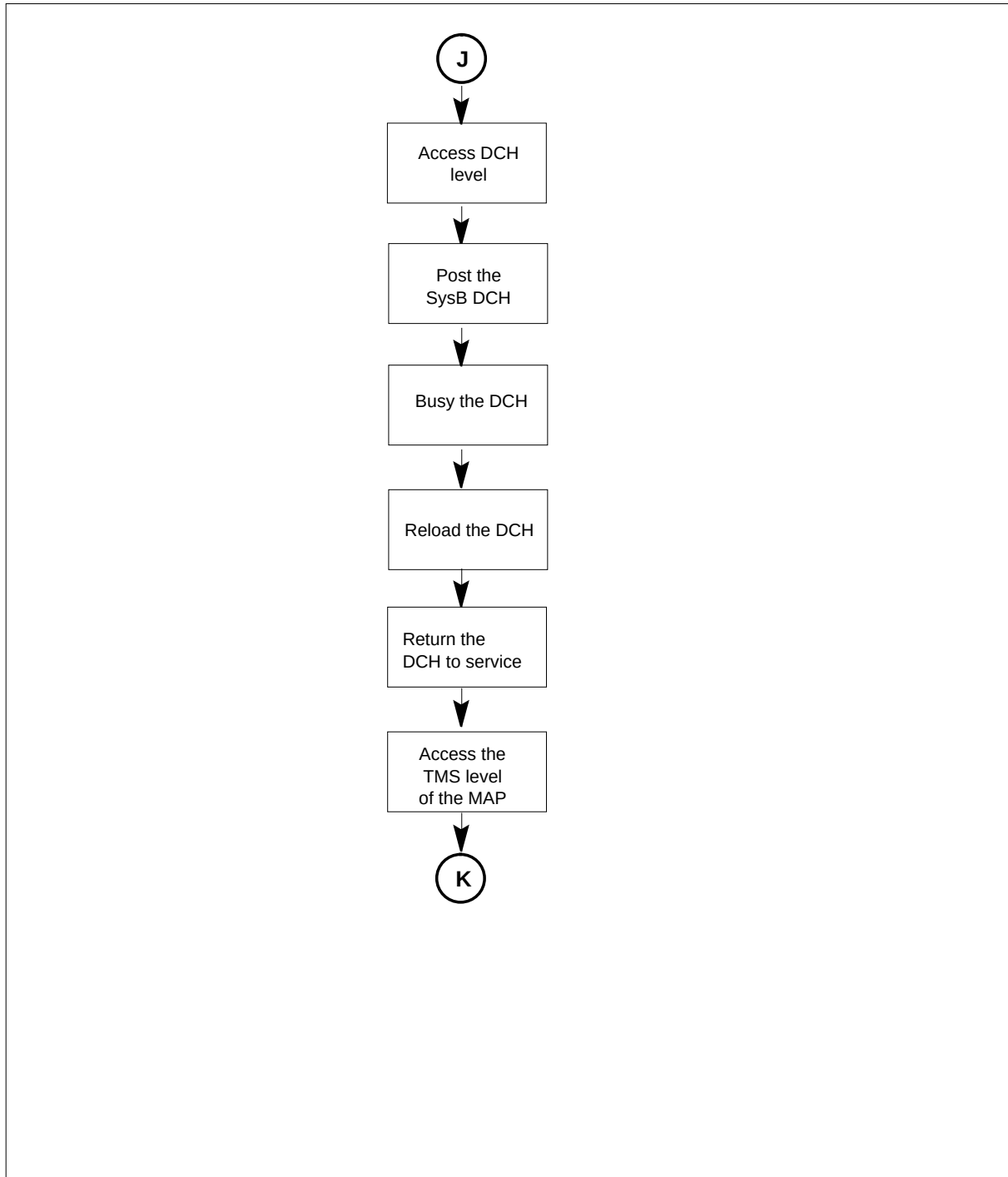
PM TPC critical (continued)

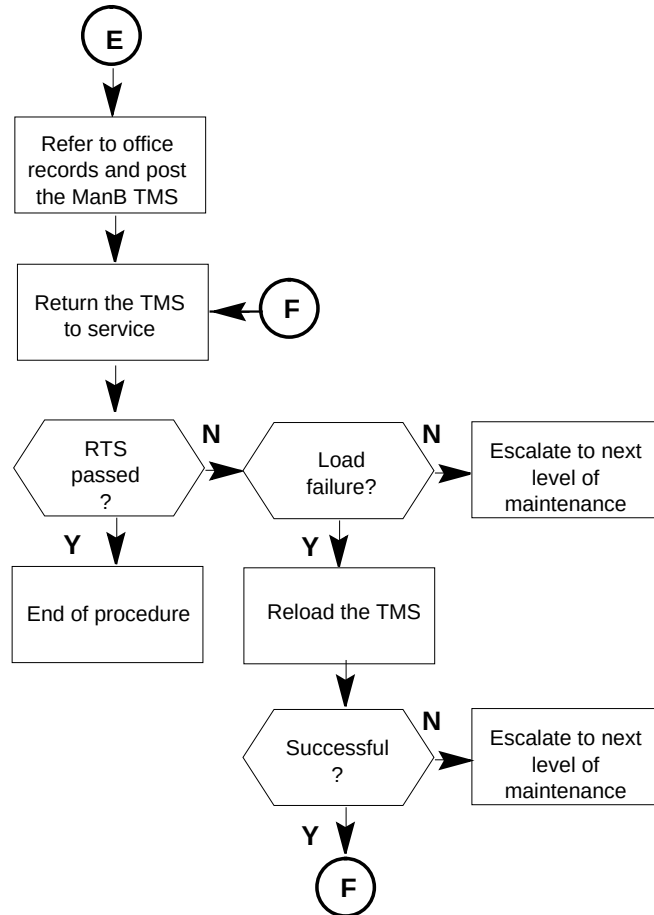
Summary of Clearing a PM TPC critical alarm (continued)



PM TPC critical (continued)

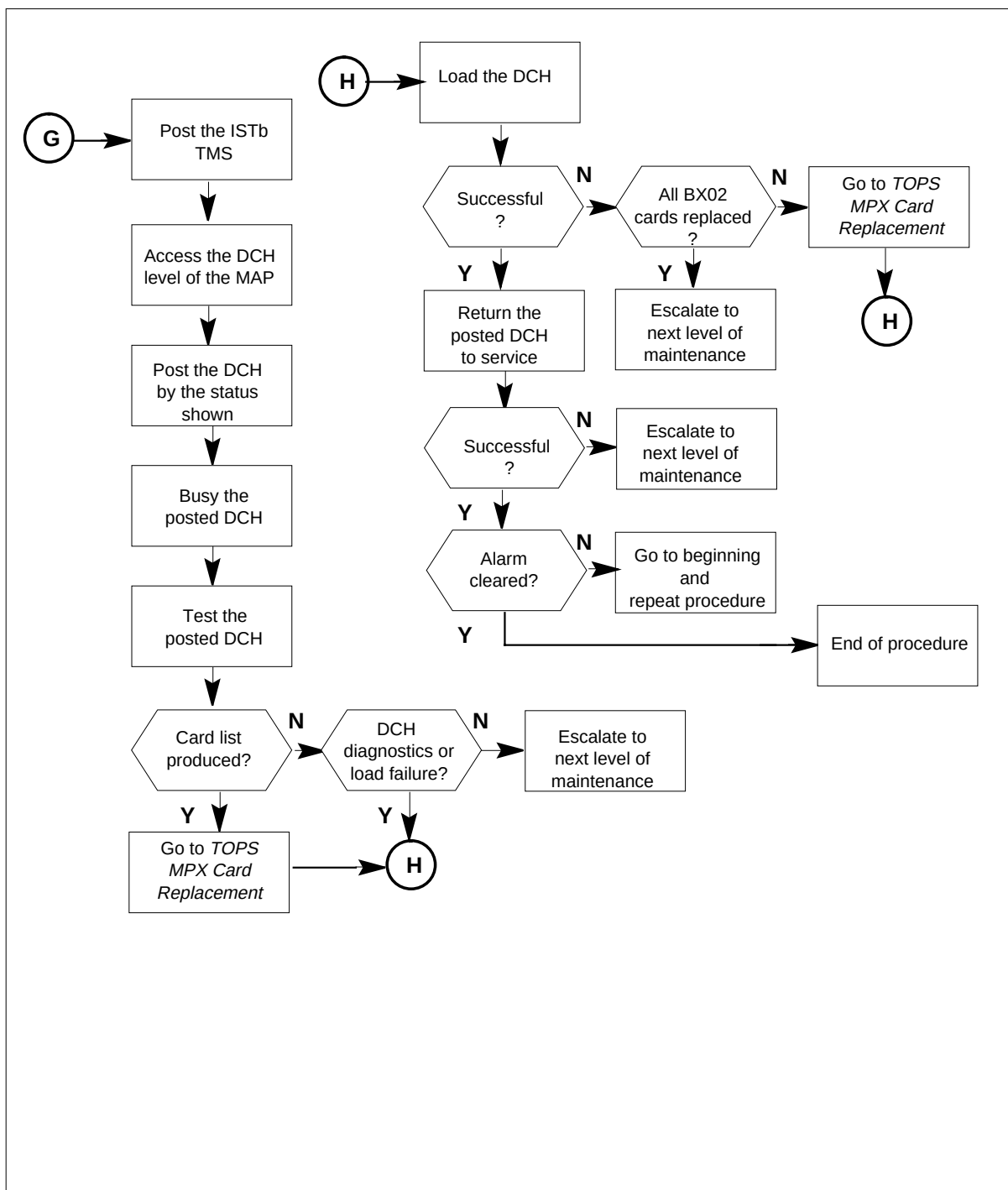
Summary of Clearing a PM TPC critical alarm (continued)



PM TPC
critical (continued)**Summary of Clearing a PM TPC critical alarm (continued)**

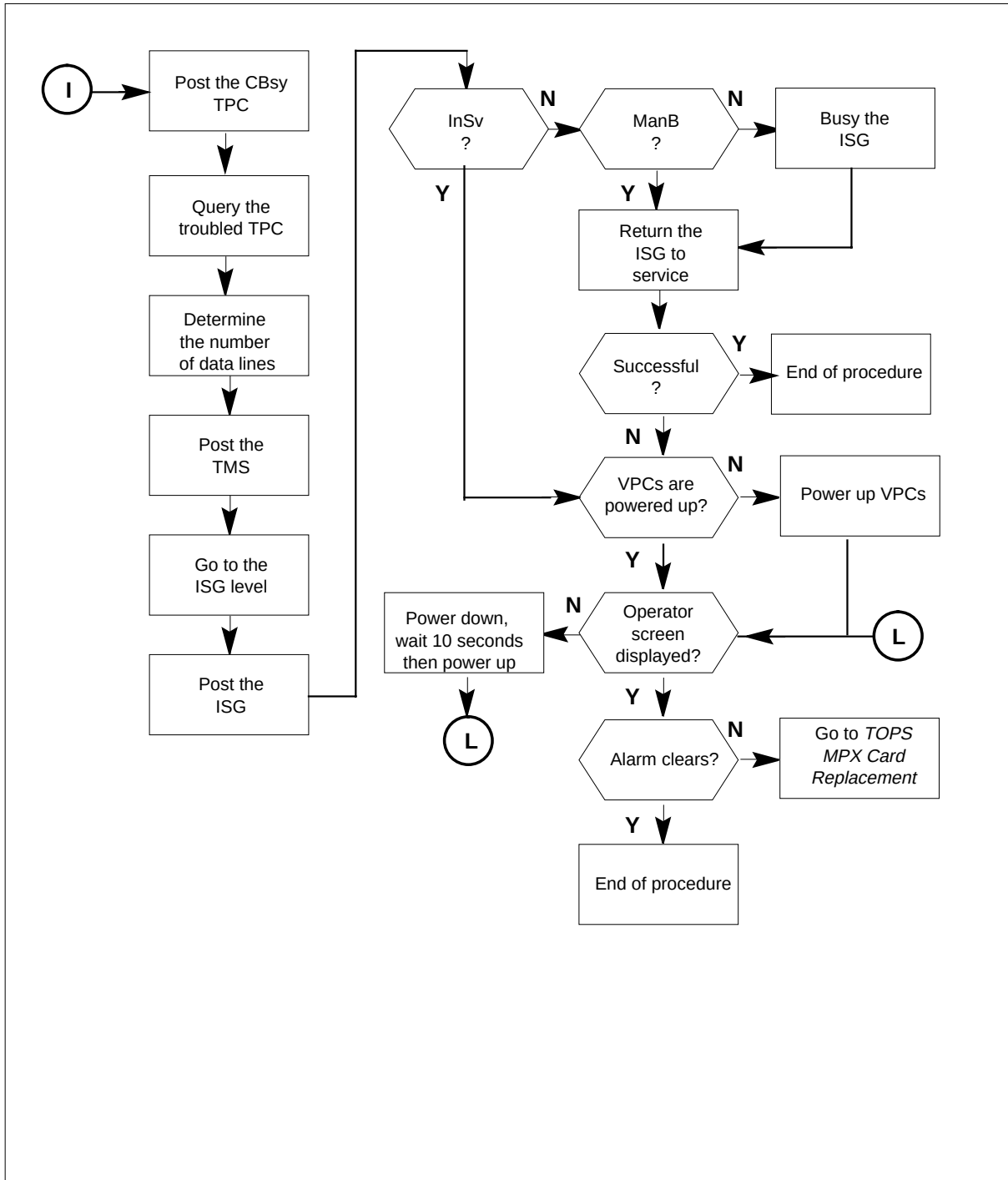
PM TPC critical (continued)

Summary of Clearing a PM TPC critical alarm (continued)



PM TPC critical (continued)

Summary of Clearing a PM TPC critical alarm (continued)



PM TPC
critical (continued)

Clearing a PM TPC critical alarm

At the MAP display

1

ATTENTION

You should be entering this procedure from a PM system level alarm clearing procedure step that identified a TMS associated fault.

Silence the alarm by typing the following string:

>MAPCI;MTC;SIL

and pressing the ENTER key.

2

Access the TMS level of the MAP and post the critical TMS by typing the following string:

>PM;POST TMS

and pressing the ENTER key.

Typical response on the MAP display:

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
				C					
TMS			SysB	ManB	OffL	CBsy	ISTb	InSv	
0 Quit		PM	0	0	9	0	3	53	
2 Post_		TMS	1	0	0	0	0	0	
3 Listset									
4		TMS	Links_OOS:	CSide		PSide			
5 Trnsl_		Unit0:							
6 Tst_		Unit1:							
7 Bsy_		POST:							
8 RTS_		No PM posted							
9 OffL									
10 LoadPM_									
11 Disp_									
12 Next									
13 SwAct									
14 QueryPM									
15 DCH									
16									
17 PERFORM									
18 ISG									

Note:
This is the
Critical
information. This
TMS is SysB.

PM TPC

critical (continued)

See the following table to determine what to do next.

If TMS status is	Do
SysB	step 22
ManB	step 19
CBsy	This indicates a network related problem. Request assistance from the network support group.
ISTb	This indicates a DCH related problem. Go to step 12.
InSv	step 3

- 3** Post the C-side busy (CBsy) TPC by typing the following string:

>POST TPC CBSY

and pressing the ENTER key.

Typical response on the MAP display:

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.        .        .        .        n TPC
          *C*
TPC
0 Quit      PM      0      0      0      0      3      53
2 Post_     TPC      0      0      0      1      0      0
3
4          post tpc cbsy
5 TrnsL     TPC 0 CBsy
6 Tst
7 Bsy
8 RTS
9 OffL
10
11 Disp_
12 Next
13
14 QueryPM
15 MP
16
17
18
```

- 4** Query the troubled TPC by typing the following string:

>QUERYPM

and pressing the ENTER key.

PM TPC
critical (continued)

Record the TOPSPOS(ition) numbers of the MP0 and MP1 VPCs.
Four TOPS MPX positions will be listed. Position MP0 is always the primary VPC. Position MP1 is the secondary VPC if the token ring is a redundant system.
Typical response on the MAP display:

	CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
	.	.	.	.	n TPC	.	.	.	.	.
					C					
	TPC			SysB	ManB	OffL	CBsy	ISTb	InSv	
0	Quit		PM	0	0	9	0	3	53	
2	Post_		TPC	0	0	0	1	0	0	
3										
4			TPC	0	CBsy					
5	Trnsl									
6	Tst			TPC Load File:	0					
7	Bsy		PM Type:	TPC	Int. No.:	0	Node_No:	132		
8	RTS		Site Flr	RPos	Bay_id	Shf	Description	Slot	EqPEC	
9	OffL			00	A00	PCE 00	00	TPC: 000		
10										
11	Disp_									
12	Next		MP	0:	TOPSPOS		6			
13			MP	1:	TOPSPOS		7			
14	QueryPM		MP	2:	TOPSPOS		8			
15	MP		MP	3:	TOPSPOS		9			
16										
17										
18										

Note:
This is the Critical information.
MP0 is always primary. MP1 is
secondary if in redundant system.
The TOPSPOS(ition) for MP0 is
6 and for MP1 it is 7.

- 5 Determine the number of data lines by typing the following string:
>TRNSL
and pressing the ENTER key.
Note how many data lines exist, either 1 or 2. Record the TMS number, the ISG number, and the ISG channel number for each data line.
Typical response on the MAP display:

PM TPC

critical (continued)

CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
				C					
TPC			SysB	ManB	Offl	CBsy	ISTb	InSv	
0 Quit		PM	0	0	0	0	3	53	
2 Post_		TPC	0	0	0	1	0	0	
3									
4		TPC	0	CBsy	Line	ISG	ISG	ISG	
5 Trnsl				type	number	number			
6 Tst		Trnsl							
7 Bsy		TMS	0	0	5:	data; ISG	2	5	
8 RTS		TMS	0	0	6:	data; ISG	2	12	
9 OffL		TMS	0	0	1:	voice;TOPSPOS	6;	MP state:PMB: VT state:PMB	
10		TMS	0	0	2:	voice;TOPSPOS	7;	MP state:PMB: VT state:PMB	
11 Disp_		TMS	0	0	3:	voice;TOPSPOS	8;	MP state:PMB: VT state:PMB	
12 Next		TMS	0	0	4:	voice;TOPSPOS	9;	MP state:PMB: VT state:PMB	
13									
14 QueryPM									
15 MP									
16									
17									
18									

Diagram annotations:

- Line 5: "Trnsl" points to the "Trnsl" column header.
- Line 7: "data; ISG" points to the "data; ISG" column header.
- Line 8: "data; ISG" points to the "data; ISG" column header.
- Line 9: "voice;TOPSPOS" points to the "voice;TOPSPOS" column header.
- Line 10: "voice;TOPSPOS" points to the "voice;TOPSPOS" column header.
- Line 11: "voice;TOPSPOS" points to the "voice;TOPSPOS" column header.
- Line 12: "voice;TOPSPOS" points to the "voice;TOPSPOS" column header.
- Line 14: "QueryPM" points to the "QueryPM" column header.
- Line 15: "MP" points to the "MP" column header.
- Line 16: "TMS" points to the "TMS" column header.
- Line 17: "number" points to the "number" column header.

See the following table to determine what to do next.

If	Then
only one data line is listed, it is a nonredundant system	The alarm is caused by a problem in the MP0 position noted in the previous step.
two data lines are listed, it is a redundant system.	The alarm is caused by a failure of both VPCs, MP0, and MP1 noted in the previous step.

- 6 Post the TMS identified in the previous step by typing the following string:

>POST TMS n

and pressing the ENTER key.

where

n
is the TMS number

Typical response on the MAP display:

PM TPC
critical (continued)

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.       .       .       .       n TPC   .       .       .       .       .
      *C*
TMS
0 Quit      PM      0      0      0      0      0      48
2 Post_     TMS      0      0      0      0      0      4
3 Listset
4           TMS 0 InSv Links_00S: CSide 0 , PSide 0
5 TrnsL_    Unit 0: Act InSv
6 Tst_      Unit 1: Inact InSv
7 Bsy_      POST:
8 RTS_
9 OffL
10 LoadPM_
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16
17 PERFORM
18 ISG
```

- 7 Go to the ISG level of the MAP by typing the following:
>ISG
and pressing the ENTER key.
Typical response on the MAP display:

```

CM      MS      IOD      Net      PM      CCS      LNS      Trks      Ext      APPL
.       .       .       .       n TPC   .       .       .       .       .
      *C*
ISG
0 Quit      PM      0      0      12      0      3      48
2 Post_     TMS      0      0      0      0      0      1
3
4           TMS 0 InSv Links_00S: CSide 0 , PSide 0
5           Unit0: Inact InSv
6           Unit1: Act InSv
7 Bsy_
8 RTS_      ISG      111111111 222222222 33
9 OffL_     123456789 0123456789 0123456789 01
10
11
12 Next      ISG
13
14 QueryCH_  ISG:
15 CONT_
16 Loopbk_
17
18
```

PM TPC critical (continued)

- 8 Post the ISG noted in step 5 by typing the following:

>POST n

where

n

is the ISG number.

and pressing the ENTER key.

A series of ISG channels will be displayed. Locate the channel noted in step 5.

Typical response on the MAP display:

```

CM  MS  IOD  Net  PM  CCS  LNS  Trks  Ext  APPL
.    .    .    .    n TPC  .    .    .    .    .
      *C*
ISG
0  Quit      PM    0    0    12    0    3    48
2  Post_     TMS    0    0    0    0    0    1
3
4          TMS 0  InSv  Links_00S:  CSide 0 , PSide 0
5          Unit0:  Inact  InSv
6          Unit1:  Act  InSv
7  Bsy_
8  RTS_      ISG          1111111111 2222222222 33
9  OffL_     123456789 0123456789 0123456789 01
10          0000.0000 000000.000 00000000000 00
11
12 Next      ISG 2 DCH 2 InSv TMS 0 port 17
13
14 QueryCH_  post 2
15 CONT_
16 Loopbk_
17
18

```

. = An inservice ISG channel

See the following table to determine what to do next.

If the channel is	Do
SysB	step 9
ManB	step 10
InSv	step 11

- 9 Busy the ISG channel that is SysB by typing the following string:

>BSY n

where

PM TPC
critical (continued)

n
is the ISG channel number.

and pressing the ENTER key.

Confirm request for busy by typing the following string:

>YES

and pressing the ENTER key.

Explanation: When the BSY command is issued while the ISG channel is in service, confirmation ("YES") is required before the ISG channel is removed from service.

In this situation, a "YES" response should be given in response to the prompt.

When the BSY command is issued while the ISG channel is in service, and negative confirmation is received in response to the prompt, the ISG channel remains in its current state.

- 10** Return the busied ISG channel to service by typing the following string:

>RTS n

where

n
is the ISG channel number.

and pressing the ENTER key.

If RTS is	Do
successful, the fault clears, and the alarm also clears	step 36
not successful	step 11

- 11** Verify that both virtual position controllers (VPCs) or type 2 TOPS MPX positions, noted in step 5, are powered up and running TOPS MPX applications.

(Sheet 1 of 2)

If	Do
VPCs are not powered up	Power up the VPCs. Wait five minutes for VPCs to complete reboot. If necessary, bring up the operator screen.
Position powered-up and no operator screen is displayed	Power down, wait ten seconds, then power up.

PM TPC critical (continued)

(Sheet 2 of 2)

If	Do
TPC critical alarm clears after VPCs are powered up	step 36
VPCs are powered up and operator screen is displayed	Go to TOPS MPX power-on self test procedure in <i>TOPS MPX Trouble Locating and Clearing Procedures</i> .

- 12** Post the ISTb TMS by typing the following string:

>POST ISTB

and pressing the ENTER key.

- 13** Access the DCH level of the MAP by typing the following string:

>DCH

and pressing the ENTER key.

Typical response on the MAP display:

	CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
	.	.	.	.	n TPC	.	.	.	.	.
					C					
				SysB	ManB	OffL	CBsy	ISTb	InSv	
0	Quit		PM	0	3	11	0	3	48	
2	Post_		TMS	0	0	0	0	1	0	
3										
4			TMS 0	ISTb	Links_00S:		CSide	0	PSide	4
5	Trnsl		Unit0:	Inact		InSv				
6	Tst		Unit1:	Act		InSv				
7	Bsy									
8	RTS		DCH	3	0	0	0	0	1	
9	OffL									
10	LoadPM		DCH							
11										
12	Next									
13										
14	QueryPM									
15	Disp									
16										
17										
18										

Shows 3 DCHs that are SysB.

DCH status line

- 14** From the DCH status line in the previous step, post the status of the DCH (SysB, ManB, CBsy, or ISTb) by typing the following string:

>POST <STATE>

and pressing the ENTER key.

PM TPC

critical (continued)

The DCH and ISG information will be listed. The status of the DCH will also be reported.

Record the DCH number, the ISG number, and the port number.

Typical response on the MAP display:

CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
				C					
	DCH		SysB	ManB	OffL	CBsy	ISTb	InSv	
0	Quit	PM	0	3	11	0	3	48	
2	Post_	TMS	0	0	0	0	1	0	
3									
4		TMS 0	ISTb	Links_00S:	CSide	0	PSide	4	
5	Trnsl	Unit0:	Inact	InSv					
6	Tst	Unit1:	Act	InSv					
7	Bsy								
8	RTS	DCH	3	0	0	0	0	1	
9	OffL								
10	LoadPM_	DCH	5 ISG	5 SysB	TMS	0	port 13	WAI	
11									
12	Next	post sysb							
13									
14	QueryPM								
15	Disp								
16									
17									
18									

Port number

DCH number and ISG number

Status and indication of S/W (WAI) problem.

Command to post problem type.

- 15** Busy the posted DCH by typing the following string:

>BSY

and pressing the ENTER key.

Confirm request for busy by typing the following string:

>YES

and pressing the ENTER key.

Explanation: When the BSY command is issued while the DCH is in service, confirmation ("YES") is required before the DCH is removed from service.

In this situation, a "YES" response should be given in response to the prompt.

When the BSY command is issued while the DCH is in service, and negative confirmation is received in response to the prompt, the DCH remains in its current state.

- 16** Test the posted DCH by typing the following string:

>TST

and pressing the ENTER key.

Typical response on the MAP display:

PM TPC

critical (continued)

```

CM  MS  IOD  Net  PM  CCS  LNS  Trks  Ext  APPL
.   .   .   .   n TPC .   .   .   .   .
      *C*
DCH          SysB  ManB  OffL  CBsy  ISTb  InSv
0 Quit      PM    0    2    11    0    3    49
2 Post_     TMS   0    0    0    0    1    0
3
4          TMS 0  ISTb  Links_00S: CSide 0  PSide 4
5 Trnsl      Unit0:  Inact  InSv
6 Tst        Unit1:  Act  InSv
7 Bsy
8 RTS        DCH   2    1    0    0    0    1
9 OffL
10 LoadPM   DCH   5  ISG   5  ManB  TMS   0 port 13
11
12 Next      tst
13           DCH 5   Out-of-service test initiated
14 QueryPM   Fail message received from PM
15 Disp      Site Flr RPos  Bay_id Shf  Description  Slot  EqPEC
16           HOST 01  B04  LTEI 00 51  TMS : 000    02  BX02
17           DCH 5 Tst Failed Testid : DCHIFdiag
18

```

Card list failure message for DCH

See the following table to determine what to do next.

If	Do
card list is produced	Go to <i>TOPS MPX Card Replacement Procedures</i> , and replace the card(s) listed. After card replacement procedure, go to step 17
Card list is produced and Tst failed. Testid : DCHIFdiag message displayed.	step17
DCH diagnostics are displayed	step 17
load failure message is generated	step 17

- 17** Load the DCH if diagnostics are displayed, if a load failure message is received, or after replacing the card by typing the following string:

>LOADPM

and pressing the ENTER key.

Typical response on the MAP display:

PM TPC critical (continued)

```
loadpm
Request submitted on DCH 5
DCH 5 load Passed:  EXC03BX
```

Note: The EXC03BX loadname (as shown on the MAP display above) is the load used in the EDCH (enhanced D-channel handler).

See the following table to determine what to do next.

If LOADPM	Do
is successful	Next step
failed and all cards replaced	step 35
failed and not replaced	Replace the DCH card. To determine the location of the DCH card to replace without a system generated card list, refer to the port number noted in step 14. Apply the port number to the following chart to determine the unit number and slot number. Refer to <i>TOPS MPX Card Replacement Procedures</i> for BX02 replacement instructions. Return to step 17 after replacing the card.
<i>If port no. is 13 15 17 19</i>	<i>Faulty card location is Unit 0, Slot 2 Unit 1, Slot 2 Unit 0, Slot 1 Unit 1, Slot 1</i>

- 18** Return the DCH to service by typing the following string:

>RTS

and pressing the ENTER key.

Typical response on the MAP display:

PM TPC critical (continued)

```

CM  MS  IOD  Net  PM  CCS  LNS  Trks  Ext  APPL
.   .   .   .   n  TPC  .   .   .   .
      *C*
DCH          SysB  ManB  OffL  CBsy  ISTb  InSv
0 Quit          PM    0    2    11    0    4    48
2 Post_        TMS    0    0    0    0    0    4
3
4          TMS 0  InSv  Links_00S:  CSide  0  PSide  0
5 Trnsl      Unit 0: Act InSv
6 Tst        Unit 1: Inact  InSv
7 Bsy
8 RTS        DCH    0    0    0    0    0    4
9 OffL
10 LoadPM    RTS
11 DCH5 Out-of-service test initiated
12 Next      DCH5 Tst Passed
13          DCH5 RTS Passed
14 QueryPM
15 Disp
16
17
18

```

See the following table to determine what to do next.

If RTS is	Do
successful and alarm is cleared	step 36
not successful	step 35
successful and alarm is not cleared	step 2 and repeat procedure

- 19** Refer to office records to determine why the TMS is ManB. The TMS must be returned to service as soon as possible because all positions are down. Post the ManB TMS by typing the following:

>POST MANB

and pressing the ENTER key.

- 20** Return the TMS to service by typing the following:

>RTSPM

PM TPC

critical (continued)

and pressing the ENTER key.

If RTS	Do
was successful	step 36
was not successful	step 35
experienced load failure	step 21

- 21** Load the TMS after replacing the card by typing the following string:

>LOADPMPM

and pressing the ENTER key.

If LOADPM is	Do
successful	step 20
not successful	step 35

- 22** Post the SysB TMS by typing the following:

>POSTSYSB

and pressing the ENTER key.

Typical response on the MAP display:

PM TPC

critical (continued)

Note: A power failure at the TMS will cause an alarm at both PM and EXT subsystems. Ensure that the TMS is powered up and no power alarm exists. Repair all EXT subsystem power problems before attempting to clear any PM subsystem alarms.

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.        .        .        .        n TPC      .        .        .        1 FSP      .
          *C*
TMS
0 Quit      PM      1      0      0      0      0      0      48
2 Post_     TMS      1      0      0      0      0      0      4
3 Listset
4           TMS 0 SysB Links_00S: CSide 0 , PSide 1
5 Trnsl_    Unit 0: Act      SysB Mtce
6 Tst_      Unit 1: Inact    SysB Mtce
7 Bsy_
8 RTS_      POST:
9 OffL
10 LoadPM_
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16
17 PERFORM
18 ISG

```

Note: To stop system maintenance activity, type the following:
>ABTK
 and press the ENTER key.

Note: A one (1) should appear under the SysB header for this alarm (as shown).

23 Determine possible TMS fault by typing the following:

>QUERYPM FLT

and pressing the ENTER key.

PM TPC critical (continued)

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.       .       .       .       n TPC
          *C*

TMS
0 Quit          PM      0      0      0      0      0      130
2 Post_        TMS     1      0      0      0      0      4
3 Listset
4              TMS 0 SysB Links_00S: CSide 1 , PSide 0
5 TrnsL_        Unit 0: Inact SysB
6 Tst_          Unit 1: Act  SysB
7 Bsy_
8 RTS_
9 OffL
10 LoadPM_     QueryPM FLT
11 Disp_
12 Next         CSide Links out of service
13 SwAct        Unit 0
14 QueryPM      System busy reason: Not loaded since power up
15 DCH          Unit 1
16              System busy reason: Not loaded since power up
17 PERFORM
18 ISG

```

Note: A one (1) should appear under the SysB header for this alarm (as shown).

See the following table to determine what to do next.

If	Do
WAI is reported	step 24
load failure is reported	step 24
other message failures are reported	step 27

- 24** Manually busy the TMS by typing the following:
>BSY PM
 and pressing the ENTER key.
- 25** Load the TMS after load failure or other failure message occurs, or after replacing the card by typing the following string:
>LOADPM PM

PM TPC critical (continued)

and pressing the ENTER key.

If LOADPM is	Do
successful	step 27
not successful and card list is not produced	step 35
not successful and card list is produced	step 26

- 26** If this is the first time to replace a card on the card list, replace the first card. If returning to this step, return the last card replaced to the TMS and return the spare to the spares cabinet, then replace the next card on the list.
If the card replaced was a 6X45, 6X46, 6X47, 2X70, or a BX01, go to step 25.
If the card replaced was a BX02, go to step 29.
If the card replaced was not a 6X45, 6X46, 6X47, 2X70, BX01, or a BX02, go to step 27.
- 27** Test the posted TMS by typing the following string:
>TST PM
and pressing the ENTER key.

If test	Do
passed	step 28
is not successful and card list is produced	step 26
failed and no card list is produced	step 35

- 28** Return the TMS to service by typing the following:
>RTS PM
and pressing the ENTER key.

(Sheet 1 of 2)

If RTS	Do
was successful	step 36
is not successful and card list is produced	step 26

PM TPC

critical (continued)

(Sheet 2 of 2)

If RTS	Do
failed and no card list is produced	step 35
was not successful and experiences WAI or load failure	step 25

- 29 Access the DCH level of the MAP by typing the following string:
>DCH
and pressing the ENTER key.
- 30 Post the affected DCH by typing the following string:
>POST SYSB
and pressing the ENTER key.
- 31 Busy the posted DCH by typing the following string:
>BSY
and pressing the ENTER key.
Confirm request for busy by typing the following string:
>YES
and pressing the ENTER key.
Explanation: When the BSY command is issued while the DCH is in service, confirmation ("YES") is required before the DCH is removed from service.
In this situation, a "YES" response should be given in response to the prompt.
When the BSY command is issued while the DCH is in service, and negative confirmation is received in response to the prompt, the DCH remains in its current state.
- 32 Load the DCH by typing the following string:
>LOADPM
and pressing the ENTER key.
- 33 Return the DCH to service by typing the following string:
>RTS
and pressing the ENTER key.
- 34 Return to the TMS level of the MAP by typing the following string:
>QUIT
and pressing the ENTER key.

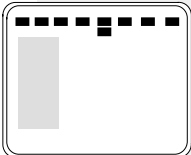
If	Do
at the TMS level of the MAP	step 28

PM TPC
critical (end)

- 35** For further assistance in clearing this alarm, contact the personnel responsible for higher level support.
- 36** You have successfully completed this procedure. If there are other alarms displayed, reference the appropriate alarm clearing procedures for the indicated alarms.

PM TPC (for MP)
critical

Alarm display

	CM	MS	IOD	Net	PM n TPC *C*	Lns	Trks	Ext	APPL
	.	.	.	.		.	.	.	.

Indication

The n TPC indication is under the peripheral module (PM) subsystem header. The PM subsystem header is at the maintenance level of the MAP (maintenance and administration position). The TPC indicates a TPC alarm. The C indication under the n TPC indicates a critical alarm.

This procedure applies to an integrated TPC, which supports up to four integrated MP positions.

Meaning

The TPC alarm indicates the number (n) of PMs that are in the critical state.

Result

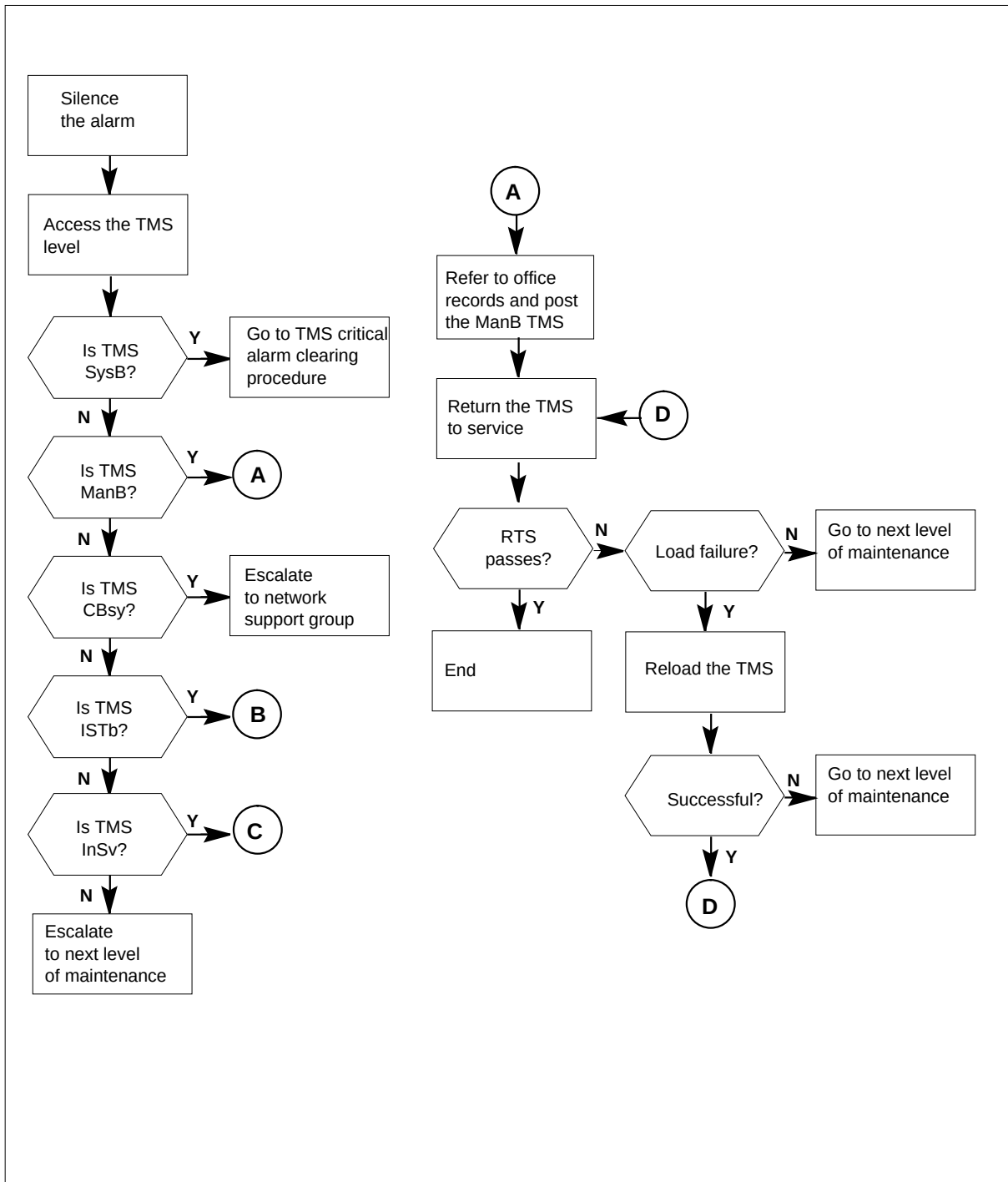
If you do not clear the TPC critical alarm immediately, the system loses call handling capabilities.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

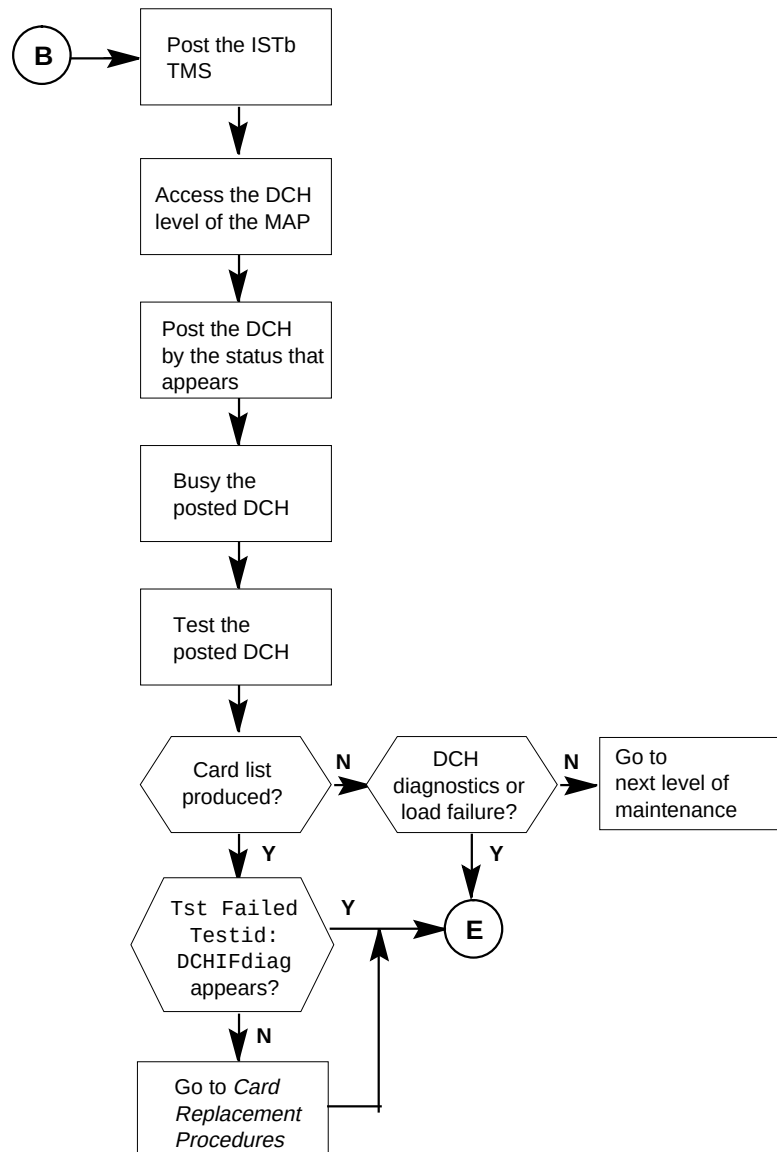
PM TPC (for MP) critical (continued)

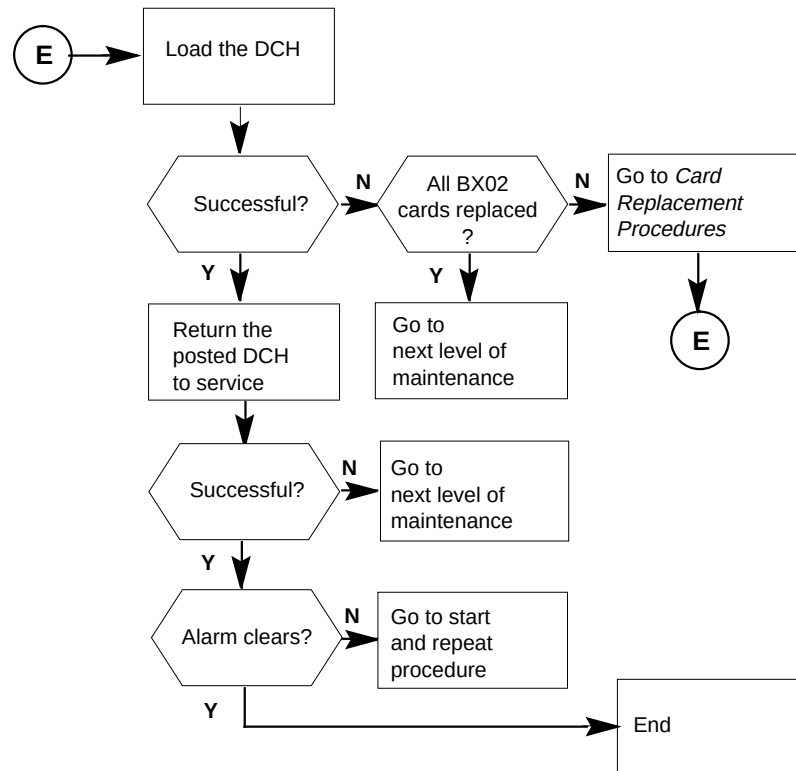
Summary of clearing a PM TPC (for MP) critical alarm



PM TPC (for MP) critical (continued)

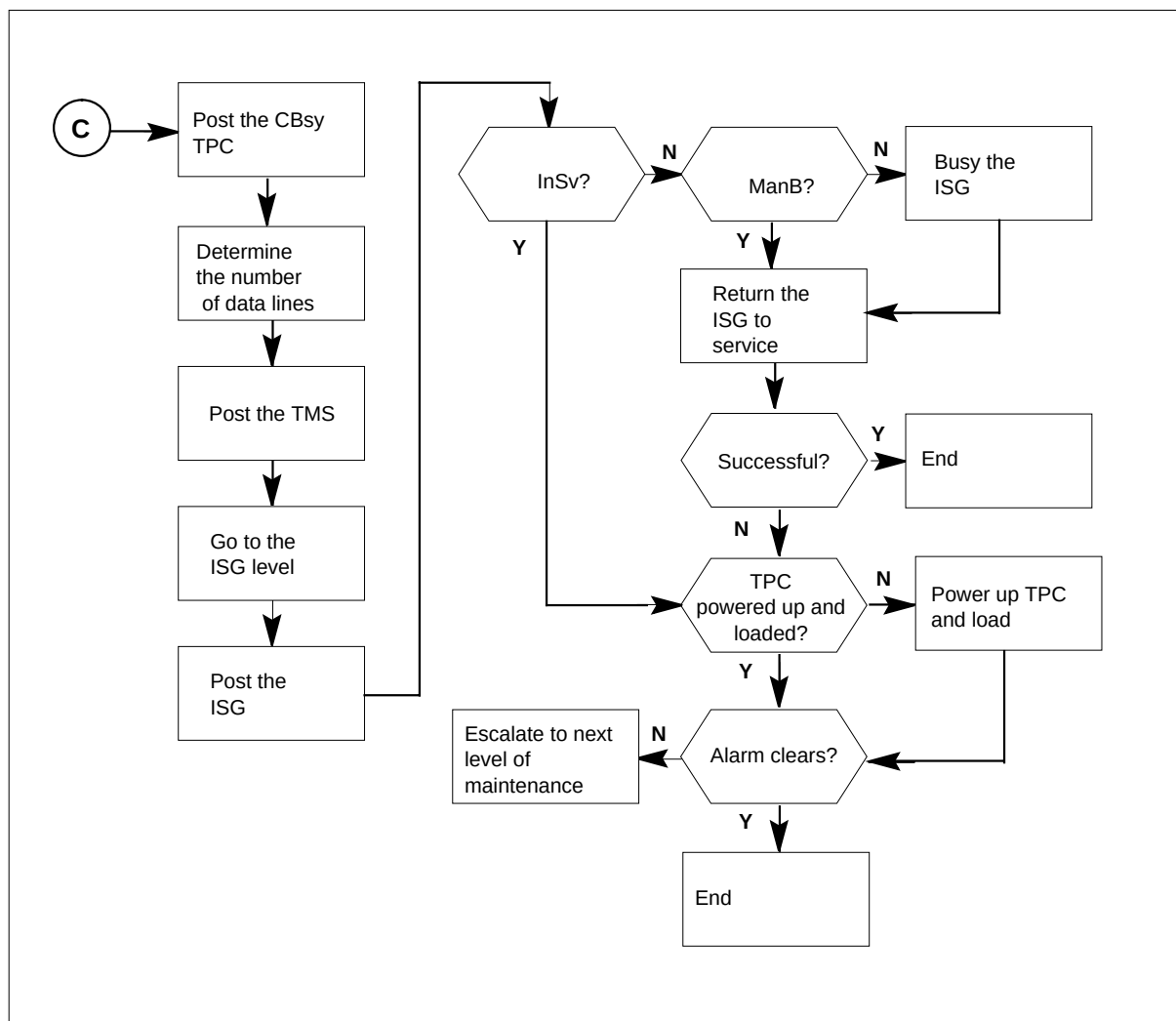
Summary of clearing a PM TPC (for MP) critical alarm (continued)



**PM TPC (for MP)
critical** (continued)**Summary of clearing a PM TPC (for MP) critical alarm (continued)**

PM TPC (for MP) critical (continued)

Summary of clearing a PM TPC (for MP) critical alarm (continued)



PM TPC (for MP) critical (continued)

Clearing a PM TPC (for MP) critical alarm

At the MAP display

1

ATTENTION

You must enter this procedure from a step in the procedure to clear a PM system level alarm. This step identifies a defect in a TMS.

To silence the alarm, type

>MAPCI;MTC;SIL

and press the ENTER key.

2

The TMS must be in service before you attempt to clear a TPC alarm. To obtain the status of the TMS, type

>PM;POST TMS ALL

and press the ENTER key.

PM TPC (for MP) critical (continued)

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TPC   .    .    .    1 FSP   .
          *C*

TMS                               SysB  ManB  OffL  CBsy  ISTb  InSv
0  Quit      PM      2    0    9    0    3    53
2  Post_     TMS     2    0    0    0    1    0
3  Listset
4
5  TrnsL_    Unit 0:
6  Tst_      Unit 1:
7  Bsy_      POST:
8  RTS_      No PM posted
9  OffL
10 LoadPM_
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16
17 PERFORM
18 ISG

```

In this example, two TMSs
are SysB and
one TMS is ISTb.

A power failure at a TMS
causes an alarm at both PM
and EXT subsystems. Make sure
that the TMS is powered up
and no power alarm is present.
Repair all EXT subsystem
power problems before
you attempt to clear any
PM subsystem alarms.

If the TMS status

Do

is SysB

Go to procedure to clear TMS
critical alarm.

is ManB

step 17

is CBsy

This status indicates a problem
in the network. Contact the net-
work support group for addition-
al help.

is ISTb

This status indicates a problem
in the DCH. Go to step 10.

is InSv

step 3

- 3** If the TMS is in service and a TPC critical alarm occurs, the TPC is C-side busy. To post the C-side busy (CBsy) TPC, type

>POST TPC CBSY

and press the ENTER key.

PM TPC (for MP) critical (continued)

Example of a MAP display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
				C					
TPC			SysB	ManB	OffL	CBsy	ISTb	InSv	
0	Quit	PM	0	0	0	1	3	53	
2	Post_	TPC	0	0	0	1	1	0	
3									
4									
5	Trnsl		TPC 12	CBsy					
6	Tst								
7	Bsy								
8	RTS	Post :							
9	OffL								
10									
11	Disp_								
12	Next								
13									
14	QueryPM								
15	MP								
16									
17									
18									

If more than one TPC is CBsy, the system parts the TPCs one TPC at a time. In this example, TPC 12 is C-side busy.

- 4 To determine the number of data lines, type

>TRNSL

and press the ENTER key.

Note: How many data lines are present, 1 or 2? Record the TMS number, the ISG number, and the ISG channel number for each data line.

PM TPC (for MP)
critical (continued)

Example of a MAP display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
C									
TPC			SysB	ManB	OffL	CBsy	ISTb	InSv	
0	Quit	PM	0	0	0	1	3	53	
2	Post_	TPC	0	0	0	1	1	0	
3									
4		TPC	12	CBsy	Line	ISG		ISG channel	
5	Trnsl_			type	number			number	
6	Tst_	Trnsl							
7	Bsy	TMS	0	0	5:	data;	ISG	2	5
8	RTS	TMS	0	0	6:	data;	ISG	3	12
9	OffL	TMS	0	0	1:	voice;	TOPSP	OS	6; MP state:PMB: VT state:PMB
10		TMS	0	0	2:	voice;	TOPSP	OS	7; MP state:PMB: VT state:PMB
11	Disp_	TMS	0	0	3:	voice;	TOPSP	OS	8; MP state:PMB: VT state:PMB
12	Next	TMS	0	0	4:	voice;	TOPSP	OS	9; MP state:PMB: VT state:PMB
13									
14	QueryPM								
15	MP								
16									
17									
18									

- 5 To post the TMS identified in the previous step, type
>POST TMS n
and press the ENTER key.
where
n is the TMS number.

PM TPC (for MP) critical (continued)

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TPC   .    .    .    .
      *C*
TMS
0 Quit      PM      0      0      0      1      0      53
2 Post_     TMS     0      0      0      1      0      0
3 Listset
4           TMS     0      CBsy   Links_OOS: CSide 0, PSide 0
5 Trnsl_    Unit 0: Act   CBsy
6 Tst_      Unit 1: InAct Cbsy
7 Bsy_      POST:
8 RTS_
9 OffL
10 LoadPM_
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16
17 PERFORM
18 ISG

```

Note: An arrow points from the text "TMS number 0 from previous example display" to the "TMS 0" entry in line 4.

- 6 To go to the ISG level of the MAP and post the ISG that appears in step 4, type **>ISG;POST n** and press the ENTER key.
where
 n is the ISG number.
 A series of ISG channels appears. Locate the channel that appears in step 4.

PM TPC (for MP)
critical (continued)

Example of a MAP display

```
CM  MS  IOD  Net  PM  CCS  Lns  Trks  Ext  APPL
.   .   .   .   n  TPC  .   .   .   .
      *C*
ISG
0  Quit    PM      2   0   9   0   3   53
2  Post_   TMS     2   0   0   0   1   0
3  Listset
4          TMS  0   InSv  Links_00S: CSide 0, PSide 0
5  TrnsL_  Unit 0: InAct  InSv
6  Tst_    Unit 1: Act   InSv
7  Bsy_
8  RTS_    ISG
9  OffL_    /
10          123456789 0123456789 0123456789 01
11          0000S0000 000000.000 0000000000 00
12 Next    ISG 2 DCH 2 ISTb TMS 0 port 17
13
14 QueryCH_ post 2
15 CONT_
16 Loopbk_
17
18
```

ISG channel
S = system busy
= in-service channel

If the channel	Do
is SysB	step 7
is ManB	step 8
is InSv	step 9

- 7 To busy the ISG channel that is SysB, type
>BSY n
and press the ENTER key.
where
n is the ISG channel number.
- When the system issues a BSY command while the ISG channel is in service, the system requires a confirmation. The system requires this confirmation before the system removes the ISG channel from service. If the system requests a confirmation, confirm the request for busy. To confirm the request, type
>yes
and press the ENTER key.
- If the system receives a negative confirmation (NO) in response to the prompt, the ISG channel remains in the current state.

PM TPC (for MP)
critical (continued)

- 8** To return the busied ISG channel to service, type
>RTS n
 and press the ENTER key.
where
 n is the ISG channel number.

If RTS	Do
is successful and the alarm clears	step 21
is not successful	step 9

- 9** Verify that the TPC in step 3 is powered up and running TOPS MP applications.

If the TPC	Do
is not powered up	Power up the TPC. If necessary, refer the procedure in the <i>Trouble Locating and Clearing</i> to bring the HSDA links (card 1) in service and return to this point.
critical alarm clears after the TPC is powered up	step 21
is powered up. The TPC critical alarm remains.	step 20

- 10** To post the ISTb TMS, type
>POST istb
 and press the ENTER key.

- 11** To access the DCH level of the MAP, type
>DCH
 and press the ENTER key.

PM TPC (for MP) critical (continued)

Example of a MAP display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
				C					
DCH				SysB	ManB	OffL	CBsy	ISTb	InSv
0	Quit	PM	0	0	3	11	0	3	48
2	Post_	TMS	0	0	0	0	0	1	0
3									
4		TMS	0	ISTb	Links_00S:	CSide	0,	PSide	4
5	Trnsl_	Unit 0:	InAct	InSv					
6	Tst_	Unit 1:	Act	InSv					
7	Bsy_								
8	RTS_	DCH	3	0	0	0	0	1	
9	OffL								
10	LoadPM_	DCH							
11									
12	Next								
13									
14	QueryPM								
15	Disp								
16									
17									
18									

Indicates 3 DCHs that are SysB.

DCH status line

- 12** From the DCH status line in the previous step, post the status of the DCH. The status of the DCH can be SysB, ManB, CBsy, or ISTb. To post the status, type

>post <state>

and press the ENTER key.

The DCH and ISG information appears. The system reports the status of the DCH. Record the DCH number, the ISG number, and the port number.

PM TPC (for MP) critical (continued)

Example of a MAP display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
				C					
DCH				SysB	ManB	OffL	CBsy	ISTb	InSv
0	Quit	PM	0	3	11	0	0	3	48
2	Post_	TMS	0	0	0	0	0	1	0
3									
4		TMS	0	ISTb	Links_00S:		CSide	0,	PSide 4
5	Trnsl_	Unit 0:	InAct	InSv					
6	Tst_	Unit 1:	Act	InSv					
7	Bsy_								
8	RTS_		DCH	3	0	0	0	0	1
9	OffL								
10	LoadPM_		DCH	5	ISG	5	SysB	TMS	0 port 13 WAI
11									
12	Next		post	sysb					
13									
14	QueryPM								
15	Disp								
16									
17									
18									

ISG number

DCH number

Command to post problem type (SysB)

Port number

Status and indication of S/W (WAI) problem

- 13** To busy the posted DCH, type

>BSY

and press the ENTER key.

If the system issues a BSY command when the DCH is in service, the system requires a confirmation. The system requires this confirmation before the system removes the DCH from service. If the system requests this confirmation, confirm the request for busy. To confirm this request, type

>yes

and press the ENTER key.

If the system receives a negative confirmation (NO) in response to the prompt, the DCH remains in the current state.

- 14** To test the posted DCH, type

>tst

and press the ENTER key.

PM TPC (for MP) critical (continued)

Example of a MAP display

```

CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TPC   .    .    .    .    .
      *C*

DCH                               SysB  ManB  OffL  CBsy  ISTb  InSv
0  Quit      PM      0    2    11    0    3    49
2  Post_     TMS     0    0     0    0    1    0
3
4                               TMS  0    ISTb  Links_00S: CSide 0, PSide 4
5  TrnsL_    Unit 0: InAct InSv
6  Tst_      Unit 1: Act   InSv
7  Bsy
8  RTS_      DCH     2    1     0    0    0    1
9  OffL
10 LoadPM_   DCH    5 ISG  5 ManB TMS  0 port 13
11
12 Next      tst
13           DCH 5 Out-of-service test initiated
14 QueryPM   Fail message received from PM
15 Disp      Site Flr RPos Bay_id Shf Description Slot EqPEC
16           HOST 01  B04 LTEI 00  51 TMS : 000    02  BX02
17           DCH 5 Tst Failed Testid : DCHIFdiag
18

```

Card list failure message for DCH

If the system

Do

generates a card list

Go to *Card Replacement procedures*, and replace the card(s) listed. After card replacement procedure, go to step 15.

generates a card list and "Tst Failed Testid : DCHIF diag" appears

step 15

DCH diagnostics appear

step 15

generates a load failure message

step 15

- 15** Load the DCH if diagnostics appear, if a load failure message occurs, or after you replace the card. To load the DCH, type

>LOADPM

and press the ENTER key.

PM TPC (for MP) critical (continued)

Example of a MAP display

```
loadpm
Request submitted on DCH 5
DCH 5 load Passed:  EXC03BX
```

Note: The EXC03BX loadname that appears on the previous MAP display is the load that the improved D-channel handler (EDCH) uses.

If LOADPM	Do									
completes	next step									
fails and you did not replace the card	Replace the DCH card. To determine the location of the DCH card to replace without a card list, refer to the port number in step 14. Apply the port number to the following chart to determine the unit number and slot number. Refer to <i>Card Replacement Procedures</i> for BX02 replacement instructions. Return to step 15 after you replace the card. <i>If port no. is that</i> <i>The card location has faults is</i> <table><tr><td>13</td><td>Unit 0</td><td>Slot 2</td></tr><tr><td>15</td><td>Unit 1</td><td>Slot 2</td></tr><tr><td>Unit 0 Slot 1</td><td>19</td><td>Unit 1 Slot 1</td></tr></table>	13	Unit 0	Slot 2	15	Unit 1	Slot 2	Unit 0 Slot 1	19	Unit 1 Slot 1
13	Unit 0	Slot 2								
15	Unit 1	Slot 2								
Unit 0 Slot 1	19	Unit 1 Slot 1								
fails and you replaced all the cards	step 20									

- 16** To return the DCH to service, type
>RTS
and press the ENTER key.

PM TPC (for MP)
critical (continued)

Example of a MAP display

```
CM   MS   IOD   Net   PM   CCS   Lns   Trks   Ext   APPL
.    .    .    .    n TPC   .    .    .    .    .
      *C*
DCH
0 Quit      PM      0    2    11    0    4    49
2 Post_     TMS     0    0     0    0    0    4
3
4           TMS     0    InSv  Links_OOS: CSide 0, PSide 0
5 Trnsl_    Unit 0: Act   InSv
6 Tst_      Unit 1: InAct InSv
7 Bsy
8 RTS_      DCH     0    0     0    0    0    4
9 OffL
10 LoadPM_  RTS
11          DCH 5 Out-of-service test initiated
12 Next     DCH 5 Tst Passed
13          DCH 5 RTS Passed
14 QueryPM
15 Disp
16
17
18
```

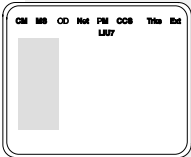
If RTS		Do
is successful and alarm clears		step 21
is not successful		step 20
is successful and alarm does not clear		step 2 and repeat procedure
17	Refer to office records to determine why the TMS is ManB. The TMS must be returned to service immediately because all TOPS MP positions are down. To post the ManB TMS, type >post manb and press the ENTER key.	
18	To return the TMS to service, type >RTS PM and press the ENTER key.	
If RTS		Do
is successful		step 21

PM TPC (for MP)
critical (end)

	If RTS	Do
	is not successful and does not experience load failure	step 20
	is not successful and experiences load failure	step 19
19	To load the TMS, type >LOADPM PM and press the ENTER key.	
	If LOADPM is	Do
	successful	step 18
	not successful	step 20
20	For additional support to clear this alarm, contact the next level of support.	
21	The procedure is complete. If other alarms appear, refer to the correct alarm clearing procedures.	

PM TPC (for MP and IWS)
major

Alarm display

	CM	MS	IOD	Net	PM	Lns	Trks	Ext	APPL
	.	.	.	.	n TPC	.	.	.	.
					M				

Indication

A TPC indication indicates a TPC alarm. The TPC indication appears under the PM (peripheral module) subsystem header. The n indication is the number of TPCs in this state. This header is at the maintenance level of the MAP (maintenance and administration position). The M indication under the n TPC indicates a major alarm.

Enter this procedure from a PM system level alarm clearing procedure step. This step identified a fault associated with a TPC.

This procedure applies to both types of TPCs as follow:

- An integrated TPC, which supports up to four integrated MP positions.
- A virtual TPC, which supports MPX-IWS positions on a token ring.

The TOPS MPX system does not have a TOPS position controller (TPC). The operating company programs the TPC functionality in the type 2 TOPS MPX positions in the token ring. The type-2 TOPS MPX position is the virtual-position controller (VPC). Therefore, the n TPC indication indicates a VPC alarm.

Meaning

The indicated number (n) of PMs are in the major state.

PM TPC (for MP and IWS) major (continued)

Result

The result depends on the type of TPC and failure (determined by this procedure) as covered in this procedure as follow:

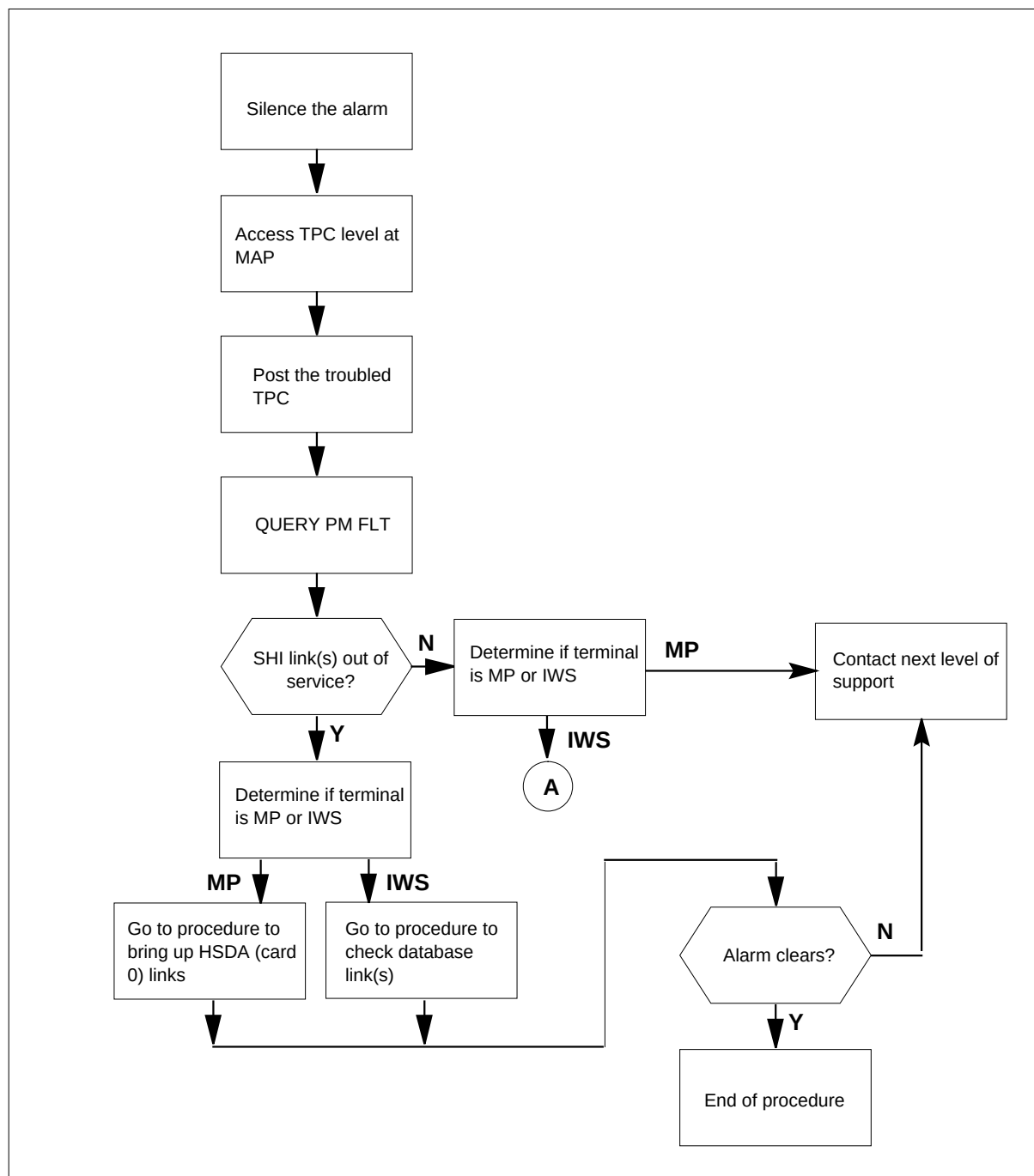
- For failure of a database link of either TPC:
Clear this alarm as soon as possible. For an MP position, the links to the DAS (Directory Assistance System) are out of service. For an IWS position, the links to an external database are out of service.
- For failures other than a database link of a VPC:
The VPCs are redundant in each token ring. A TPC major alarm does not affect call handling abilities for a token ring. Clear this alarm immediately. Loss of call handling abilities can occur if a fault occurs in the remaining VPC unit.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

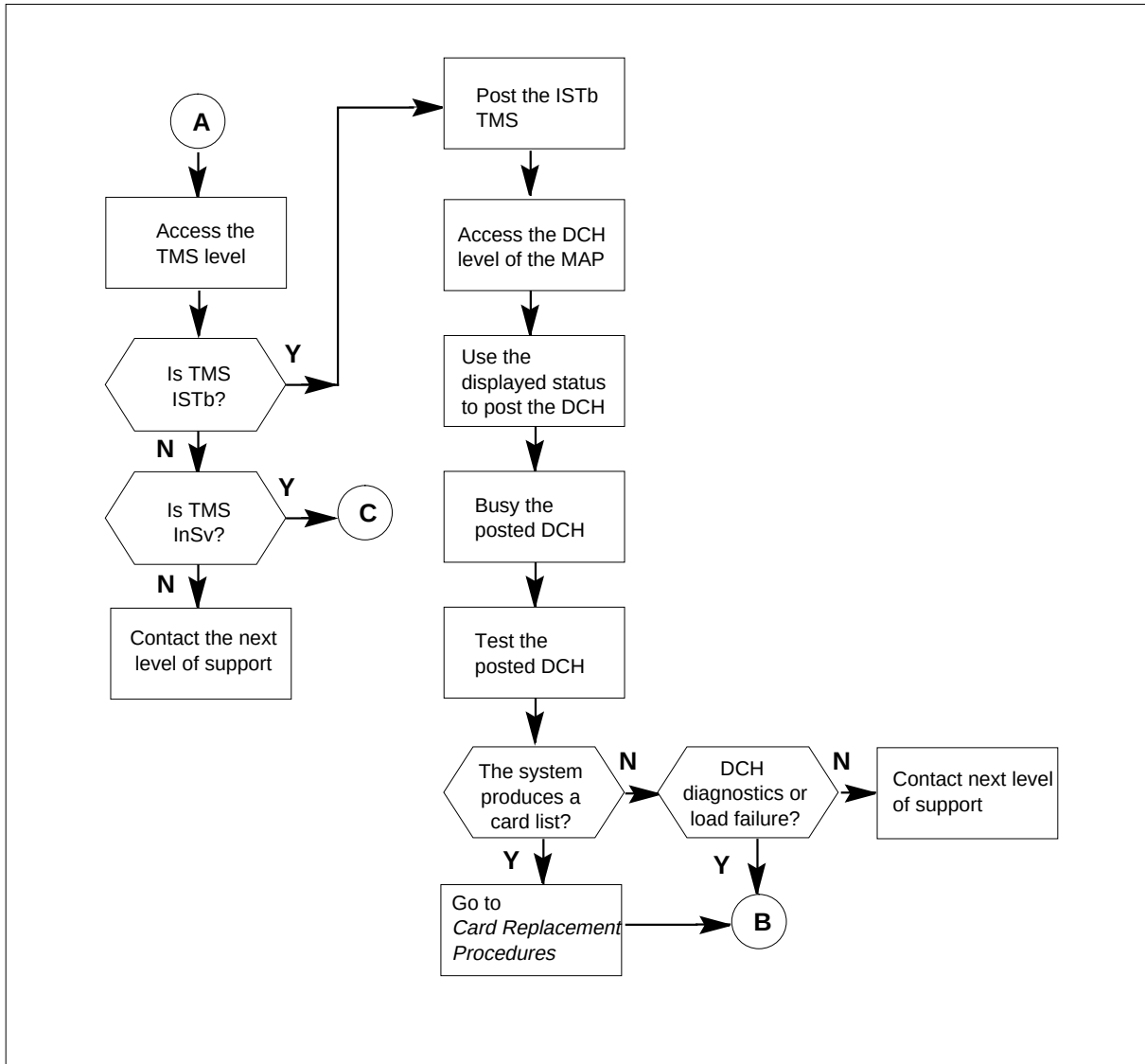
PM TPC (for MP and IWS) major (continued)

Summary of how to clear a PM TPC major alarm



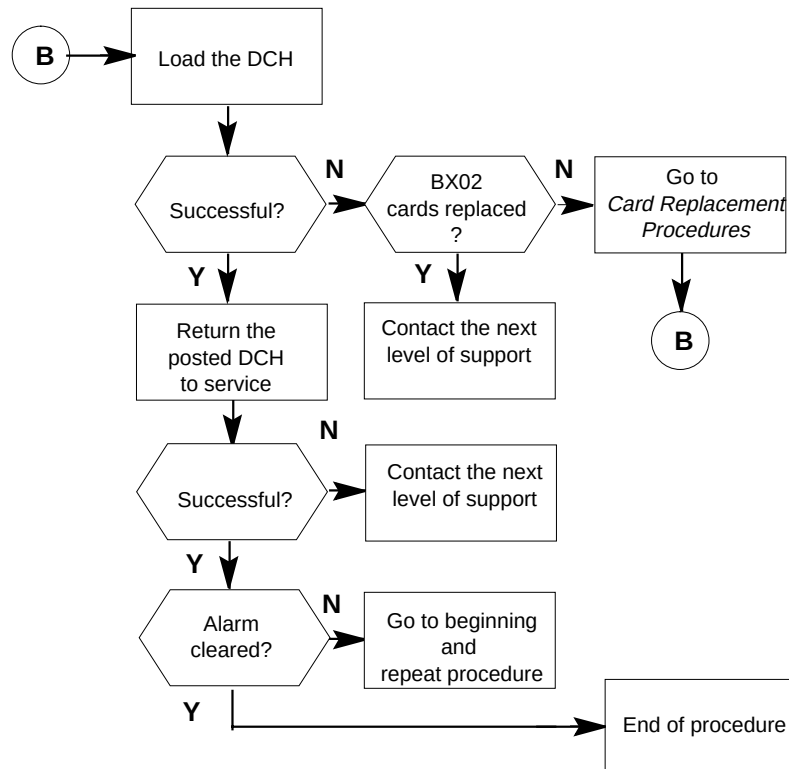
PM TPC (for MP and IWS) major (continued)

Summary of how to clear a PM TPC major alarm (continued)



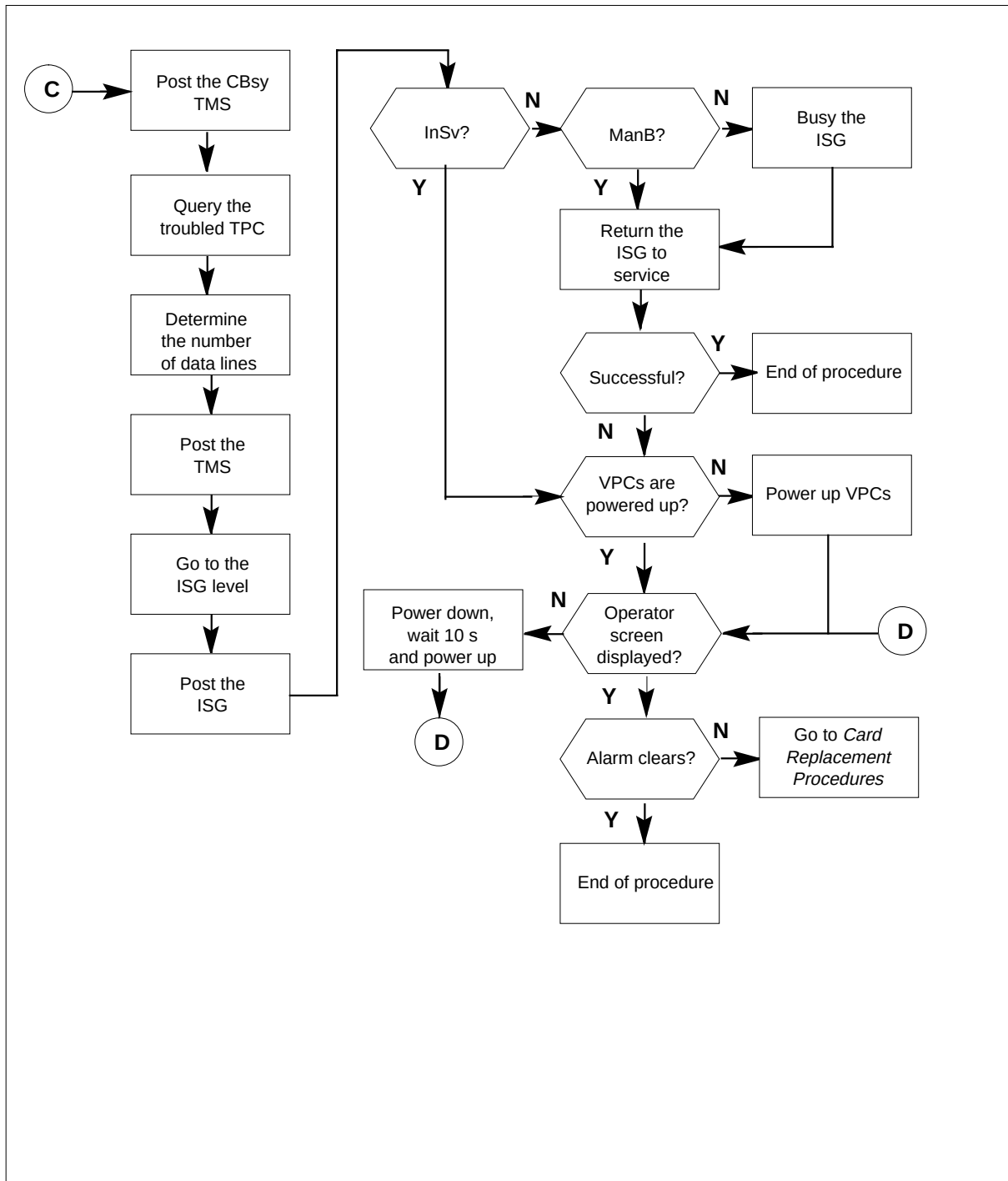
PM TPC (for MP and IWS) major (continued)

Summary of how to clear a PM TPC major alarm (continued)



PM TPC (for MP and IWS) major (continued)

Summary of how to clear a PM TPC major alarm (continued)



PM TPC (for MP and IWS)
major (continued)

Clearing a PM TPC (for MP and IWS) major alarm

At the MAP terminal

- 1
- To silence the alarm, type
>MAPCI;MTC;SIL
and press the Enter key.
- 2
- To access the TPC level of the MAP and post the alarm that has defects, type
>PM;POST TPC ISTB
and press the Enter key.

Example of a MAP response

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	0	0	10	0	1	130
TPC	0	0	0	0	1	4
TPC 20	ISTb					

- 3
- To query for fault indicators, type
>QUERYPM FLT
and press the Enter key.

Example of a MAP response

QueryPM flt
The following node in-service trouble exist:
SHI link(s) out of service

If trouble message	Do
is SHI link(s) out of service	step 4
is another message	step 7

- 4
- The position type requires identification, whether MP or IWS, The MAP display is at the TPC level from the command in step 3. Enter the following series of commands to determine a sample position number connected to the ISTB TPC, type
>POST TPC 20

PM TPC (for MP and IWS) major (continued)

>MP

>POST TPC 20

The positions connected to the TPC are listed as shown in the following example.

Example of a MAP response

```
POS 200 TPC 20 MP 0 InSv
Size of post set: 4
post tpc 20
```

The above display indicates that the TPC serves position number 20.

- 5 Determine the type of position, type

>TABLE TOPSP0S; POS 200

Example of a MAP response for an MP position

```
200 TMS 1 1 6 NPDGP DS1SIG TMS MP ASCII 107 3 OPR 5
TOPSACD ALL ALL
```

The above example is for an MP position because the protocol is ASCII.

Example of a MAP response for an IWS position

```
200 TMS 1 1 6 NPDGP DS1SIG TMS MP OPP 107 3 OPR 5
TOPSACD ALL ALL
```

The above example is for an IWS position because the protocol is OPP.

If position type	Do
MP	Go to the <i>Trouble Locating and Clearing Procedures Manual</i> , routine "TOPS MP Operator compliant (standalone/integrated) Clearing DA access trouble" to bring the HSDA links (card 0) in service and return to step 6.

PM TPC (for MP and IWS) major (continued)

	If position type	Do
	IWS	Go to the <i>Trouble Locating and Clearing Procedures Manual</i> , routine "TOPS IWS Operator compliant Clearing database access trouble" to restore access to the database and return to step 6.
6	Enter this step from the correct trouble locating and clearing procedure as indicated in step 5.	
	If alarm	Do
	clears	step 27
	does not clear	step 26
7	The position type requires identification, whether MP or IWS, The MAP display is at the TPC level from the command in step 3. Enter the following series of commands to determine a sample position number connected to the ISTB TPC, type >POST TPC 20 >MP >POST TPC 20 The positions connected to the TPC are listed as shown in the following example.	

Example of a MAP response

```
POS 200  TPC 20  MP 0  InSv
Size of post set:  4
post tpc 20
```

The above display indicates that the TPC serves position number 20.

- 8 Determine the type of position, type
- >TABLE TOPSP0S; POS 200**

Example of a MAP response for an MP position

```
200 TMS 1 1 6 NPDGP DS1SIG TMS MP ASCII 107 3 OPR 5
TOPSACD ALL ALL
```

PM TPC (for MP and IWS) major (continued)

The above example is for an MP position because the protocol is ASCII.

Example of a MAP response for an IWS position

```
200 TMS 1 1 6 NPDGP DS1SIG TMS MP OPP 107 3 OPR 5
      TOPSACD ALL ALL
```

The above example is for an IWS position because the protocol is OPP.

If position type	Do
MP	Go to step 26.
IWS	Go to step 9.

9 To access the TMS level of the MAP and post the TMS, type

>PM;POST TMS

and press the ENTER key.

Typical response on the MAP display:

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.       .       .       .       n TPC   .       .       .       .       .
      M
TMS      SysB   ManB   OffL   CBsy   ISTb   InSv
0 Quit      PM      0      0      9      0      3      53
2 Post_     TMS     1      0      0      0      0      0
3 Listset
4           TMS     Links_OOS: CSide , PSide
5 Trnsl_    Unit0:
6 Tst_      Unit1:
7 Bsy_      POST:
8 RTS_      No PM posted
9 OffL
10 LoadPM_
11 Disp_
12 Next
13 SwAct
14 QueryPM
15 DCH
16
17 PERFORM
18 ISG
```

Note:

This indicator is the
Critical information.
This TMS is SysB.

PM TPC (for MP and IWS)
major (continued)

See the following table to determine the next action.

If TMS status	Do
is ISTb	This status indicates a problem that relates to a DCH. Go to step 19.
is InSv	step 10

- 10 To post the C-side busy (CBsy) TPC, type
>POST TPC CBSY
and press the ENTER key.

Typical response on the MAP display:

	CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
	.	.	.	.	n TPC	.	.	.	.	.
					M					
	TPC			SysB	ManB	OffL	CBsy	ISTb	InSv	
0	Quit		PM	0	0	0	0	3	53	
2	Post_		TPC	0	0	0	1	0	0	
3										
4				post tpc cbsy						
5	Trnsl			TPC 0 CBsy						
6	Tst									
7	Bsy									
8	RTS									
9	OffL									
10										
11	Disp_									
12	Next									
13										
14	QueryPM									
15	MP									
16										
17										
18										

- 11 To query the TPC that has faults, type
>QUERYPM
and press the ENTER key.
Record the TOPSPOS(ition) numbers of the MP0 and MP1 VPCs.
Four TOPS MPX positions appear. Position MP0 is always the primary VPC.
Position MP1 is the secondary VPC. The token ring is a redundant system.

PM TPC (for MP and IWS) major (continued)

Typical response on the MAP display:

CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
							M		
	TPC		SysB	ManB	OffL	CBsy	ISTb	InSv	
0	Quit	PM	0	0	9	0	3	53	
2	Post_	TPC	0	0	0	1	0	0	
3									
4		TPC	0	CBsy					
5	Trnsl								
6	Tst	TPC Load File:	0						
7	Bsy	PM Type:	TPC	Int. No.:	0	Node_No:	132		
8	RTS	Site Flr	RPos	Bay_id	Shf	Description	Slot	EqPEC	
9	OffL	00	A00	PCE 00	00	TPC: 000			
10									
11	Disp_								
12	Next	MP	0:	TOPSP0S	6				
13		MP	1:	TOPSP0S	7				
14	QueryPM	MP	2:	TOPSP0S	8				
15	MP	MP	3:	TOPSP0S	9				
16									
17									
18									

Note: This indicator is the Critical information. The MP0 is always primary. The MP1 is secondary in redundant system. The TOPSP0S(ition) for MP0 is 6. The TOPSP0S(ition) for MP1 is 7.

12 To determine the data lines and link information, type

>TRNSL

and press the ENTER key.

Two data lines appear. The two lines indicate that the system is redundant. A failure of one of the VPCs causes the alarm. Record the TMS number, the ISG number, and the ISG channel number for the two data lines.

Typical response on the MAP display:

PM TPC (for MP and IWS) major (continued)

CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
TPC			SysB	ManB	OffL	CBsy	ISTb	InSv	
0 Quit		PM	0	0	0	0	3	53	
2 Post_		TPC	0	0	0	2	0	0	
3									
4		TPC	0	CBsy	Line type	ISG number	ISG channel number		
5 TrnsL									
6 Tst		TrnsL							
7 Bsy		TMS	0 0 5: data;		ISG	2 5			
8 RTS		TMS	0 0 6: data;		ISG	3 12			
9 OffL		TMS	0 0 1: voice;		TOPSPOS	6;	MP	state:PMB: VT	state:PMB
10		TMS	0 0 2: voice;		TOPSPOS	7;	MP	state:PMB: VT	state:PMB
11 Disp_		TMS	0 0 3: voice;		TOPSPOS	8;	MP	state:PMB: VT	state:PMB
12 Next		TMS	0 0 4: voice;		TOPSPOS	9;	MP	state:PMB: VT	state:PMB
13									
14 QueryPM									
15 MP									
16									
17									
18									

13 To post the TMS from the previous step, type

>POST TMS n

and press the ENTER key.

where

n

is the TMS number.

Typical response on the MAP display:

PM TPC (for MP and IWS) major (continued)

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
				M					
TMS			SysB	ManB	OffL	CBsy	ISTb	InSv	
0 Quit		PM	0	0	0	0	1	48	
2 Post_		TMS	0	0	0	0	0	4	
3 Listset									
4		TMS	0	InSv	Links_00S:	CSide	0	, PSide	0
5 TrnsI_		Unit	0:	Act	InSv	Mtce			
6 Tst_		Unit	1:	Inact	InSv	Mtce			
7 Bsy_		POST:							
8 RTS_									
9 OffL									
10 LoadPM_									
11 Disp_									
12 Next									
13 SwAct									
14 QueryPM									
15 DCH									
16									
17 PERFORM									
18 ISG									

Note:
To stop system
maintenance activity,
type
>ABTK
and press the ENTER key.

- 14** To go to the ISG level of the MAP display, type
>ISG
and press the ENTER key.
Typical response on the MAP display:

PM TPC (for MP and IWS)
major (continued)

	CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
	.	.	.	.	n TPC	.	.	.	.	.
ISG				SysB	ManB	OffL	CBsy	ISTb	InSv	
0	Quit		PM	0	0	12	0	3	48	
2	Post_		TMS	0	0	0	0	1	0	
3										
4			TMS 0	ISTb	Links_00S:		CSide	0 ,	PSide	4
5			Unit0:	Inact	InSv					
6			Unit1:	Act	InSv					
7	Bsy_									
8	RTS_		ISG		1111111111	2222222222			33	
9	OffL			123456789	0123456789	0123456789			01	
10										
11										
12	Next_		ISG							
13										
14	QueryCH_		ISG:							
15	CONT_									
16	Loopbk_									
17										
18										

- 15 To post one of the ISGs from step 12, type
 >POST n
 where
 n
 is the ISG number.
and press the ENTER key.
A series of ISG channels appear. Locate the channel from step 12.
Typical response on the MAP display:

PM TPC (for MP and IWS) major (continued)

CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.	.
				M					
	ISG		SysB	ManB	OffL	CBSy	ISTb	InSv	
0	Quit	PM	0	0	12	0	3	48	
2	Post_	TMS	0	0	0	0	0	1	
3									
4		TMS 0	InSv	Links_00S:		CSide	0	PSide	4
5		Unit0:	Inact	InSv					
6		Unit1:	Act	InSv					
7	Bsy_								
8	RTS_	ISG			1111111111	2222222222		33	
9	OffL_		123456789	0123456789	0123456789	01			
10			0000.0000	0000000000	0000000000	00			
11									
12	Next	ISG	2 DCH	2 InSv	TMS	0	port 17		
13									
14	QueryCH_	post 2							
15	CONT_								
16	Loopbk_								
17									
18									

Port number

. = An in-service ISG channel

See the following table to determine the next action.

If the channel	Do
is SysB	step 16
is ManB	step 17
is InSv and you did not post the ISG InSv of the second VPC and you posted the two ISGs of the VPC	Repeat this step and post the ISG you did not post the first time. Go to step 18

16 To busy the ISG channel that is SysB, type

>BSY n

where

n

is the ISG channel number.

and press the ENTER key.

To confirm request for busy, type

>YES

and press the ENTER key.

PM TPC (for MP and IWS)
major (continued)

Explanation: When you issue the BSY command while the ISG channel is in-service, the system requires confirmation (YES). You must confirm before the system removes the ISG channel from service.

For this condition, respond to the prompt with YES.

If the system receives a negative confirmation, the ISG channel remains in the current state.

- 17** To return the busied ISG channel to service, type

>RTS n

where

n

is the ISG channel number.

and press the ENTER key.

If RTS	Do
passes, the fault and alarm clear	step 27
does not pass	step 18

- 18** Verify that the two virtual-position controllers (VPCs) or type 2 TOPS MPX positions from step 12 are powered up and run TOPS MPX applications. The operator screen appears when the controllers and TOPS MPX positions run TOPS MPX applications.

If	Do
VPCs are not powered up	Power up the VPCs. Wait 5 min for VPCs to reboot. If necessary, bring up the operator screen.
VPCs are powered up and a operator screen does not appear	Power down the VPC. Wait 10 s and power up.
TPC major alarm clears after VPCs are powered up	step 27
VPCs are powered up and operator screen appears	step 26

- 19** To post the ISTb TMS, type

>POST ISTB

and press the ENTER key.

PM TPC (for MP and IWS) major (continued)

- 20** To access the DCH level of the MAP, type

>DCH

and press the ENTER key.

Typical response on the MAP display:

	CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
	.	.	.	.	n TPC	.	.	.	.	.
				SysB	ManB	OffL	CBsy	ISTb	InSv	
0	Quit		PM	0	3	11	0	3	48	
2	Post_		TMS	0	0	0	0	1	0	
3										
4			TMS 0	ISTb	Links_00S:		CSide	0	PSide	4
5	Trnsl		Unit0:	Inact	InSv					
6	Tst		Unit1:	Act	InSv					
7	Bsy									
8	RTS		DCH	3	0	0	0	0	1	
9	OffL									
10	LoadPM		DCH							
11										
12	Next									
13										
14	QueryPM									
15	Disp									
16										
17										
18										

Indicates the 3 DCHs that are SysB.

DCH status line

- 21** From the DCH status line in the previous step, post the status of the DCH. The status can be SysB, ManB, CBsy, or ISTb. To post the status of the DCH, type

>POST <STATE>

and press the ENTER key.

The DCH and ISG information appear. The system reports a status of the DCH. Record the DCH number, the ISG number, and the port number.

Typical response on the MAP display:

PM TPC (for MP and IWS) major (continued)

	CM	MS	IOD	Net	PM	CCS	LNS	Trks	Ext	APPL
	.	.	.	.	n TPC	.	.	.	.	.
					M					
	DCH			SysB	ManB	OffL	CBsy	ISTb	InSv	
0	Quit		PM	0	3	11	0	3	48	
2	Post_		TMS	0	0	0	0	1	0	
3										
4			TMS 0	ISTb	Links_00S:		CSide	0	PSide	4
5	Trnsl		Unit0:	Inact	InSv					
6	Tst		Unit1:	Act	InSv					
7	Bsy									
8	RTS		DCH	3	0	0	0	0	1	
9	OffL									
10	LoadPM		DCH	5	ISG	5	SysB	TMS	0	port 13 WAI
11										
12	Next		post	sysb						
13										
14	QueryPM									
15	Disp									
16										
17										
18										

Port number

Command to post problem type.

DCH number and ISG number

Status and indication of S/W (WAI) problem.

22 To busy the posted DCH, type

>BSY

and press the ENTER key.

To confirm request for busy, type

>YES

and press the ENTER key.

Explanation: When you issue the BSY command while the DCH is in service, the system requires confirmation (YES). The system requires confirmation before removal of the DCH from service.

For this condition, respond to the prompt with YES.

If the system receives a negative confirmation, the DCH remains in the current state

23 To test the posted DCH, type

>TST

and press the ENTER key.

Typical response on the MAP display:

PM TPC (for MP and IWS) major (continued)

```

CM  MS  IOD  Net  PM  CCS  LNS  Trks  Ext  APPL
.   .   .   .   .   .   .   .   .   .
      n TPC
      M
DCH      SysB  ManB  OffL  CBsy  ISTb  InSv
0 Quit      PM    0    2    11    0    3    49
2 Post_     TMS    0    0    0    0    1    0
3
4          TMS 0  ISTb  Links_00S:  CSide 0  PSide  4
5 Trnsl     Unit0:  Inact  InSv
6 Tst       Unit1:  Act  InSv
7 Bsy
8 RTS       DCH   2    1    0    0    0    1
9 OffL
10 LoadPM   DCH   5 ISG   5 ManB  TMS    0 port 13
11
12 Next      tst
13           DCH 5  Out-of-service test initiated
14 QueryPM   Fail message received from PM
15 Disp      Site FlrRPos  Bay_id  Shf  Description  Slot  EqPEC
16           HOST 01  B04  LTEI 00  51  TMS : 000  02  BX02
17           DCH 5 Tst Failed Testid : DCHIFdiag
18

```

Card list failure message for DCH

See the following table to determine the next action.

If	Do
the system produces a card list	Go to <i>Card Replacement Procedures</i> and replace the card(s) that appear. After you replace the card, go to step 24.
The system produces a card list and TST fails, a Testid : DCHIFdiag message appears	step 24
DCH diagnostics appear	step 24
the system generates a load failure message	step 24

24 Load the DCH when the following actions occur:

- diagnostics appear
- the system receives a load failure message
- you replace the card

PM TPC (for MP and IWS)
major (continued)

To load the DCH, type
>LOADPM
and press the ENTER key.

If LOADPM	Do
passes	step 25
fails and you replace the cards	step 26
fails and you do not replace the cards	Replace the DCH card. To determine the location of the DCH card to replace without a card list, refer to the port number in step 21. The system generates the card list. Apply the port number to the following chart. Apply this number to determine the unit number and slot number. Refer to <i>Card Replacement Procedures</i> for BX02 replacement instructions. Return to step 24 after you replace the card.
<i>If port no. is</i> 13 15 1719	<i>Faulty card location is</i> Unit 0, Slot 2Unit 1, Slot 2Unit 0, Slot 1Unit 1, Slot 1

- 25** To return the DCH to service, type
>RTS
and press the ENTER key.
Typical response on the MAP display:

PM TPC (for MP and IWS) major (end)

```

CM  MS  IOD  Net  PM  CCS  LNS  Trks  Ext  APPL
.   .   .   .   n TPC  .   .   .   .   .
      M
DCH      SysB  ManB  OffL  CBsy  ISTb  InSv
0 Quit      PM    0    2    11    0    4    48
2 Post_     TMS    0    0    0    0    0    4
3
4          TMS 0  InSv  Links_OOS:  CSide 0  PSide  0
5 Trnsl     Unit 0: Act InSv
6 Tst       Unit 1: Inact  InSv
7 Bsy
8 RTS       DCH    0    0    0    0    0    4
9 OffL
10 LoadPM   RTS
11          DCH5 Out-of-service test initiated
12 Next      DCH5 Tst Passed
13          DCH5 RTS Passed
14 QueryPM
15 Disp
16
17
18

```

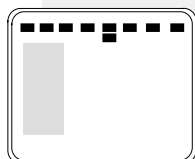
See the following table to determine the next action.

If RTS	Do
passes and the alarm clears	step 27
does not pass	step 26
passes and the alarm does not clear	step 9, and repeat procedure
does not pass and the system does not produce a card list	step 26

- 26** For additional help, contact the next level of maintenance.
- 27** The procedure is complete. If other alarms occur, refer to the appropriate alarm clearing procedures for the specified alarms.

PM TPC (for MP and IWS) minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Trks	Ext	APPL
.	.	.	.	n TPC	.	.	.	.

Indication

A TPC indication indicates a TPC alarm. A TPC indication appears under the peripheral module (PM) subsystem header. This header is at the maintenance level of the MAP.

Enter this procedure from a PM system level alarm clearing procedure step. This step identifies a fault that associates with a TPC.

This procedure applies to both types of TPCs, which follow:

- An integrated TPC, which supports up to four integrated MP positions.
- A virtual TPC, which supports MPX-IWS positions on a token ring.

Meaning

The n indicates the number of TPCs in the in-service trouble state.

Result

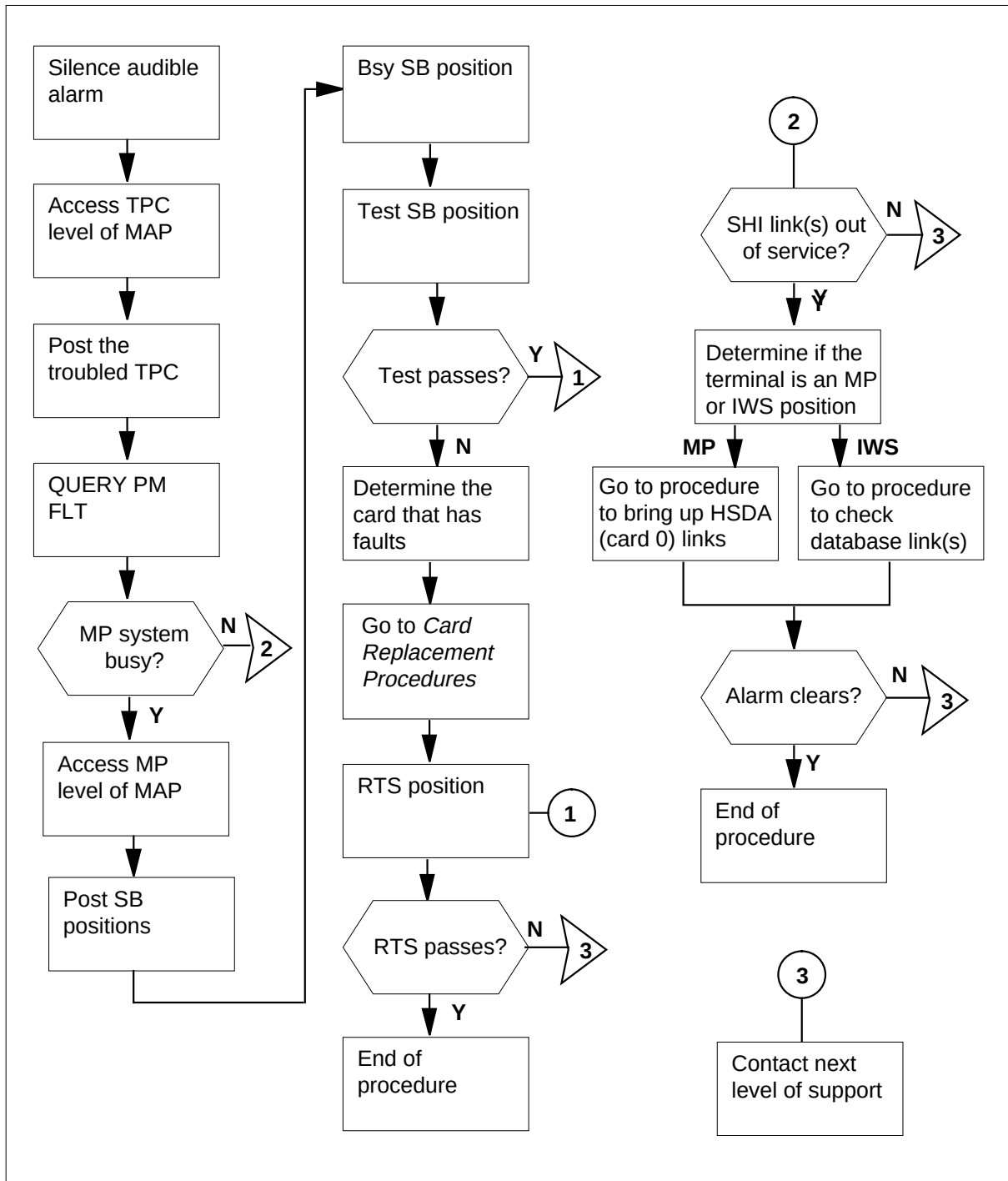
Clear this alarm as soon as possible. This alarm affects the call handling abilities of an integrated MP or IWS position.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Use the steps to perform the procedure.

PM TPC (for MP and IWS) minor (continued)

Summary of clearing a PM TPC (for MP and IWS) minor alarm



PM TPC (for MP and IWS)
minor (continued)

Clearing an PM TPC (for MP and IWS) minor alarm

At the MAP terminal

- 1** To silence the alarm, type
>MAPCI;MTC;SIL
and press the Enter key.
- 2** To access the TPC level of the MAP and post the alarm that has defects, type
>PM;POST TPC ISTB
and press the Enter key.

Example of a MAP response

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	0	0	10	0	1	130
TPC	0	0	0	0	1	4
TPC 20	ISTb					

- 3** To query for fault indicators, type
>QUERYPM FLT
and press the Enter key.

Example of a MAP response

QueryPM flt
The following node in-service trouble exist:
MP system busy

If trouble message	Do
is MP system busy	step 4
is SHI link(s) out of service	step 11
is another message	step 14

4 To access the MP level of the MAP, type
>MP

PM TPC (for MP and IWS) minor (continued)

and press the Enter key.

Example of a MAP response

```

      VTB  SB  MB  PMB  RES  RTRN  INB
Status    0   1   0   0    0    0    5
      MP
MP:

```

- 5 To post the SB position, type

>POST SB

and press the Enter key.

Example of a MAP response

```

POS 200  TPC 20  MP 0  SB
Size of post set:  1
Post p sb

```

- 6 To busy the SB position, type

>BSY

and press the Enter key.

Example of a MAP response

```

POS 200  TPC 20  MP 0  MB
Size of post set:  1
Bsy
Bsy Passed

```

- 7 To test the SB position, type

>TST

and press the Enter key.

PM TPC (for MP and IWS) minor (continued)

Example of a MAP response

```
POS 200  TPC 20  MP 0 MB
Size of post set:  1
Tst
Tst Failed:  HSLI_card_not_present_unable_to_run_
              diags
              Error code:  203
              Additional value:  0000  0000
```

	If test	Do
	passes	step 10
	fails	step 8
8	Determine which card has defects.	
9	See <i>Card Replacement Procedures</i> to replace the NTN62 card that has faults. Return to this point.	
10	To return the tested position to service, type >RTS and press the Enter key.	

Example of a MAP response

```
POS 200  TPC 20  MP 0  Mtce
Size of post set:  1
Rts
Rts Passed
```

	If RTS	Do
	passes	step 15
	fails	step 14
11	The position type requires identification, whether MP or IWS, The MAP display is at the TPC level from the command in step 3. Enter the following series of commands to determine a sample position number connected to the ISTB TPC, type >POST TPC 20 >MP >POST TPC 20	

PM TPC (for MP and IWS) minor (continued)

The positions connected to the TPC are listed as shown in the following example.

Example of a MAP response

```
POS 200 TPC 20 MP 0 InSv
Size of post set: 4
post tpc 20
```

The above display indicates that the TPC serves position number 200.

12 Determine the type of position, type

>TABLE TOPSP0S; POS 200

Example of a MAP response for an MP position

```
200 TMS 1 1 6 NPDGP DS1SIG TMS MP ASCII 107 3 OPR 5
TOPSACD ALL ALL
```

The above example is for an MP position because the protocol is ASCII.

Example of a MAP response for an IWS position

```
200 TMS 1 1 6 NPDGP DS1SIG TMS MP OPP 107 3 OPR 5
TOPSACD ALL ALL
```

The above example is for an IWS position because the protocol is OPP.

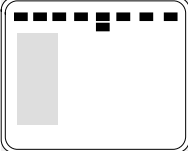
If position type	Do
MP	Go to the <i>Trouble Locating and Clearing Procedures Manual</i> , routine "TOPS MP Operator compliant (standalone/integrated) Clearing DA access trouble" to bring the HSDA links (card 0) in service and return to step 13.

PM TPC (for MP and IWS)
minor (end)

	If position type	Do
	IWS	For a Nortel database, go to the <i>Trouble Locating and Clearing Procedures Manual</i> , routine "TOPS IWS Operator compliant Clearing database access trouble" to restore access to the database and return to step 13. Note, for a Nortel database, this link alarm is currently (Rls09) only generated by the TOPS IWS NTDA application. For a database other than Nortel, go to the appropriate documentation.
13	Enter this step from the correct trouble locating and clearing procedure as indicated in step 12.	
	If alarm	Do
	clears	step 15
	does not clear	step14
14	For additional help, contact the next level of support.	
15	The procedure is complete.	

PM UEN critical

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	Appl
	.	.	.	.	1UEN	.	.	.	.	.
					C					

Indication

At the MTC level of the MAP terminal, UEN (preceded by a number) appears under the PM header of the alarm banner. A *C* follows the UEN. The UEN indicates a critical alarm for a Universal Edge 9000 (UEN) shelf. The number that precedes the UEN indicates the number of UENs that the alarm affects. The preceding figure illustrates an alarm banner with an UEN critical alarm.

Meaning

The UEN is system busy (SysB) or C-side busy. A UEN is SysB if both units are SysB. A UEN is SysB if one unit is SysB and the other unit is manual busy (ManB). A UEN is C-side busy if both units are C-side busy.

Impact

Service stops when a UEN is SysB or C-side busy.

Common procedures

This procedure refers to the common procedures that follow:

- “Clearing PM C-side faults”
- “Monitoring system maintenance”

Do not go to the common procedure until directed to do so by a step in the step action procedure.

Next level of maintenance

Repeat this procedure if it is not successful when you first perform the procedure.

A problem can occur that requires the help of the local maintenance personnel. Gather all important logs, reports, and system information (that is, product type and current software load) for analysis. The related logs, maintenance notes, and system information help make sure that the next level of

PM UEN

critical (continued)

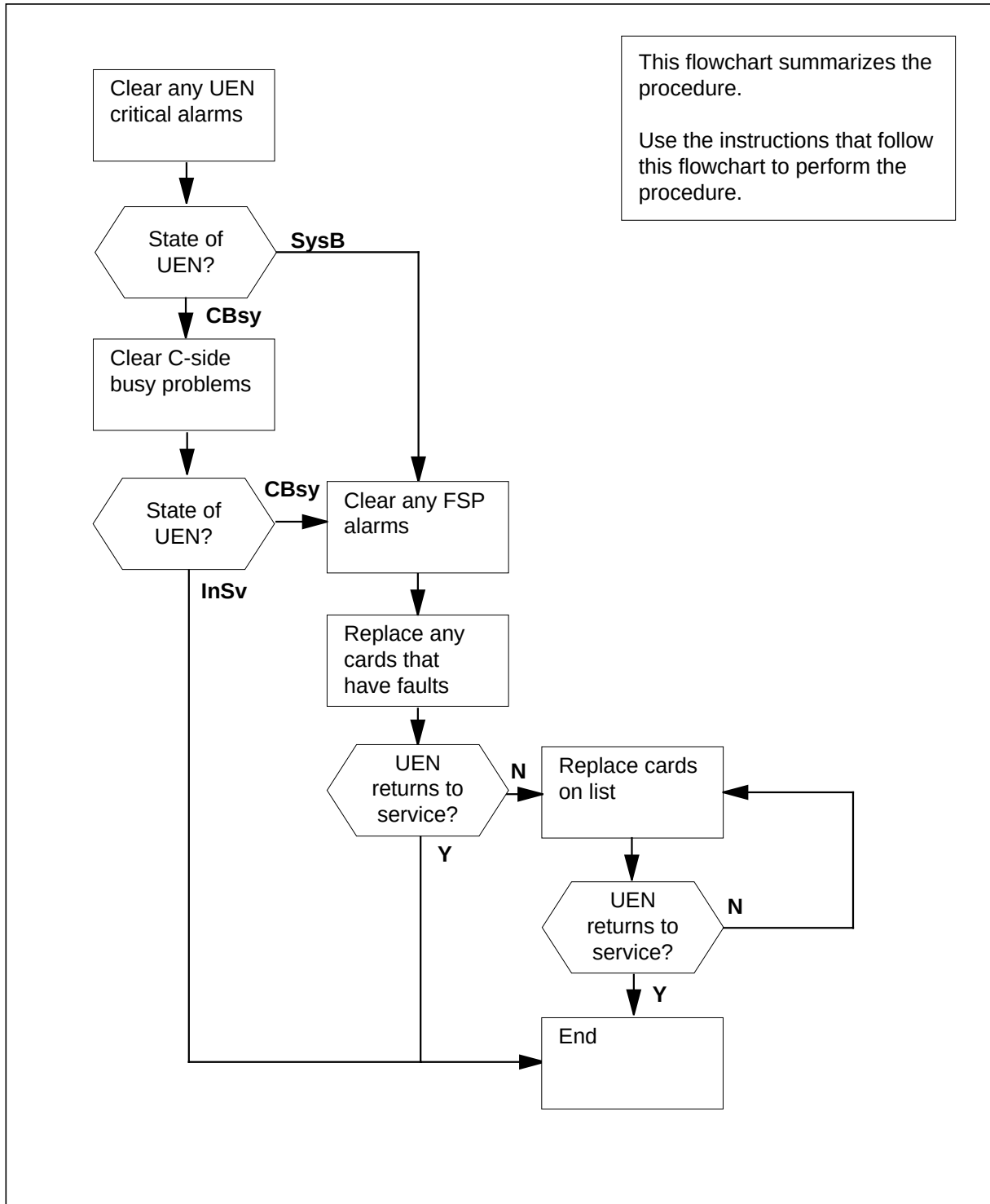
maintenance and support can find the problem. More detail about logs appears in the *Log Report Reference Manual*.

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to clear the alarm.

PM UEN critical (continued)

Summary of clearing PM UEN critical alarm



PM UEN critical (continued)

Clearing PM UEN critical alarm

At you current location

- 1 To access the PM level of the MAP terminal, type

>MAPCI ; MTC ; PM

and press the Enter key.

Example of a MAP response:

PM	SysB 1	ManB 3	OffL 5	CBsy 7	ISTb 6	InSv 12
If			Do			
an audible alarm rings			step 2			
the *C* indicator at the alarm banner flashes			step 2			
the response is other than listed here			step 3			

- 2 To silence the alarm, type

>SIL

and press the Enter key.

- 3 To determine the status of all UENs and host PMs (LGC, LTC, or RCC2) that the UENs connect to, type

>STATUS

and press the Enter key.

Example of a MAP response:

PM	SysB 2	ManB 0	OffL 0	CBsy 2	ISTb 0	InSv 25
TM8	0	0	0	0	0	2
MTM	0	0	0	0	0	3
LGC	1	0	0	0	0	3
LCM	1	0	0	2	0	0
DTC	0	0	0	0	0	1
LIM	0	0	0	0	0	1
LIU7	0	0	0	0	0	1
FRIU	0	0	0	0	0	1
LCME	0	0	0	0	0	1
UEN	1	0	0	0	0	1
						MORE ...

PM UEN critical (continued)

Note: If UENs are SysB and CBsy, work on the SysB UENs first.

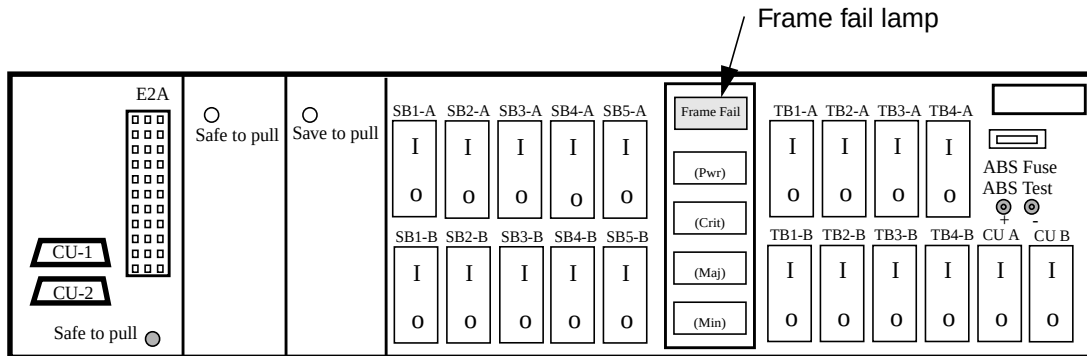
	If	Do
	a minimum of one LGC / LTC / RCC2 is SysB or CBsy	step 4
	no LGC / LTC / RCC2 is SysB or CBsy	step 5
4	A minimum of one LGC /LTC/ RCC2 critical alarm is present. To clear all LGC / LTC / RCC2 critical alarms, perform the correct procedure in this document. Wait for the system to clear related UEN alarms.	
	If	Do
	the system clears all UEN alarms	step 36
	the UEN critical alarm remains	step 5
	the UEN critical alarm changes to an UEN major alarm or an UEN minor alarm	step 35
5	To display all the CBsy or SysB UENs, type >DISP STATE state UEN and press the Enter key. <i>where</i> state is CBsy or SysB, as determined in step 3 <i>Example of a MAP response:</i> SYSB UEN:HOST 00 0 Note: If multiple UENs are CBsy or SysB, select a UEN on which to work. Record the number of the UEN.	
	If you are recovering	Do
	a CBsy UEN	step 6
	a SysB UEN	step 7
6	Go to the common procedure “Clearing PM C-side” faults in this document. Complete the procedure and return to this point.	
	If	Do
	the UEN remains CBsy	Treat the CBsy UEN as a SysB UEN and go to step 7
	the UEN changes to SysB	step 7

PM UEN
critical (continued)

	If	Do
	one UEN unit returns to service	step 35
	both UEN units return to service	step 36
7	Check the EXT header of the alarm banner.	
	If an FSP alarm	Do
	is present	step 8
	is not present	step 19
8	To locate the FSP alarm, type >EXT; LIST FSP and press the Enter key. <i>Example of a MAP response:</i> FSPAISD In this example, the alarm is an FSP alarm on Aisle D.	
At the equipment aisle		
9	Go to the aisle identified in step 8. The end aisle alarm is lit.	
At the equipment frame		
10	Identify the UEN frame with the FSP alarm. Check the Frame fail lamp on the breaker interface panel (BIP). The frame with the FSP alarm will have a lit Frame fail lamp. The following figure shows a BIP with a lit Frame fail lamp.	

PM UEN critical (continued)

Breaker interface panel with Frame fail lamp lit



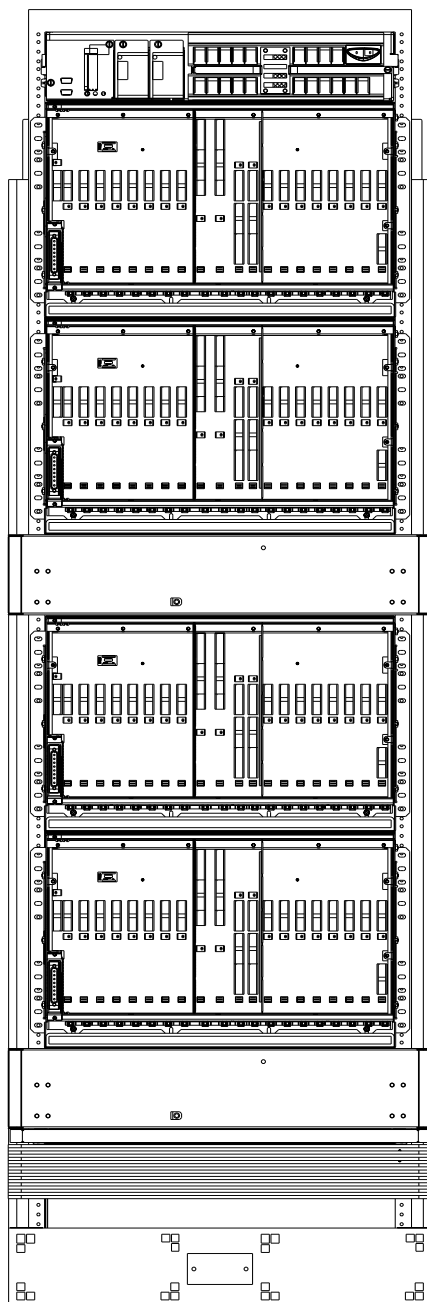
A Frame fail lamp may be present because of the following:

- cooling unit failure
- blown ABS fuse
- signal battery or talk battery power failure
- talk battery filter (NTNY25) failure

11 Identify the UENs in the frame. Refer to the figure “UEN frame” for help.

PM UEN critical (continued)

UEN frame



NTNY17AA Breaker interface panel (BIP)

NTNP10BA UEN shelf 3

UEN shelf 2

NTNY18AA Cooling Unit (CU)
and local craft access panel (LCAP)

UEN shelf 1

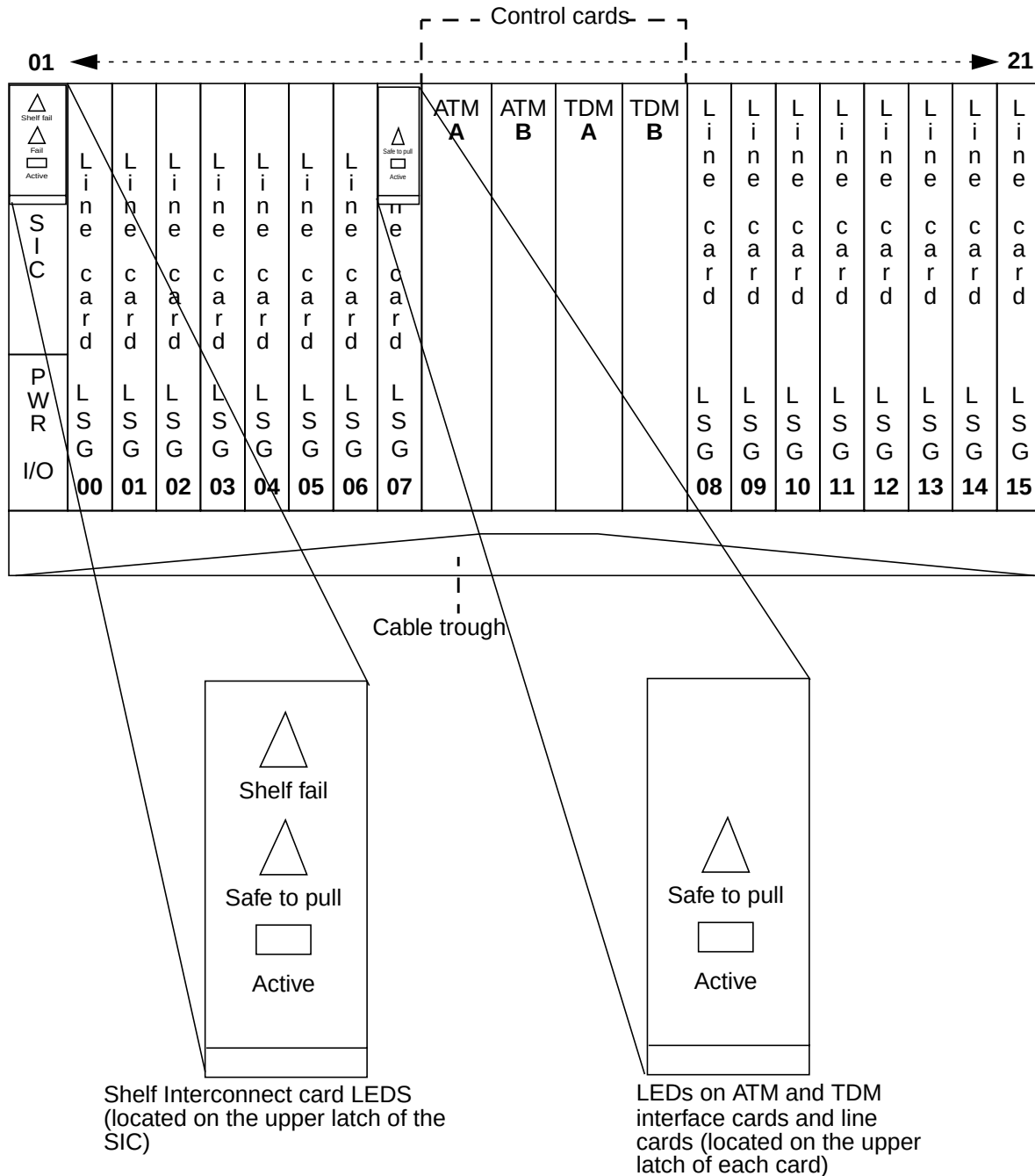
UEN shelf 0

NTNY18AA CU

NT4K15CA air filter
NT4K13AA drip tray

PM UEN critical (continued)

UE9000 DMS shelf



LSG = line subgroup

PM UEN critical (continued)

- 12** Check the Shelf Fail LED on the NTNY23 Shelf Interconnect card (SIC) in the UEN shelf. Refer to the figure "UE9000 DMS shelf" for help in checking the Shelf fail LED.

If a SIC Shelf fail LED	Do
is lit	step 13
is not lit	step 17

- 13** Note the UEN with the LED light on.

- 14** To post the system busy UEN and identify the location of the system busy UEN, type

>PM; POST UEN site frame_no shelf_no;QUERYPM

and press the Enter key.

where

site

is the site name of the UEN you recorded in step 5

frame_no

is the number (00 to 511) of the UEN you recorded in step 5

shelf_no

is the shelf number (0, 1, 2, or 3) of the UEN you recorded in step 5

Example of a MAP response:

```

UEN HOST 00 0 SysB Links_00S: CSide 1 PSide 0
Unit0: SysB
Unit1: SysB
                                11 11 11 11 11
Drwr: 01 23 45 67 89 01 23 45 67 89
      .. -- -- -- -- .. -- -- -- --
QueryPM
PM Type: UEN Int. No: 42 Status index: 26 Node_No: 137
UEN HOST 00 0 Memory Size - Unit 0: 8M, Unit 1: 8M
Loadnames: LCMINV - UEN014AM ,
Unit0: Act - UEN014AM Stby - UEN014AM
Unit1: Act - UEN014AM Stby - UEN014AM
UEN HOST 00 0 is included in the list of LCM types
          scheduled for a REX test.
Last REX test was TUE. 2000/08/18 at 1:08:58; FAILED.
Node Status: {OK, FALSE}
Unit 0 Status: {OK, FALSE}
Unit 1 Status: {OK, FALSE}
Site Flr RPos Bay_id Shf Description Slot EqPEC
HOST 01 C05 UEE 00 04 UEN 00 0 NY01AA
World Line Card Template(s) in use:
NP50AA KX08AA
Services: NEUTRAL

```

If a Mtce indicator	Do
appears next to either unit	step 15

PM UEN critical (continued)

	If a Mtce indicator	Do
	does not appear	step 16
15	Go to the common procedure <i>Monitoring system maintenance</i> in this document. Complete the procedure and return to this point.	
	If the critical alarm	Do
	remains	step 16
	changes	step 35
	clears	step 36
16	Determine if the UEN is the same as the UEN identified in step 13.	
	If the UEN	Do
	is different	step 17
	is the same	step 18
17	Clear the FSP alarm. Perform the correct alarm clearing procedure in this document. Complete the procedure and return to this point.	
18	To busy the UEN, type >BSY PM and press the Enter key. Go to step 27.	

At the equipment frame

- 19** To post the UEN, type
>POST UEN site frame_no shelf_no
and press the Enter key.
where
- site**
is the site name of the UEN you recorded in step 5
- frame_no**
is the number (00 to 511) of the UEN you recorded in step 5
- shelf_no**
is the shelf number of the UEN you recorded in step 5

Example of a MAP response:

PM UEN
critical (continued)

UEN HOST 01 1 SysB Links_00S: CSide 1, PSide 0
Unit0: Act SysB
Unit1: Inact SysB

	If a Mtce flag	Do
	appears next to either unit	step 20
	does not appear	step 21
20	Go to the common procedure <i>Monitoring system maintenance</i> in this document. Complete the procedure and return to this point.	
	If the critical alarm	Do
	remains	step 21
	changes	step 35
	clears	step 36
21	To query the UEN for indications that have faults, type >QUERYPM FLT and press the Enter key. <i>Example of a MAP response:</i> PM Audit	
22	Record the MAP response.	
	If the MAP response	Do
	is REx Test Aborted	step 23
	is Load Corruption	step 24
	is Load Failed	step 24
	is other than listed here	step 26
23	The UENs C-side PM runs a routine exercise (REx) test. Wait until the REx test for the PM is complete. The REx test for the PM must finish before the REx test for the UEN can begin. If the REx test continues to abort, go to step 26.	
24	To busy the UEN, type >BSY PM and press the Enter key.	
25	To load the UEN from the CC, type >LOADPM PM CC	

PM UEN critical (continued)

and press the Enter key.

	If the load	Do
	fails	step 32
	passes	step 27
26	To busy the UEN, type >BSY PM and press the Enter key.	
27	To return the UEN to service and switch the load to the standby banks, type >RTS PM SWLD and press the Enter key.	
	If	Do
	the UEN does not return to service	Follow the instructions in the MAP response. Go to step 28.
	one UEN unit returns to service	step 35
	both UEN units return to service	step 36
28	To return the active UEN unit to service, type >RTS UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number (0 to 1) of the UEN unit	
	If the unit	Do
	does not recover and the system generates a card list	step 29
	does not recover and the system does not generate a card list	step 34
	recovers	step 36

At the equipment frame

- 29** Replace the first card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Refer to the figure "UEN frame" for help to locate the card. Go to step 30.

PM UEN

critical (continued)

At the MAP terminal

- 30** To return the UEN unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no

is the number (0 to 1) of the UEN unit

If the unit	Do
does not return to service, and you did not replace all the cards that have faults on the list	step 31
does not return to service, and you replaced all the cards that have faults on the list	step 34
returns to service	step 36

At the equipment frame

- 31** Replace the next card on the card list. Refer to the correct procedure in *Card Replacement Procedures*. Refer to the figure "UEN frame" to help locate the card. Go to step 33.

At the MAP terminal

- 32** To load the UEN unit from the CC, type

>LOADPM UNIT unit_no CC

and press the Enter key.

where

unit_no

is the number (0 to 1) of the UEN unit

If the load	Do
passes	step 33
fails	step 34

- 33** To return the UEN unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

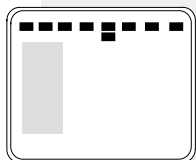
**PM UEN
critical (end)**

unit_no
is the number (0 to 1) of the UEN unit

	If the unit	Do
	does not return to service and you did not replace all the cards that have faults on the list	step 31
	does not return to service and you replaced all the cards that have faults on the list	step 34
	returns to service	step 36
34	For additional help, contact the next level of support.	
35	The UEN critical alarm changed to another type of alarm. Refer to the correct procedure in this document to clear the alarm.	
36	The procedure is complete.	

PM UEN major

Alarm display

	CM	MS	IOD	Net	PM 1UEN M	CCS	Lns	Trks	Ext	Appl
	.	.	.	.		.	.	.	.	.

Indication

At the MTC level of the MAP display, a UEN (preceded by a number) appears under the PM header of the alarm banner. An M follows the UEN. The UEN indicates a major alarm for a Universal Edge 9000 (UEN). The number that precedes the UEN indicates the number of UENs affected by the alarm. The alarm banner appears at the MTC level of the MAP. The preceding figure shows an alarm banner with an UEN major alarm.

Meaning

The UEN is in-service trouble (ISTb) because of one of the following conditions:

- one unit is system busy and one unit is ISTb
- one unit is system busy and one unit is in-service
- one unit is C-side busy and one unit is ISTb
- one unit is C-side busy and one unit is in-service

Impact

Line cards that are out of service affect call processing. Line cards that are not out of service do not affect call processing.

Common procedures

This procedure refers to “Monitoring system maintenance.”

Do not go to the common procedure until directed to do so by a step in the step action procedure.

Next level of maintenance

Repeat this procedure if it is not successful when you first perform the procedure.

PM UEN
major (continued)

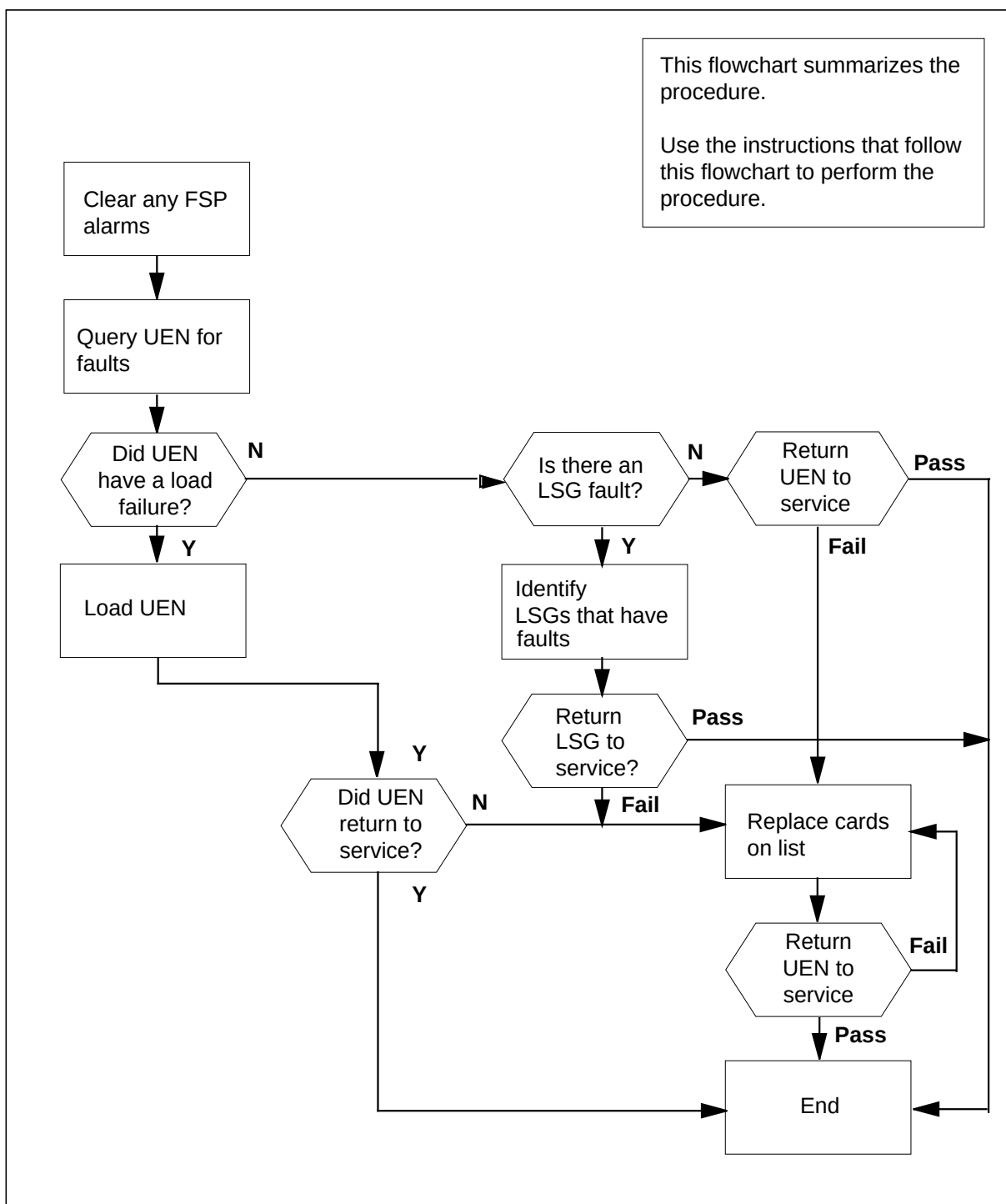
A problem can occur that requires the help of the local maintenance personnel. Gather all important logs, reports, and system information (that is, product type and current software load) for analysis. The related logs, maintenance notes, and system information help make sure that the next level of maintenance and support can find the problem. More detail about logs appears in the *Log Report Reference Manual*.

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to clear the alarm.

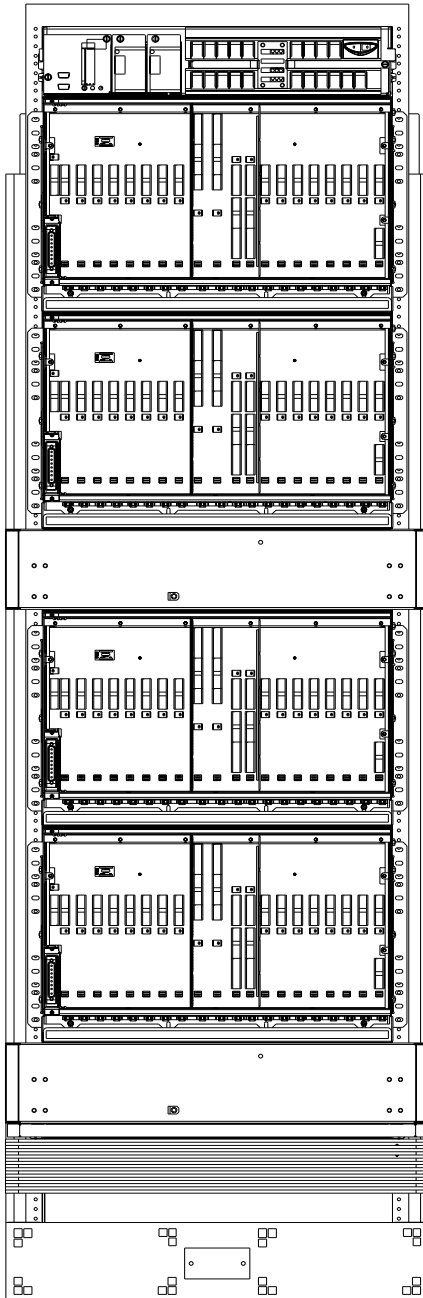
PM UEN major (continued)

Summary of clearing PM UEN major alarm



PM UEN major (continued)

UEN frame



NTNY17AA Breaker interface panel (BIP)

NTNP10BA UEN shelf 3

NTNP10BA UEN shelf 2

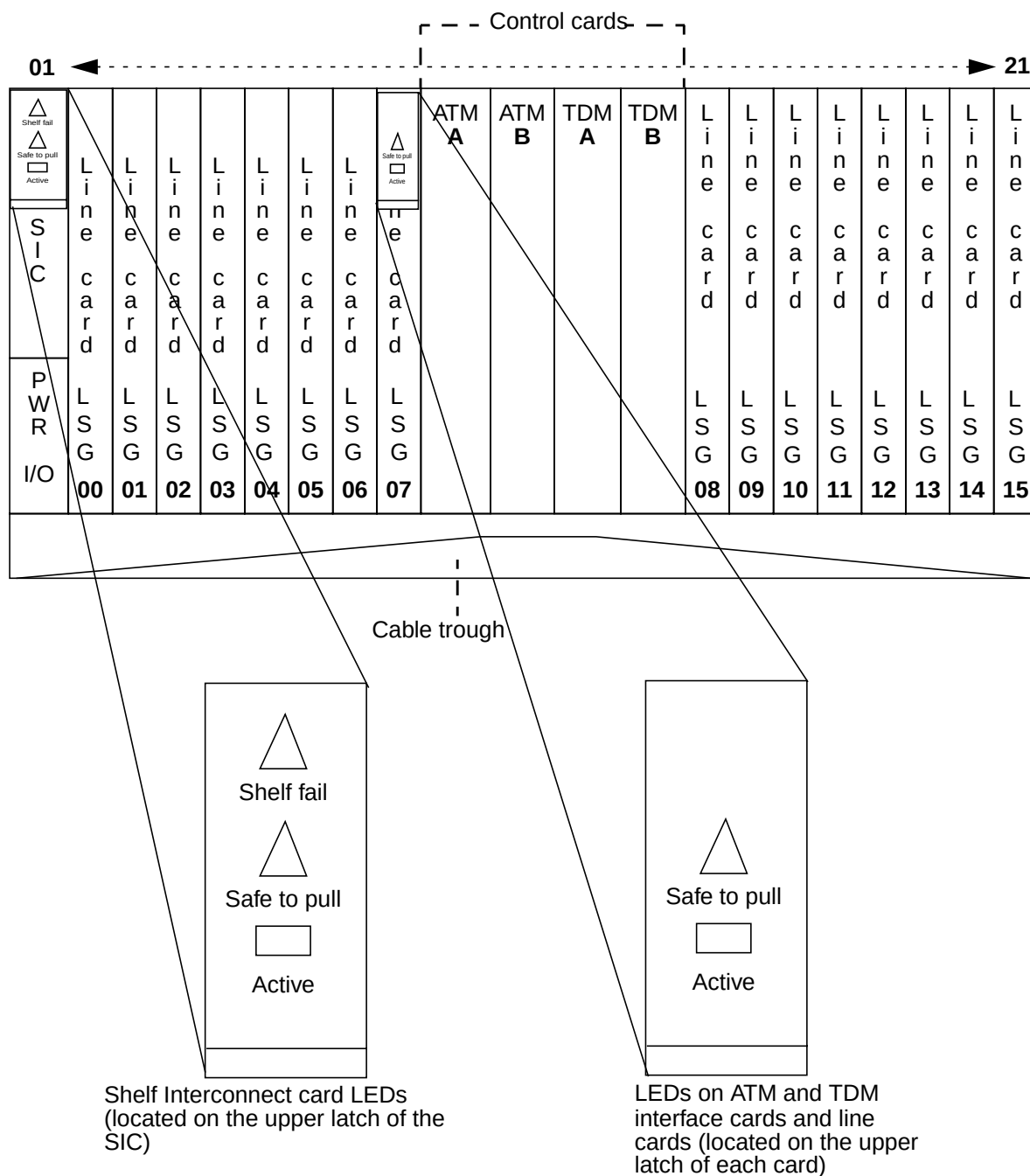
NTNY18AA Cooling Unit (CU)
and local craft access panel (LCAP)

NTNP10BA UEN shelf 1

NTNP10BA UEN shelf 0

NTNY18AA CU

NT4K15CA air filter
NT4K13AA drip tray

PM UEN**major** (continued)**UE9000 DMS shelf**

PM UEN major (continued)

Clearing PM UEN major alarm

At the MAP terminal

- 1 To access the PM level of the MAP display, type
>MAPCI ; MTC ; PM
and press the Enter key.

Example of a MAP response:

PM	SysB 1	ManB 3	OffL 5	CBsy 7	ISTb 6	InSv 12

If	Do
an audible alarm rings	step 2
the M indicator at the alarm banner flashes	step 2
neither of the above conditions occur	step 3

- 2 To silence the alarm, type
>SIL
and press the Enter key.
- 3 To display all the ISTb UENs, type
>DISP STATE ISTB UEN
and press the Enter key.

Example of a MAP response:
ISTb UEN: HOST 0 0

Note: If multiple UENs are ISTb, select a UEN to work on.
Record the name and number of the ISTb UENs.

- 4 Check the EXT header of the alarm banner.

If an FSP alarm	Do
is present	step 5
is not present	step 15

- 5 To locate the FSP alarm, type
>EXT; LIST FSP
and press the Enter key.
Example of a MAP display:
FSPAISD

PM UEN
major (continued)

In this example, the alarm is an FSP alarm on Aisle D.

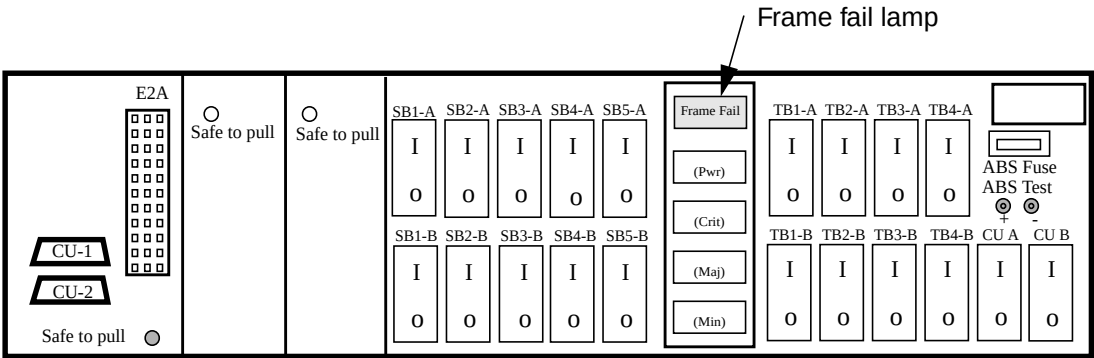
At the equipment aisle

- 6 Go to the aisle identified in step 5. The end aisle alarm is lit.

At the equipment frame

- 7 To identify the UEN frame with the FSP alarm, check the Frame fail lamp on the breaker interface panel (BIP) of each frame. The frame with the FSP alarm has a lit Frame fail lamp. The following figure shows a BIP with a lit Frame fail lamp.

Breaker interface panel with a lit Frame fail lamp



- 8 Identify the UENs in the frame. Refer to the figure "UEN frame" for help.
- 9 Check the Shelf fail LED on the NTNY23 Shelf interconnect card in the UEN shelf. Refer to the figure "UE9000 DMS shelf" for help in checking the Shelf fail LED.

If an SIC Shelf fail LED	Do
is lit	step 10
is not lit	step 13

- 10 Note the UEN shelf with the LED light on.
- 11 To post the in-service trouble UEN and identify the location of this UEN, type **>POST UEN site frame_no shelf_no;QUERYPM** and press the Enter key.

where

site

is site name of the UEN you recorded in step 3

frame_no

is the number (00 to 511) of the UEN you recorded in step 3

PM UEN major (continued)

shelf_no

is the shelf number (0, 1, 2, or 3) of the UEN you recorded in step 3

Example of a MAP display:

```

UEN HOST 00 0 ISTb Links_00S: CSide 1 PSide 0
Unit0:    SysB
Unit1:    InSv

                11 11 11 11 11
Drwr:  01 23 45 67 89 01 23 45 67 89
      .. -- -- -- -- .. -- -- -- --
QueryPM
PM Type: UEN Int. No: 42 Status index: 26 Node_No: 137
UEN HOST 00 0 Memory Size - Unit 0: 8M, Unit 1: 8M
Loadnames: LCMINV - UEN014AM ,
Unit0: Act - UEN014AM Stby - UEN014AM
Unit1: Act - UEN014AM Stby - UEN014AM
UEN HOST 00 0 is included in the list of LCM types
scheduled for a REX test.
Last REX test was TUE. 2000/08/18 at 1:08:58; FAILED.
Node Status: {OK, FALSE}
Unit 0 Status: {OK, FALSE}
Unit 1 Status: {OK, FALSE}
Site Flr RPos Bay_id Shf Description Slot EqPEC
HOST  01  C05  UEE 00  04  UEN 00 0      NY01AA
World Line Card Template(s) in use:
NP50AA KX08AA
Services: NEUTRAL

```

- 12** Determine if the UEN is the same as the UEN you identified in step 10.

If the UEN	Do
is different	step 13
is the same	step 14

- 13** Clear the FSP alarm. Perform the correct procedure in this document to clear the alarm. Complete the procedure and return to this step.

- 14** To busy the inactive UEN unit, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no

is the number (0 to 1) of the inactive UEN unit

Go to step 30.

PM UEN major (continued)

At the equipment frame

- 15** To post the UEN, type
>POST UEN site frame_no shelf_no
and press the Enter key.
where
site
is site name of the UEN you recorded in step 3
frame_no
is the number (00 to 511) of the UEN you recorded in step 3
shelf_no
is the shelf number of the UEN you recorded in step 3

Example of a MAP display:

```
UEN HOST 01 1 ISTb Links_00S: CSide 1, PSide 0
Unit0: SysB
Unit1: InSv
```

If a Mtce flag	Do
appeared next to either unit	step 16
did not appear	step 17

- 16** Proceed to the common procedure *Monitoring system maintenance* in this document. Complete the procedure and return to this point.

If the major alarm	Do
remains	step 17
changes	step 31
clears	step 33

- 17** To query the UEN for fault indications, type
>QUERYPM FLT
and press the Enter key.

Example of a MAP response:

PM Audit

- 18** Record the MAP response.

If the MAP response	Do
is REx Test Aborted	step 19

PM UEN major (continued)

	If the MAP response	Do
	is Load Corruption	step 25
	is Load Failed	step 25
	is LSG Fault (LSG)	step 20
	is any type of ringing failure	step 20
	is other than listed here	step 27
19	The C-side PM of the UEN also runs an REx test. Wait until the REx test of the PM is complete. The REx test of the PM must finish before the REx test of the UEN can begin. If the REx test continues to abort, go to step 27.	
20	Check the MAP display for an LSG that has faults. Letters that appear under the line subgroup numbers that associate with a physical drawer indicate a drawer that has faults. <i>Example of a MAP display:</i>	
	<pre> UEN HOST 00 0 ISTb Links_00S: CSide 0 PSide 0 Unit0: InSv Unit1: ISTb 11 11 11 LSG: 01 23 45 67 89 01 23 45 .. S. </pre>	
21	To busy the line subgroup that has faults, type >BSY LSG lsg_no and press the Enter key. <i>where</i> lsg_no is the number of the line subgroup you identified in step 20.	
22	To return the line subgroup to service, type >RTS LSG lsg_no and press the Enter key. <i>where</i> lsg_no is the number of the line subgroup	
	If the RTS command	Do
	fails and the system generates a card list	step 23
	fails and the system does not generate a card list	step 32
	passes, the UEN major alarm remains	step 17

PM UEN major (continued)

If the RTS command	Do
passes, the UEN major alarm remains, and another line subgroup has problems	Go to step 21 and work on the other line subgroup.
passes and the UEN major alarm clears	step 33

At the equipment frame

23 Replace the first or next card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Complete the procedure and go to step 24.

24 To return the line subgroup to service, type

>RTS LSG lsg_no

and press the Enter key.

where

lsg_no

is the number of the line subgroup

If the RTS command	Do
fails and you did not replace all the cards on the list	step 23
fails and you replaced all the cards on the list, or the system does not generate a card list	step 32
passes, the UEN major alarm remains, and you worked on all line subgroups with faults	step 17
passes, the UEN major alarm remains, and you did not work on other line subgroups with faults	Go to step 21 and work on another line subgroup.
passes and the UEN major alarm clears	step 33

25 To busy the inactive UEN unit, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no

is the number (0 to 1) of the inactive UEN unit

26 To load the inactive UEN unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

PM UEN major (continued)

unit_no
is the number (0 to 1) of the inactive UEN unit

	If the load	Do
	fails, and the system generates a card list	step 29
	fails, and the system does not generate a card list	step 32
	passes	step 28
27	To busy the inactive UEN unit, type >BSY UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number (0 to 1) of the inactive UEN unit	
28	To return the inactive UEN unit to service, type >RTS UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number (0 to 1) of the inactive UEN unit	
	If the RTS command	Do
	fails and the system generates a card list	step 29
	fails and the system does not generate a card list	step 32
	passes and the UEN major alarm clears	step 33

At the equipment frame

- 29** Replace the first or next card on the list. Refer to the correct procedure in *Card Replacement Procedures*. For help, refer to figure "UEN frame" at the start of this module.

At the MAP terminal

- 30** To return the inactive UEN unit to service, type
>RTS UNIT unit_no
and press the Enter key.
where

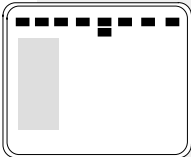
PM UEN major (end)

unit_no
is the number (0 to 1) of the inactive UEN unit

	If the RTS command	Do
	fails, the system generates a card list, and you did not replace all the cards on the list of cards that have faults	step 29
	fails, and the system generates a card list, and you replaced all the cards on the list of cards that have faults	step 32
	fails and the system did not generate a card list	step 32
	passes and the UEN major alarm clears	step 33
31	The UEN major alarm changed to another type of alarm. Refer to the correct procedure to clear the alarm. Go to step 33.	
32	For additional help, contact the next level of support.	
33	The procedure is complete.	

PM UEN minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.		1UEN	.	.	.		.

Indication

At the MTC level of the MAP terminal, UEN appears under the PM header of the alarm banner. The UEN indicates a minor alarm for a Universal Edge 9000 (UEN). The number that precedes UEN indicates the number of UENs that the alarm affects. The preceding figure shows an alarm banner with an UEN minor alarm.

Meaning

The UEN is in-service trouble (ISTb) as a result of one of the following conditions:

- both units are ISTb.
- one unit is ISTb and one unit is in service.
- one unit is ISTb and one unit is manual busy.
- one unit is in service and one unit is manual busy.
- both units are in service with some C-side links out of service.

Impact

The alarm does not affect service.

Common procedures

This procedure refers to the common procedures that follow:

- “Monitoring system maintenance”
- “Clearing PM C-side faults”

Do not go to the common procedure until directed to do so in a step in the step action procedure.

Next level of maintenance

Repeat this procedure if it is not successful when you first perform the procedure.

PM UEN

minor (continued)

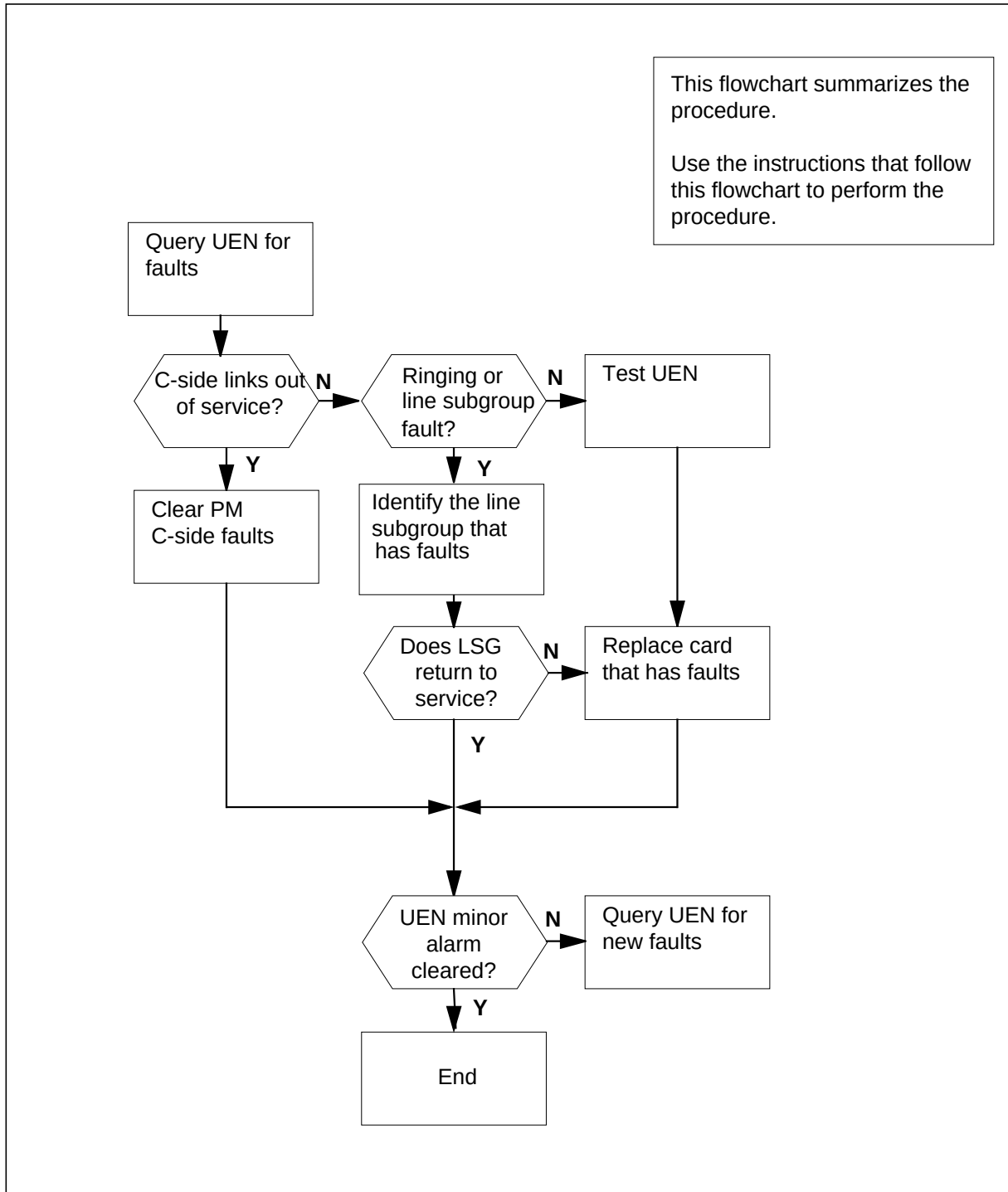
A problem can occur that requires the help of the local maintenance personnel. Gather all important logs, reports, and system information (that is, product type and current software load) for analysis. The related logs, maintenance notes, and system information help make sure that the next level of maintenance and support can find the problem. More detail about logs appears in the *Log Report Reference Manual*.

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to clear the alarm.

PM UEN minor (continued)

Summary of clearing PM UEN alarm



PM UEN
minor (continued)

Clearing PM UEN minor alarm

At the MAP display

- 1 To access the PM level of the MAP display, type
>MAPCI; MTC; PM
and press the Enter key.

Example MAP response:

	SysB	ManB	OffL	CBSy	ISTb	InSv
PM	1	3	5	7	6	12

If an audible alarm	Do
rings	step 2
does not ring	step 3

- 2 To silence the alarm, type
>SIL
and press the Enter key.
- 3 To display all the ISTb UENs, type
>DISP STATE ISTB UEN
and press the Enter key.

Example MAP response:
ISTb UEN: HOST 0 0

Note: If multiple UENs are ISTb, select a UEN on which to work. Repeat this procedure for each UEN that is ISTb.

Record the name and number of the ISTb UENs.

- 4 To post the UEN, type
>POST UEN site frame_no shelf_no
and press the Enter key.

where

site
is site name of the UEN that you recorded in step 3

frame_no
is the number (00 to 511) of the UEN that you recorded in step 3

shelf_no
is the shelf number (0, 1, 2, or 3) of the UEN that you recorded in step 3

Example of a MAP display:

PM UEN minor (continued)

```

UEN HOST 00 0 ISTb Links_00S: CSide 1 PSide 0
Unit0:    ISTb
Unit1:    InSv
          11 11 11
LSG:  01 23 45 67 89 01 23 45
      .. -- -- -- -- .. -- --

```

	If a Mtce flag	Do
	appears next to either unit	step 5
	does not appear	step 6
5	Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this point.	
	If the UEN minor alarm	Do
	remains	step 6
	changes	step 19
	clears	step 21
6	To determine the cause of the in-service trouble condition, type >QUERYPM FLT and press the Enter key. Note: Multiple causes are possible for the in-service trouble condition of an UEN. The UEN and the UEN units remain ISTb until all the in-service trouble conditions clear.	
	If the MAP response	Do
	is any type of ringing fault	step 9
	is REx Test Aborted	step 7
	is C-side links out of service	step 8
	is LSG Fault	step 9
	is Diagnostic Failed	step 15
	is other than listed here	step 15
7	The C-side PM of the UEN runs a routine exercise (REx) test. Wait until the REx test for the PM is complete. The REx test for the PM must finish before the REx test for the UEN can start. If the REx test continues to abort, go to step 20.	

PM UEN minor (continued)

- 8 Go to the common procedure “Clearing PM C-side faults” in this document. Complete the procedure and return to this point.

If the UEN minor alarm	Do
continues	step 6
clears	step 21

- 9 Check the MAP display for an LSG that has faults. Line subgroup numbers associate with the line card slot numbers in the UEN shelf. Letters that appear under the line subgroup numbers indicate a line card that has faults.

Example of a MAP display:

```
UEN HOST 00 0 ISTb Links_00S: CSide 0 PSide 0
Unit0:   InSv
Unit1:   ISTb

                        11 11 11
LSG:   01 23 45 67 89 01 23 45
      .. I.  ..  ..  ..  ..  ..
```

- 10 To busy an LSG that has faults, type

>BSY LSG lsg_no

and press the Enter key.

where

lsg_no

is the number of the LSG that you identified in step 9

Example of a MAP response:

```
UEN HOST 00 0 LSG 2 will be taken out of service. Please confirm
("YES" or "NO"):
```

- 11 To confirm the command, type

>YES

and press the Enter key.

- 12 To return the line subgroup to service, type

>RTS LSG lsg_no

and press the Enter key.

where

lsg_no

is the number of the line subgroup

If the RTS command	Do
fails and the system generates a card list	step 13

PM UEN minor (continued)

If the RTS command	Do
fails and the system does not generate a card list	step 20
passes, the UEN minor alarm remains, and you worked on the line subgroup with faults	step 6
passes, the UEN minor alarm remains, and you did not work on other line subgroups with faults	Go to step 10 and work on another line subgroup.
passes and the UEN minor alarm clears	step 21

At the equipment frame

- 13** Replace the first or next card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Complete the procedure and go to step 14.

At the MAP terminal

- 14** To return the line subgroup to service, type

>RTS LSG lsg_no

and press the Enter key.

where

lsg_no

is the number of the line subgroup

If the RTS command	Do
fails and you did not replace all the cards on the list	step 13
fails and you replaced all the cards on the list, or the system did not generate a card list	step 20
passes, the UEN minor alarm remains, and you worked on the line subgroup with faults	step 6
passes, the UEN minor alarm remains, and you did not work on other line subgroups with faults	Go to step 10 and work on another line subgroup
passes and the UEN minor alarm clears	step 21

- 15** To test the UEN unit, type

>TST UNIT unit_no

and press the Enter key.

where

PM UEN
minor (end)

unit_no
is the number (0 to 1) of the UEN unit

	If the TST command	Do
	fails, and the system generates a card list	step 16
	fails, and the system does not generate a card list	step 20
	passes and the alarm clears	step 21
16	To busy the UEN unit for the alarm, type >BSY UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number (0 to 1) of the UEN unit	
17	Replace the first or next card on the list. Refer to the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and go to step 18.	
18	To return the UEN unit to service, type >RTS UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number (0 to 1) of the UEN unit	
	If the RTS command	Do
	fails, and you did not replace all the cards on the list	step 17
	fails, and you replaced all the cards on the list	step 20
	passes	step 21
19	The UEN minor alarm changed to another type of alarm. Refer to the correct procedure in this document to clear the alarm. Complete the procedure and go to step 21.	
20	You need additional help to clear this alarm. Contact the next level of maintenance. Describe in detail the steps you performed to clear this alarm.	
21	The procedure is complete. If additional alarms appear, proceed to the correct alarm clearing procedure.	

PM VLCM critical

Alarm display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	1VLCM	.	.	.	.	.

Indication

Use this procedure to recover service in a virtual line concentrating module (VLCM) when both units of the VLCM are out of service. This condition always produces a central-side busy (CBsy) or system-busy (SysB) alarm.

The VLCM alarm appears under the PM header in the MAP subsystem display. This alarm indicates an alarm condition exists in the VLCM. The number preceding the PM type of VLCM indicates the number of VLCMs with alarms. The *C* appearing under the alarm indicates the alarm class is critical.

Meaning

The VLCM is either system busy or central-side busy. A VLCM is system busy if

- both units are system busy
- one unit is system busy and the other unit is manually busy

A VLCM is central-side busy when both units of the VLCM are central-side busy.

Impact

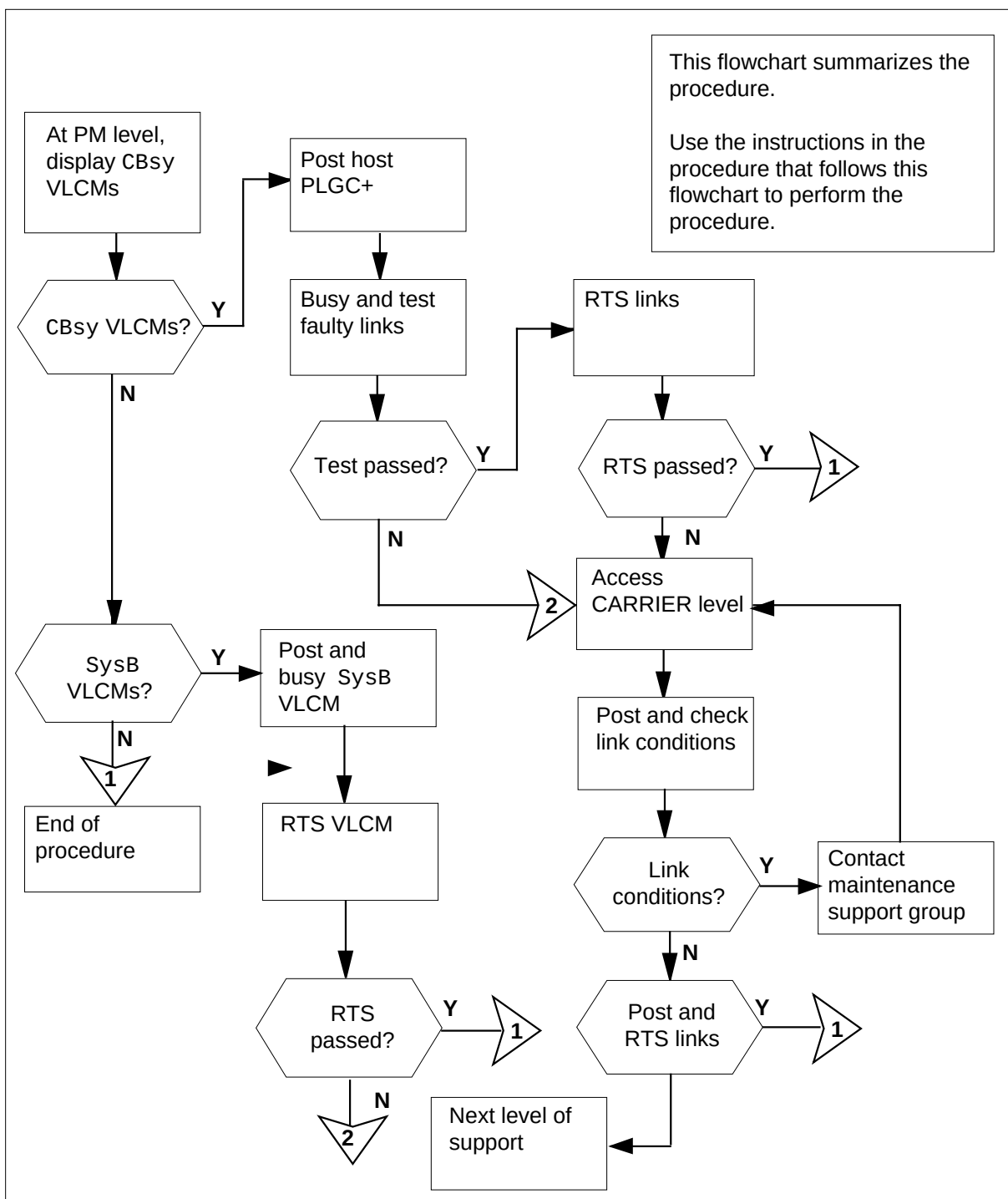
Loss of call processing occurs when a VLCM is system busy or central-side busy.

Common procedures

Not applicable

Action

The following flowchart is only a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

PM VLCM**critical** (continued)**Summary of clearing a PM VLCM alarm**

PM VLCM critical (continued)

Clearing a critical PM VLCM alarm

At MAP display

- 1 To access the PM level of the MAP display, type

>MAPCI; MTC; PM

and press the Enter key.

- 2 To silence the alarm, type

>SIL

and press the Enter key.

- 3 To identify the defective VLCMs, type

>DISP STATE CBSY VLCM

and press the Enter key.

If the response indicates	Do
No CBSy VLCMs	step 17
CBSy VLCMs	step 4

- 4 To post the VLCM with the alarm condition, type

>POST VLCM CBSY

and press the Enter key.

Note: Record the name and number of the posted VLCM.

- 5 To identify the central side links to the host line PCM30 line group controller PLUS (PLGC+), type

>TRNSL C

and press the Enter key.

Example of a MAP display

Link 0: PLGC 1 2; Cap MS; Status: Sysb ;MsgCond: CLS

Link 1: PLGC 1 6; Cap MS; Status: Sysb ;MsgCond: CLS

Note: Record information for the links that have a status other than OK.

- 6 To post the host PLGC+, type

>POST PLGC plgc_no

and press the Enter key.

where

plgc_no

is the number of the PLGC+ (0 to 255) identified in step 5

- 7 To display the peripheral side links of the PLGC+, type

>TRNSL P

and press the Enter key.

PM VLCM

critical (continued)

Example of a MAP display

Link 2: VLCM REM1 00 0 0; Cap MS; Status: SysB; MsgCond: CLS

Link 6: VLCM REM1 00 0 1; Cap MS; Status: Sysb; MsgCond: CLS

Note: Record information for the links that have a status other than OK.

- 8** To busy the defective link, type
>BSY LINK link_no
 and press the Enter key.
 where

link_no

is the number of the defective peripheral side links identified in step 7

- 9** To test the busied link, type
>TST LINK link_no
 and press the Enter key.
 where

link_no

is the number of a defective peripheral side links busied in step 8

If the test	Do
passed	step 10
failed	step 16

- 10** To return the link to service, type
>RTS LINK link_no
 and press the Enter key.
 where

link_no

is the number of the defective peripheral side links busied in step 8

Note: Repeat this step for each link tested.

If RTS	Do
passed and no other links are SysB	step 11
passed but other links are SysB	step 8
failed	step 18

- 11** To identify the defective VLCM, type
>DISP STATE SYSB VLCM

PM VLCM critical (continued)

and press the Enter key.

If response indicates	Do
No SysB VLCMs	step 20
SysB VLCMs	step 12

- 12** To post the VLCM with the alarm condition identified in step 11, type
>POST VLCM SYSB
 and press the Enter key.

- 13** To busy the VLCM units, type
>BSY PM
 and press the Enter key.

- 14** To return the PM to service (RTS), type
>RTS PM
 and press the Enter key.

If RTS	Do
passed	step 20
failed	step 15

- 15** Check for stable links. To find and record the link numbers for the VLCM, type
>TRNSL C
 and press the Enter key.

Example of a MAP display

Link 0; PLGC 10;Cap MS;Status:P;;MsgCon;CLS

Link 1; PLGC 12;Cap MS;Status:P;;MsgCon;CLS

Link 2; PLGC 13;Cap S;Status:P;

Link 3; PLGC 14;Cap S;Status:P;

- 16** To access the CARRIER level of the MAP terminal, type
>TRKS;CARRIER
 and press the Enter key.

- 17** To post the host PLGC+ links and check link conditions for slip and frame errors, type

>POST PLGC plgc_no link_no

and press the Enter key.

where

plgc_no

is the number of the PLGC+ (0 to 255)

PM VLCM

critical (end)

link_no

is the number of the link associated with the host XPM (see step display)

Note: Repeat the POST command for each link provisioned for the VLCM.

Example of a MAP display

Host PLGC+ P-side link number



N	CLASS	SITE	PLGC	CKT	D	ALRM	SLIP	BER	FRME	ES	SES	STATE
0	REMOTE	HOST	1	0	C		0	0	<-7.	0	0	INSV

Note: This display shows carrier facilities from the host PLGC+ to the VLCM. Use the Detail REM option to check the carrier facilities from the remote site to the host PLGC+.

If the link conditions show	Do
a high number of SLIP and FRME	step 18
a very low number of SLIP and FRME	step 18
the links are working correctly	step 19

18	Contact your carrier maintenance support group for maintenance on the open or unstable links. When the carriers are restored, go to step 8.
19	Contact your next level of support.
20	You have completed this procedure.

PM VLCM minor

Alarm display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	1VLCM	.	.	.	.	.

Indication

A virtual line concentrating module (VLCM) preceded by a number under the PM header of the alarm banner indicates a VLCM minor alarm. The number preceding the VLCM indicates the number of VLCMs affected by the alarm. The alarm banner is at the MTC level of the MAP display. The preceding figure shows an alarm banner with a VLCM minor alarm.

Meaning

The VLCM is in-service trouble (ISTb) because one of the following conditions exists:

- both units are ISTb
- one unit is ISTb and one unit is in-service (CBSy)
- one unit is ISTb and one unit is system busy (SysB)
- one unit is in-service and one unit is SysB
- both units are in-service with some C-side links out of service

Impact

Service is not affected.

Common procedures

The following common procedures are referenced:

- "Monitoring system maintenance"
- "Clearing PM C-side faults"

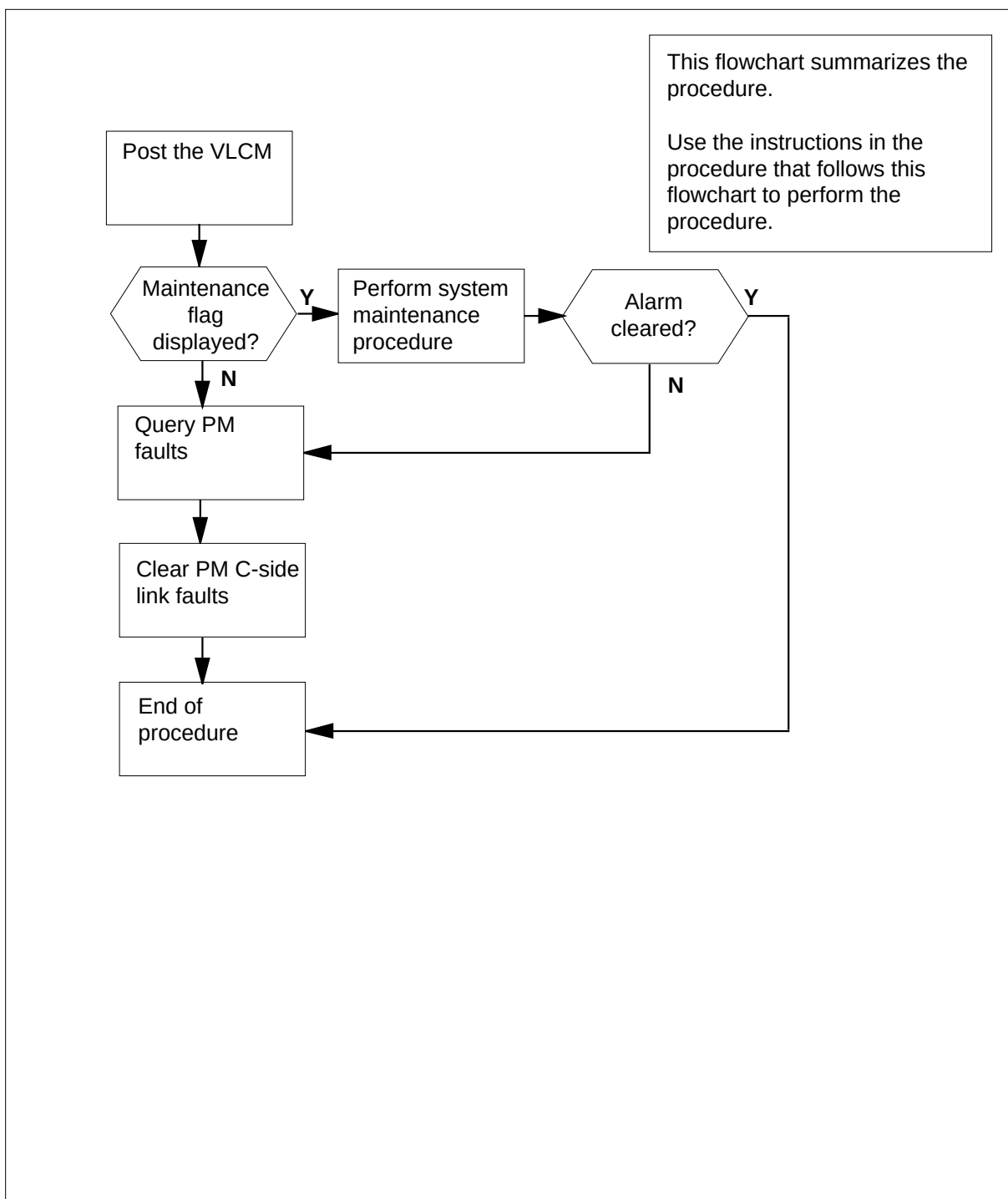
Do not go to the common procedure unless directed to do so in the step-action procedure.

Action

The following flowchart is only a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

PM VLCM minor (continued)

Summary of clearing a PM VLCM alarm



PM VLCM minor (continued)

How to clear a PM VLCM minor alarm

At the MAP display

- 1 To access the PM level of the MAP display, type
>MAPCI; MTC; PM
and press the Enter key.

Example of a MAP response:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	1	3	5	7	6	12
VLCM	0	0	0	0	1	0

If an audible alarm is	Do
ringing	step 2
not ringing	step 3

- 2 To silence the alarm, type
>SIL
and press the Enter key.
- 3 To display all the ISTb VLCMs, type
>DISP STATE ISTB VLCM
and press the Enter key.

Example MAP response:
ISTb VLCM : 0

Note 1: Record the name and number of the ISTb VLCMs.

Note 2: If multiple VLCMs are ISTb, select a VLCM to work on. Repeat this procedure for each VLCM that is ISTb.

- 4 To post the VLCM, type
>POST VLCM site vlcm
and press the Enter key.

where

site

is the site name of the VLCM (alphanumeric)

vlcm

is the number of the VLCM

Example of a MAP display

```
VLCM REM1 00 0 ISTb Links_OOS: CSide 1 PSide 0
Unit0:  ISTb
Unit1:  InSv
      11 11 11 11 11
```

PM VLCM minor (end)

Drwr: 01 23 45 67 89 01 23 45 67 89 Stby 1 Insv .. -- -- -- -- -- --
-- -- --

If a Mtce flag is	Do
displayed next to either unit	step 5
not displayed	step 7

- 5 Go to the common procedure "Monitoring system maintenance" in the document. After the maintenance procedure is completed, return to this step in the procedure.

- 6 Refer to the following table to determine the next step in clearing the alarm.

If the VLCM minor alarm	Do
did not change	step 7
changed	step 9
cleared	step 10

- 7 To determine the cause of the in-service trouble condition, type

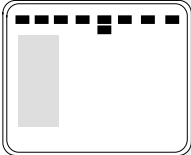
>QUERYPM FLT

and press the Enter key.

Note: The VLCM and its unit remain in-service trouble until all the in-service trouble conditions are cleared.

Example of a MAP display
C-side links are out of service

- 8 Go to the common procedure "Clearing PM C-side faults" in this document. After the clearing procedure is completed, return to this step.
- 9 The VLCM alarm changed to another type of alarm. Refer to the appropriate procedure in this document to clear the alarm, and return to this step.
- 10 You completed the procedure.

**PM VPU
critical****Alarm display**

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	1VPU	.	.	.	.	.
				C					

Indication

At the MTC level of the MAP display, VPU (preceded by a number) appears under the PM subsystem header of the alarm banner. The VPU indicates a critical alarm for the voice processor unit (VPU).

Meaning

A minimum of one VPU is system busy, system busy not accessible, or in-service trouble not accessible.

Result

The system busy VPU reduces the service provided by an application like Automated Directory Assistance Service (ADAS) or DMS-100 Mail.

The number under the PM header in the alarm banner indicates the number of VPUs affected.

Common procedures

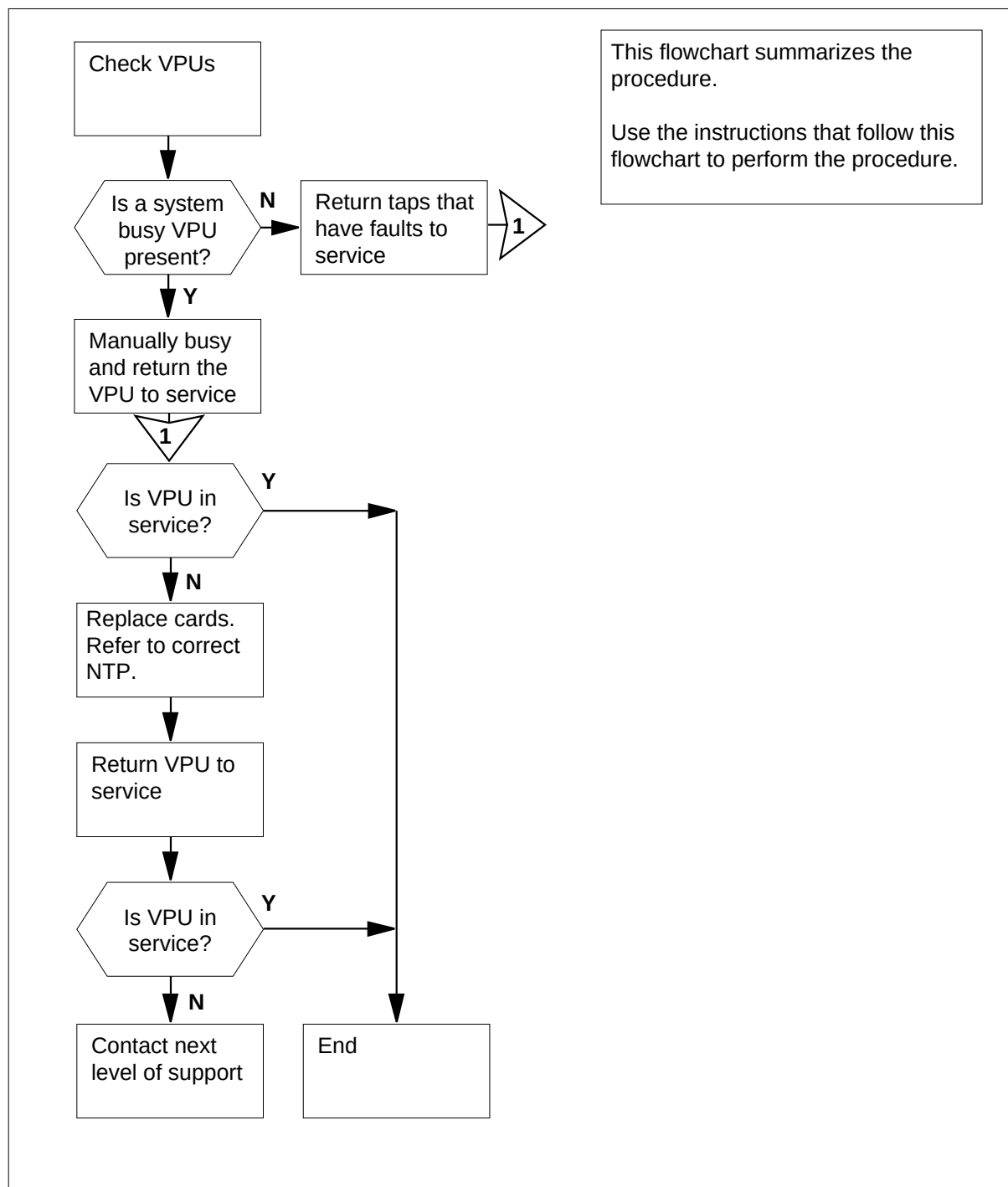
There are no common procedures.

Action

This section provides a summary flowchart of the procedure and a list of steps to clear an alarm. A detailed step-action procedure follows the flowchart.

PM VPU critical (continued)

Summary of clearing a PM VPU critical alarm



PM VPU critical (continued)

Clearing a PM VPU critical alarm

At the MAP terminal

- 1 Check the MAP alarm banner of the MAP display to confirm that all NIU alarms cleared.

If all NIU alarms	Do
cleared	step 3
did not clear	step 2

- 2 Go to the correct NIU alarm clearing procedure in this document. Complete the procedure and return to this point.

If the VPU critical alarm	Do
cleared	step 118
did not clear	step 3

- 3 To access the PM level of the MAP display, type
>MAPCI;MTC;PM
and press the Enter key.

Example of a MAP display:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	1	1	1	3	2	12

- 4 To display all system busy VPUs, type
>DISP STATE SYSB VPU
and press the Enter key.

- 5 Determine if a system busy VPU is present.

If system busy VPUs	Do
are present	step 6
are not present	step 28

- 6 Record the number of the VPUs.
- 7 To post the system busy VPU, type
>POST VPU vpu_no
and press the Enter key.

PM VPU
critical (continued)

where

vpu_no
is the number of the VPU (0 to 179)

Example of a MAP display:

VPU 1 SysB

- 8** Determine the state of the posted VPU.

If the posted VPU	Do
is SysB (NA)	step 33
is SysB	step 9

- 9** The VPU has a problem. Wait 15 min while the system tries to clear the fault.

If the state of the VPU	Do
changes from SysB to InSv	step 118
does not change	step 10

- 10** To force the VPU to busy, type

>BSYFORCE

and press the Enter key.

- 11** To test the VPU, type

>TST

and press the Enter key.

If the TST command	Do
passed	step 18
failed, and the system did not generate a card list	step 12
failed, and the system generated a card list	step 13

- 12** To set the VPU again, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 18

PM VPU critical (continued)

	If the PMRESET command	Do
	failed, and the system did not generate a card list	step 17
	failed, and the system generated a card list	step 13
13	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.	
14	Replace the first card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
At the MAP terminal		
15	To manually busy the VPU, type >BSY VPU vpu_no and press the Enter key. <i>where</i> vpu_no is the number of the VPU (0 to 179)	
	If the BSY command	Do
	passed	step 16
	failed	step 117
16	To set the VPU again, type >PMRESET and press the Enter key.	
	If the PMRESET command	Do
	passed	step 18
	failed	step 17
17	To load the VPU, type >LOADPM and press the Enter key.	
	If the LOADPM command	Do
	passed	step 18

PM VPU**critical** (continued)

	If the LOADPM command	Do
	failed, and the system generated a card list	step 19
	failed, and the system did not generate a card list	step 93
18	To return the VPU to service, type >RTS and press the Enter key.	
	If the RTS command	Do
	passed	step 118
	failed	step 93
19	Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.	
20	Replace the first card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
At the MAP terminal		
21	To manually busy the VPU, type >BSY VPU vpu_no and press the Enter key. <i>where</i> vpu_no is the number of the VPU (0 to 179)	
22	To set the VPU again, type >PMRESET and press the Enter key.	
	If the PMRESET command	Do
	passed	step 27
	failed	step 23
23	To load the VPU, type >LOADPM	

PM VPU critical (continued)

and press the Enter key.

If the LOADPM command	Do
passed	step 27
failed, and you have not replaced all cards on the list that you recorded at step 19	step 24
failed, and you replaced all cards on the list that you recorded at step 19	step 93

- 24** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

At the MAP terminal

- 25** To manually busy the VPU, type
>BSY VPU vpu_no
 and press the Enter key.
where
vpu_no
 is the number of the VPU (0 to 179)

- 26** Go to step 22.

- 27** To return the VPU to service, type
>RTS
 and press the Enter key.

If the RTS command	Do
passed	step 118
failed	step 93

- 28** An in-service trouble not accessible VPU can generate the alarm. To post the in-service trouble VPUs, type

>POST VPU ISTB
 and press the Enter key.

Example of a MAP display:

VPU 1 ISTb (NA)

If the posted VPU	Do
is ISTb (NA)	step 32

PM VPU**critical** (continued)

	If the posted VPU	Do
	is ISTb	step 29
29	To scroll to the next in-service trouble VPU in the posted set, type >NEXT and press the Enter key.	
30	Determine if the posted VPU is in-service trouble not accessible.	
	If the posted VPU	Do
	is ISTb (NA)	step 32
	is ISTb	step 31
31	Determine if you reached the end of the posted set.	
	If you	Do
	did not reach the end of the posted set	step 29
	reached the end of the posted set	step 117
32	To determine the LIM that associates with the in-service trouble not accessible VPU, type >QUERYPM and press the Enter key. <i>Example of a MAP display:</i> <pre> Location: LIM 0 Shelf:1 Slot:12 FTA:425A 1000 PM Load : Default:VPX35CV Running:VPX36BX Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA Reserved : Service:ADAS Options: AUDIO: PROALF Trouble: Loadname Mismatch FBus Message LIM 0 Tap 11 Unit 0: ISTb . Unit 1: ISTb . Channel Audits NIU 1 Port 10 Open ON ISTb InSv Open ON ISTb InSv </pre> Go to step 34.	
33	To determine the LIM that associates with the system busy not accessible VPU, type >QUERYPM and press the Enter key. <i>Example of a MAP display:</i>	

PM VPU critical (continued)

```

Location: LIM 0 Shelf:1 Slot:12 FTA:425A 1000
PM Load : Default:VPX35CV Running:VPX36BX
Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA
Reserved : Service:ADAS Options: AUDIO: PROALF
Trouble: Use QueryPM FLT to list trouble conditions
          FBus      Message      CBus
          LIM 0      Tap 11      Channel Audits NIU 1      Port 10
Unit 0:  InSv      .            Open ON  InSv 00S
Unit 1:  InSv      .            Open ON  InSv 00S

```

- 34** Record the number of the VPU, the number of the LIM for the VPU, and the number of the F-bus tap.

Note: The VPU number appears on the right side of the VPU header. The LIM number appears on the right side of the LIM header.

- 35** To post the LIM for the VPU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no

is the number of the LIM (0 to 17)

Example of a MAP display:

```

LIM 1 InSv
      Links_00S  Taps_00S
Unit0: InSv      .            1
Unit1: InSv      .            1

```

- 36** To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP display:

```

          Tap:      0      4      8      12      16      20
FBus0: InSv      .-S-  .-.  .-.  .-.  I.-.  .-.
FBus1: InSv      .-S-  .-.  .-.  .-.  I.-.  .-.

```

- 37** Determine the state of the LIM units and both F-buses (0 and 1).

Note: Make sure that each LIM unit is in service or in-service trouble. Make sure that each F-bus is in service or in-service trouble.

If the state of the LIM and both F-buses	Do
is InSv	step 40
is other than listed here	step 38

PM VPU**critical** (continued)

- 38** An LIM or LIMF alarm is present. Perform the correct alarm clearing procedure in this document. Complete the procedure and return to this point.
- 39** Determine if the VPU critical alarm cleared.
- | If the VPU critical alarm | Do |
|---------------------------|----------|
| cleared | step 118 |
| did not clear | step 3 |
- 40** Determine the state of the F-bus taps that associates with the VPU.
Note: The tap number that you recorded in step 34 applies to both F-buses.
- | If | Do |
|---|---------|
| both F-bus taps are M | step 43 |
| both F-bus taps are S | step 42 |
| one F-bus tap is M and the other F-bus tap is S | step 41 |
- 41** Work on the manual-busy F-bus tap first.
Go to step 44.
- 42** To force the F-bus tap that associates with the VPU to busy, type
>BSY FBUS fbus_no tap_no FORCE
and press the Enter key.
where
fbus_no
is the number of the F-bus (0 or 1)
tap_no
is the number of the tap (0 to 35)
Go to step 45.
- 43** Choose one of the manual-busy taps on the F-bus 0 or 1 to work on.
- 44** Consult office records or operating company personnel. Determine the reason that the tap is manual-busy.
When you have permission, continue this procedure.
- 45** To return the F-bus tap for the VPU to service, type
>RTS FBUS fbus_no tap_no FORCE
and press the Enter key.
where
fbus_no
is the number of the F-bus (0 or 1)
-

PM VPU critical (continued)

tap_no
is the number of the tap (0 to 35)

	If the RTS command	Do
	passed	step 81
	failed, and the system generated a card list, and both VPU taps are out of service	step 46
	failed, and the system did not generate a card list	step 81
	failed, with the response Return to Service failed - local maintenance not accessible	step 81
46	Record the location, description, slot number, PEC, and PEC suffix of each card on the list.	
47	Determine the state of the F-bus taps for the VPU.	
	If	Do
	both VPU taps are M	step 48
	at least one tap is S	step 69
48	Replace the first card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	

At the MAP terminal

- 49** To manually busy the offline VPU, type
>BSY VPU vpu_no
 and press the Enter key.
where
vpu_no
 is the number of the VPU (0 to 179)
- 50** To post the LIM for the VPU, type
>POST LIM lim_no
 and press the Enter key.
where
lim_no
 is the number of the LIM (0 to 17)
- 51** To access the F-bus level of the MAP display, type
>FBUS
 and press the Enter key.

PM VPU**critical** (continued)

- 52** To return the first F-bus tap that associates with the VPU to service, type
>RTS FBUS fbus_no tap_no
 and press the Enter key.

where

fbus_no
 is the number of the F-bus (0 or 1)

tap_no
 is the number of the tap (0 to 35)

If the RTS command	Do
passed	step 58
failed, and you have not re- placed all cards on the list	step 53
failed, and you replaced all cards on the list	step 93

- 53** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

At the MAP terminal

- 54** To manually busy the offline VPU, type
>BSY VPU vpu_no
 and press the Enter key.

where

vpu_no
 is the number of the VPU (0 to 179)

- 55** To post the LIM that associates with the VPU, type
>POST LIM lim_no
 and press the Enter key.

where

lim_no
 is the number of the LIM (0 to 17)

- 56** To access the F-bus level of the MAP display, type
>FBUS
 and press the Enter key.

- 57** Go to step 52.

- 58** To return the second F-bus tap for the VPU to service, type
>RTS FBUS fbus_no tap_no

PM VPU
critical (continued)

and press the Enter key.

where

fbus_no

is the number of the F-bus (0 or 1)

tap_no

is the number of the tap (0 to 35)

If the RTS command	Do
passed	step 59
failed	step 93

59 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

60 To post the VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no

is the number of the VPU (0 to 179)

61 To set the VPU again, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 66
failed	step 62

62 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 66
failed, and the system generated a card list	step 63
failed, and you have not replaced all cards on the list	step 67
failed, and you replaced all cards on the list	step 93

PM VPU**critical** (continued)

- 63** Record the location, description, slot number, PEC, and PEC suffix of each card on the list.
- 64** Replace the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

At the MAP terminal

- 65** To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no

is the number of the VPU (0 to 179)

Go to step 61.

- 66** To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 118
failed	step 117

- 67** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 68** To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no

is the number of the VPU (0 to 179)

Go to step 61.

- 69** To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

- 70** To post the VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no

is the number of the VPU (0 to 179)

PM VPU critical (continued)

- 71** To manually busy the VPU, type
>BSY
and press the Enter key.

If the BSY command	Do
passed	step 73
failed	step 72

- 72** To force the VPU to busy, type
>BSYFORCE
and press the Enter key.

- 73** Replace the first card on the list that you recorded at step 46. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

At the MAP terminal

- 74** To manually busy the VPU, type
>BSY VPU vpu_no
and press the Enter key.
where

vpu_no
is the number of the VPU (0 to 179)

If the BSY command	Do
passed	step 75
failed	step 117

- 75** To set the VPU again, type
>PMRESET
and press the Enter key.

If the PMRESET command	Do
passed	step 80
failed	step 76

- 76** To load the VPU, type
>LOADPM

PM VPU critical (continued)

and press the Enter key.

If the LOADPM command	Do
passed	step 80
failed, and you have not replaced all cards on the list that you recorded at step 46	step 77
failed, and you replaced all cards on the list that you recorded at step 46	step 93

- 77** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

At the MAP terminal

- 78** To manually busy the VPU, type
>BSY VPU vpu_no
 and press the Enter key.
where
vpu_no
 is the number of the VPU (0 to 179)

- 79** Go to step 75.

- 80** To return the VPU to service, type
>RTS
 and press the Enter key.

If the RTS command	Do
passed	step 118
failed	step 93

- 81** Determine if you already worked on the other VPU tap.

If you	Do
already worked on the other VPU tap	step 90
did not work on the other VPU tap	step 82

PM VPU critical (continued)

82	Determine the state of the second VPU tap.												
<table> <tr> <th data-bbox="540 415 917 478">If the state of the second VPU tap</th><th data-bbox="987 415 1023 441">Do</th></tr> <tr> <td data-bbox="540 499 602 525">is M</td><td data-bbox="987 499 1078 525">step 84</td></tr> <tr> <td data-bbox="540 556 591 581">is S</td><td data-bbox="987 556 1078 581">step 83</td></tr> </table>		If the state of the second VPU tap	Do	is M	step 84	is S	step 83						
If the state of the second VPU tap	Do												
is M	step 84												
is S	step 83												
83	To force one of the system busy taps for the VPU to busy, type >BSY FBUS fbus_no tap_no FORCE and press the Enter key. <i>where</i> fbus_no is the number of the F-bus (0 or 1) tap_no is the number of the tap (0 to 35)												
84	To return the F-bus tap for the VPU to service, type >RTS FBUS fbus_no tap_no and press the Enter key. <i>where</i> fbus_no is the number of the F-bus (0 or 1) tap_no is the number of the tap (0 to 35)												
<table> <tr> <th data-bbox="540 1247 797 1272">If the RTS command</th><th data-bbox="1242 1247 1278 1272">Do</th></tr> <tr> <td data-bbox="540 1304 630 1329">passed</td><td data-bbox="1242 1304 1333 1329">step 85</td></tr> <tr> <td data-bbox="540 1360 1084 1386">failed, and the system generated a card list</td><td data-bbox="1242 1360 1333 1386">step 46</td></tr> <tr> <td data-bbox="540 1417 1166 1442">failed, and the system did not generate a card list</td><td data-bbox="1242 1417 1333 1442">step 93</td></tr> <tr> <td data-bbox="540 1474 854 1499">failed, with the response</td><td data-bbox="1242 1474 1333 1499">step 93</td></tr> <tr> <td colspan="2" data-bbox="540 1512 1209 1575">Return to service failed - local maintenance not accessible</td></tr> </table>		If the RTS command	Do	passed	step 85	failed, and the system generated a card list	step 46	failed, and the system did not generate a card list	step 93	failed, with the response	step 93	Return to service failed - local maintenance not accessible	
If the RTS command	Do												
passed	step 85												
failed, and the system generated a card list	step 46												
failed, and the system did not generate a card list	step 93												
failed, with the response	step 93												
Return to service failed - local maintenance not accessible													
85	Determine if one VPU critical alarm cleared.												
<table> <tr> <th data-bbox="540 1667 846 1692">If one VPU critical alarm</th><th data-bbox="1242 1667 1278 1692">Do</th></tr> <tr> <td data-bbox="540 1724 634 1749">cleared</td><td data-bbox="1242 1724 1349 1749">step 118</td></tr> <tr> <td colspan="2" data-bbox="540 1780 1214 1843">did not clear and you are working on an ISTb (NA) VPU</td></tr> </table>		If one VPU critical alarm	Do	cleared	step 118	did not clear and you are working on an ISTb (NA) VPU							
If one VPU critical alarm	Do												
cleared	step 118												
did not clear and you are working on an ISTb (NA) VPU													

PM VPU**critical** (continued)

	If one VPU critical alarm	Do
	did not clear and you are working on a SysB (NA) VPU	step 86
86	To quit from the F-bus level of the MAP display, type >QUIT and press the Enter key.	
87	To post the system busy not accessible VPU, type >POST VPU vpu_no and press the Enter key. <i>where</i> vpu_no is the number of the VPU (0 to 179)	
88	Determine the state of the VPU.	
	If the state of the VPU	Do
	changed from SysB (NA) to SysB	step 89
	did not change	step 92
89	You are working on a system busy VPU. Go to step 10.	
90	To quit from the F-bus level of the MAP display, type >QUIT and press the Enter key.	
91	To post the VPU, type >POST VPU vpu_no and press the Enter key. <i>where</i> vpu_no is the number of the VPU (0 to 179)	
92	To manually force the VPU to busy, type >BSYFORCE and press the Enter key.	

PM VPU critical (continued)

- 93 Determine if you unseated then reseated the NTEX22, NTMX97, and NTMX99 VPU cards during this procedure.

If you	Do
unseated then reseated the VPU cards in this procedure	step 117
have not unseated then reseated the VPU cards in this procedure	step 94

- 94 To offline the VPU, type

>OFFL

and press the Enter key.

- 95 To determine the location of the offline VPU, type

>QUERYPM

and press the Enter key.

Note: The QUERYPM command provides the LIM number, shelf number, and slot number of the far left card of the VPU card pair.

Example of a MAP response:

```
Location: LIM 0 Shelf:1 Slot:12 FTA:425A 1000
PM Load : Default:VPX35CV Running:VPx36BX
Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA
Reserved : Service:ADAS Options: AUDIO: PROALF
Trouble: Loadname Mismatch

      FBus      Message      CBus
LIM 0   Tap 11   Channel   Audits   NIU 1   Port 10
Unit 0:  ISTb   .   Open    ON        ISTb   InSv
Unit 1:  ISTb   .   Open    ON        ISTb   InSv
```

- 96



WARNING

Static electricity damage

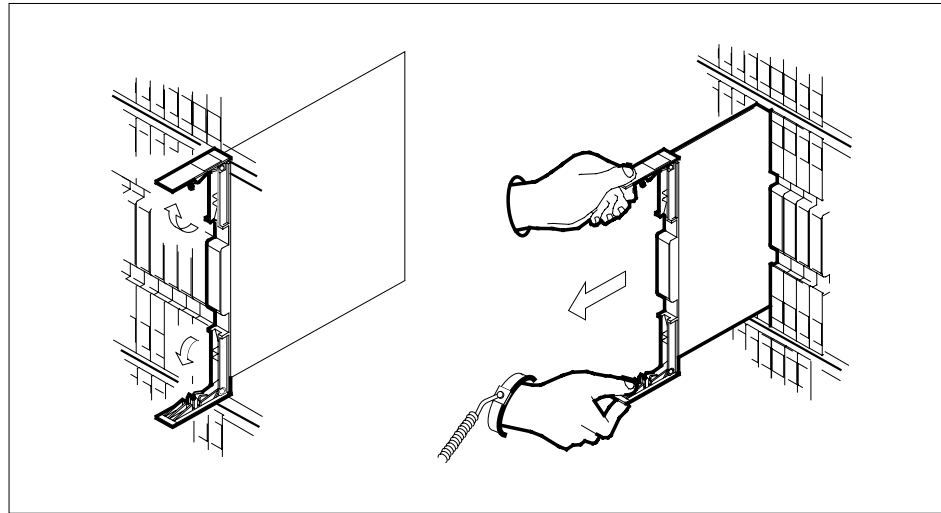
Wear a wrist strap that connects with the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist-strap protects the cards against static electricity damage.

Locate the NTEX22 card that associates with the VPU.

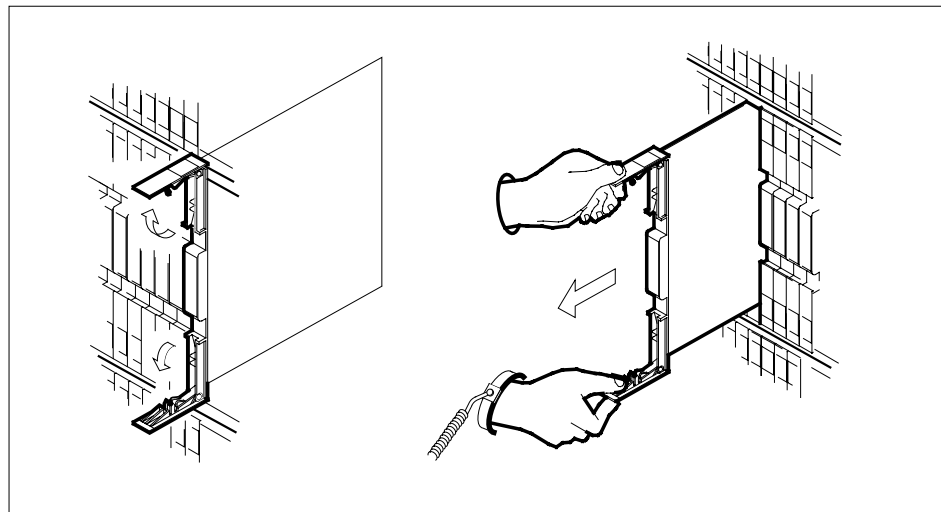
- 97 Open the locking levers on the card. Carefully pull the NTEX22 card toward you; unseat the card from the connector.

PM VPU

critical (continued)

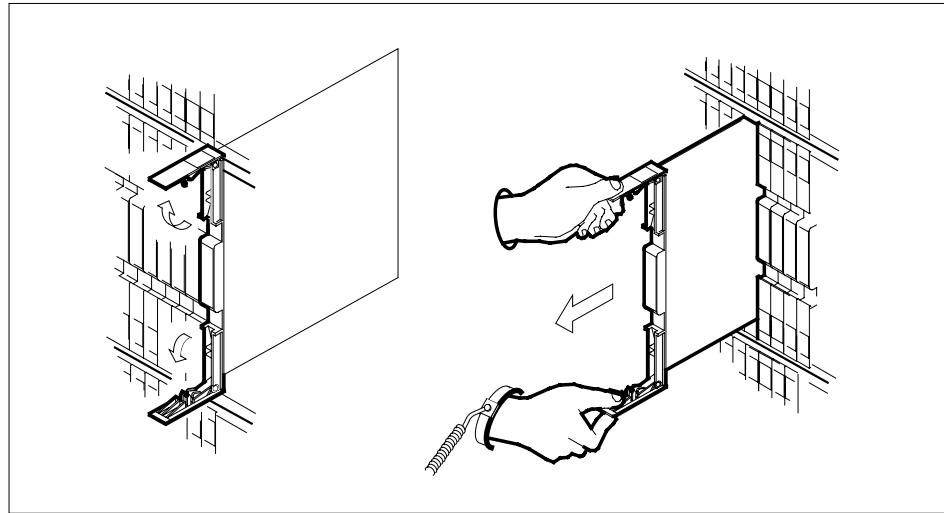


- 98 Leave the NTEX22 card in the slot on the link interface shelf (LIS).
- 99 Locate the NTMX97 card that associates with the VPU.
- 100 Open the locking levers on the card. Carefully pull the NTMX97 card toward you; unseat the card from the connector.

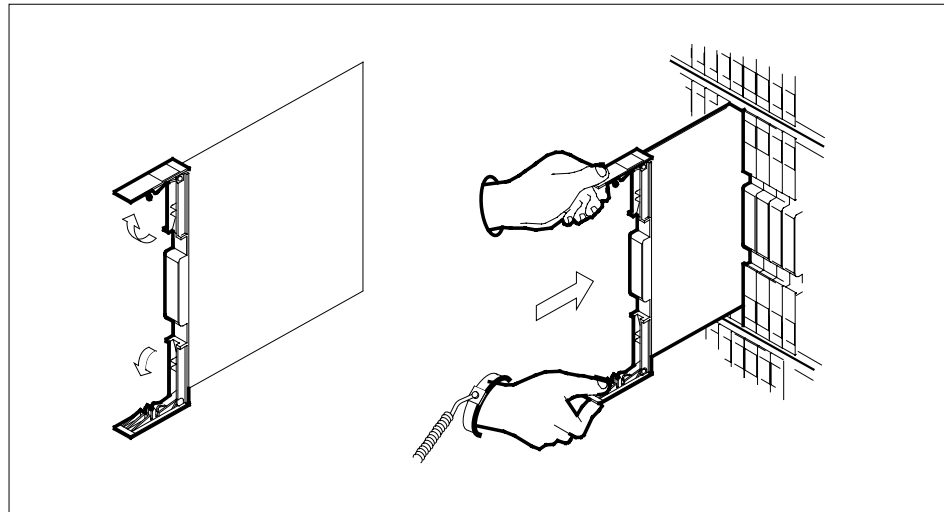


- 101 Leave the NTMX97 card in the slot on the LIS.
- 102 Locate the NTMX99 card that associates with the VPU.
- 103 Open the locking levers on the card. Carefully pull the NTMX99 card toward you; unseat the card from the connector.

PM VPU
critical (continued)



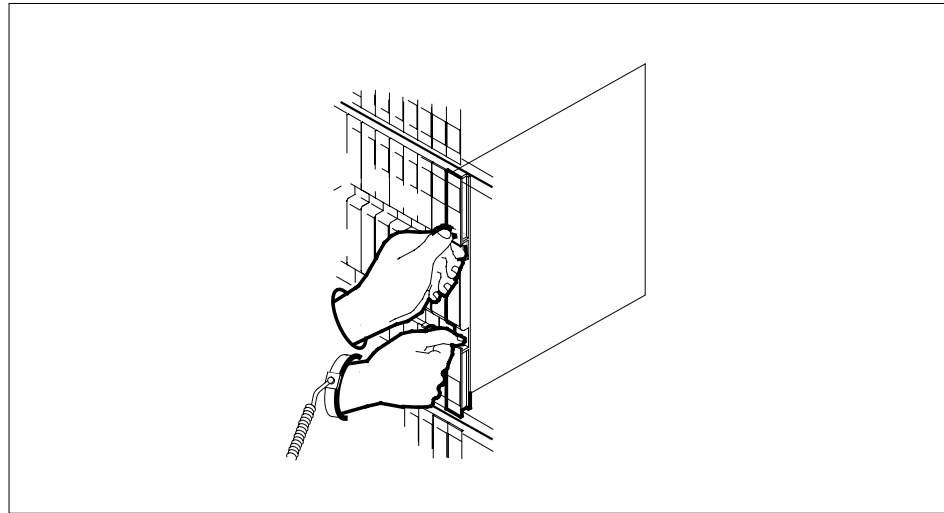
- 104** Carefully slide the NTMX99 card back into the LIS.



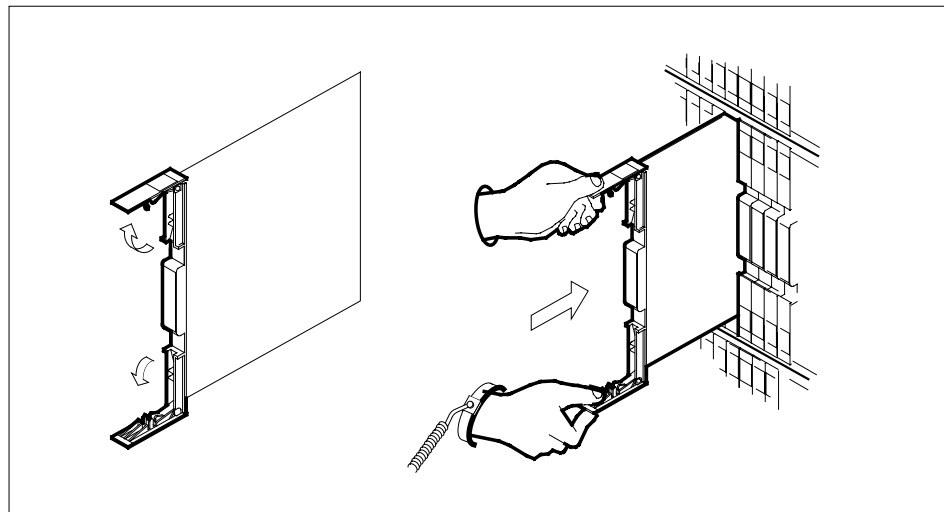
- 105** Seat and lock the NTMX99 card, as follows:
- a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
 - b** Close the locking levers.

PM VPU

critical (continued)

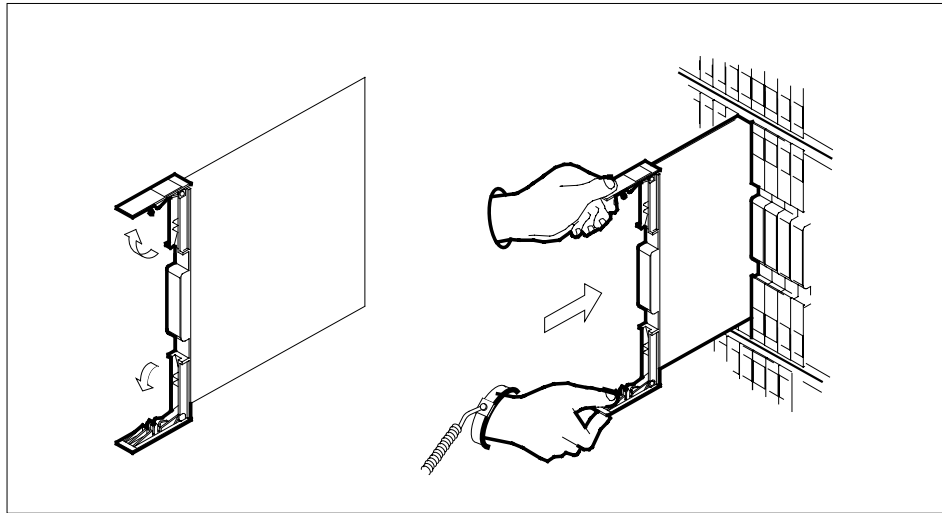


- 106** Carefully slide the NTMX97 card back into the LIS.

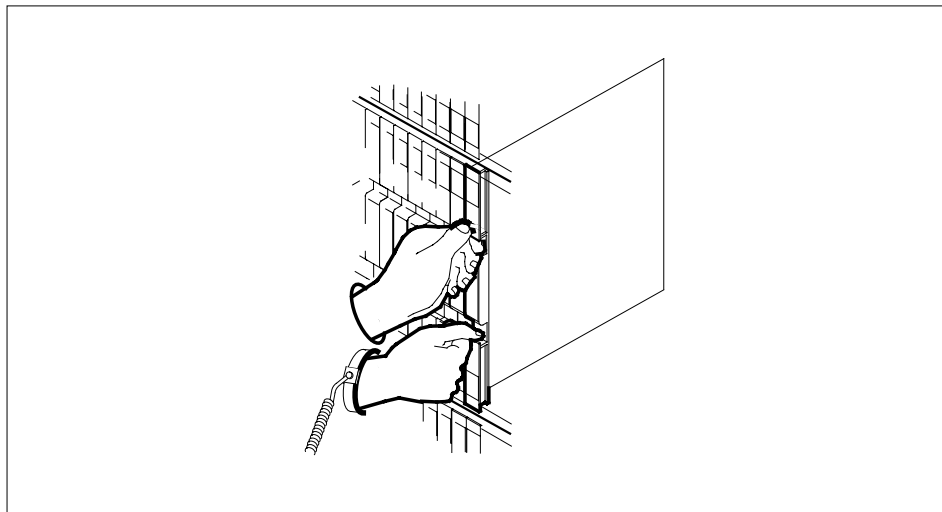


- 107** Seat and lock the NTMX97 card, as follows:
- a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
 - b** Close the locking levers.
- 108** Carefully slide the NTEX22 card back into the LIS.

PM VPU
critical (continued)



- 109** Seat and lock the NTEX22 card, as follows:
- a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
 - b** Close the locking levers.



PM VPU

critical (continued)

At the MAP terminal

110 To manually busy the VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no

is the number of the VPU (0 to 179)

111 To set the VPU again, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 113
failed	step 112

112 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 113
failed	step 117

113 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 118
failed, and the system did not generate a card list	step 117
failed, and the system generated a card list	step 114
failed, and the system generated a card list, and you replaced cards in the VPU	step 117

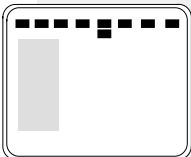
114 Record the location, description, slot number, PEC, and PEC suffix of each card on the list.

PM VPU
critical (end)

- 115** To post the LIM for the VPU, type
>POST LIM lim_no
and press the Enter key.
where
lim_no
is the number of the LIM (0 to 17)
- 116** To access the F-bus level of the MAP display, type
>FBUS
and press the Enter key.
Go to step 46.
- 117** For additional help, contact the next level of support.
- 118** The procedure is complete.

PM VPU major

Alarm display

	CM	MS	IOD	Net	PM 1VPU M	CCS	Lns	Trks	Ext	APPL
	.	.	.	.		.	.	.	.	.

Indication

At the MTC level of the MAP display, VPU (preceded by a number) appears under the PM header of the alarm banner. The VPU indicates a major alarm for the voice processor unit (VPU).

Meaning

One or more VPUs are manually busy or manually busy not accessible.

Result

Manually busy VPUs reduce the service provided by an application. Examples of service provided by an application are Automated-Directory Assistance Service (ADAS) or DMS-100 Mail.

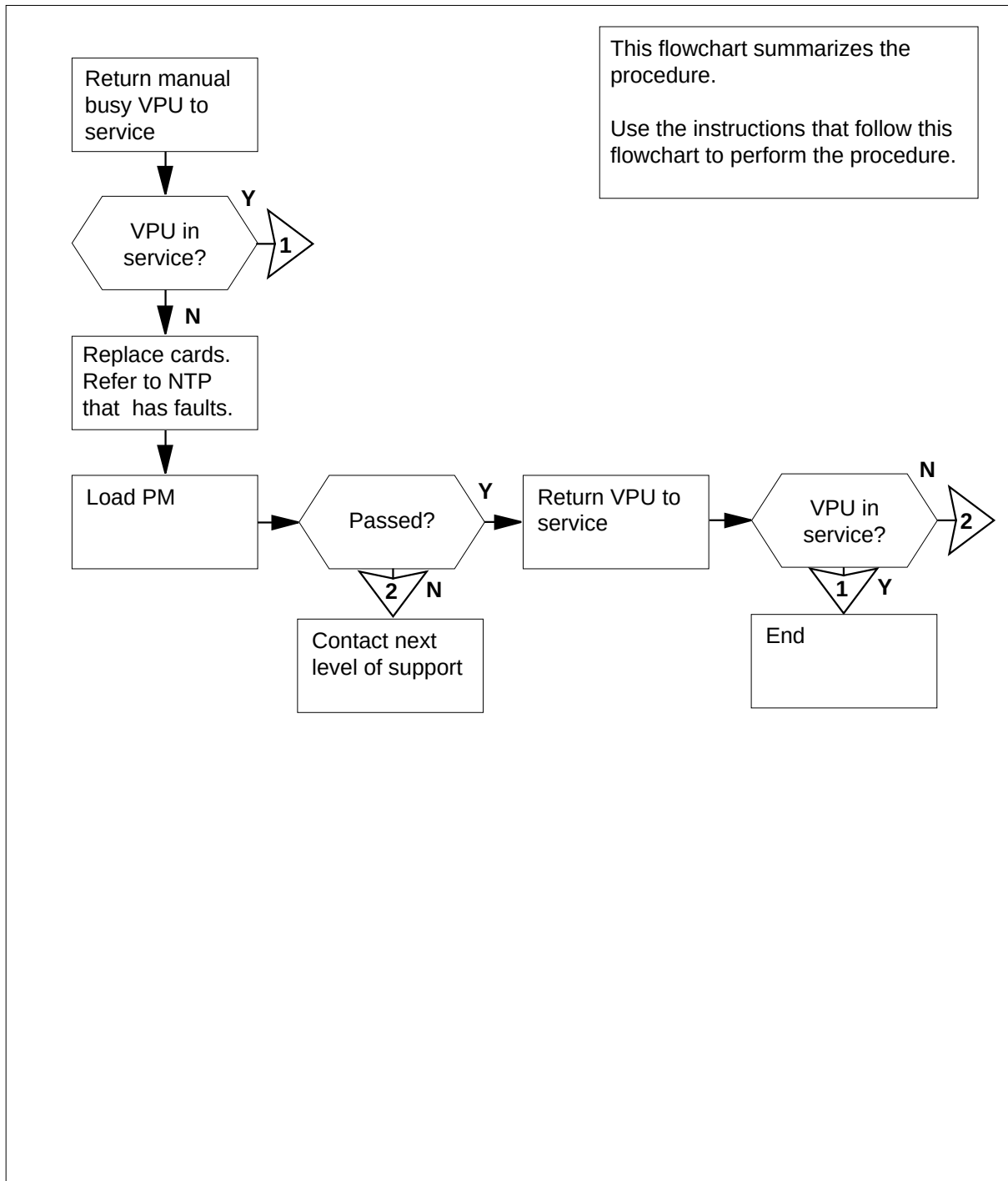
The number under the PM header in the alarm banner indicates the number of affected VPUs.

Common procedures

There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

**PM VPU
major** (continued)**Summary of clearing a PM VPU major alarm**

PM VPU**major** (continued)

Clearing a PM VPU alarm***At the MAP terminal***

- 1** To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	0	1	1	3	2	49

- 2** To display all manually-busy VPUs

>DISP STATE MANB VPU

and press the Enter key.

- 3** Record the manual-busy VPUs.

- 4** To post a manual-busy VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no

is the number of the VPU that you recorded in step 3

Example of a MAP response:

VPU 1 ManB

- 5** Determine the state of the posted VPU.

If the posted VPU	Do
is ManB (NA)	step 19
is ManB	step 6

- 6** Determine from office records or operating company personnel why the VPU is manual busy.

When you have permission, continue this procedure.

- 7** To test the posted VPU, type

>TST

PM VPU major (continued)

and press the Enter key.

If the TST command	Do
passed	step 10
failed, and the system generated a card list	step 11
fails, and the system did not generate a card list	step 8

- 8** To reset the VPU, type
>PMRESET
and press the Enter key.

If the PMRESET command	Do
passed	step 10
failed, and the system generated a card list	step 11
fails, and the system did not generate a card list	step 9

- 9** To load the VPU, type
>LOADPM
and press the Enter key.

If the LOADPM command	Do
passed	step 10
failed, and the system generated a card list	step 11
fails, and the system did not generate a card list	step 71

- 10** To return the VPU to service, type
>RTS
and press the Enter key.

If the RTS command	Do
passed	step 91

PM VPU**major** (continued)

	If the RTS command	Do
	failed, and the system generated a card list	step 11
	failed, and the system did not generate a card list	step 71
11	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.	
12	Replace the first card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
At the MAP		
13	To manually busy the offline VPU, type >BSY and press the Enter key.	
	If the BSY command	Do
	passed	step 14
	failed	step 90
14	To reset the VPU, type >PMRESET and press the Enter key.	
	If the PMRESET command	Do
	passed	step 18
	failed	step 15
15	To load the VPU, type >LOADPM and press the Enter key.	
	If the LOADPM command	Do
	passed	step 18
	fails, and you did not replace all cards on the list that you recorded at step 11	step 16

PM VPU major (continued)

	If the LOADPM command	Do
	failed, and you replaced all cards on the list that you recorded at step 11	step 71
	fails, and the system did not generate a card list	step 71
16	Replace the next card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
17	Go to step 13.	
18	To return the VPU to service, type >RTS and press the Enter key.	
	If the RTS command	Do
	passed	step 91
	fails, and you did not replace all cards on the list that you recorded at step 11	step 16
	failed, and you replaced all cards on the list that you recorded at step 11	step 71
19	To determine the link interface module (LIM) for the manual busy not accessible VPU, type >QUERYPM and press the Enter key. <i>Example of a MAP response:</i> Location: LIM 0 Shelf:1 Slot:12 FTA:425A 1000 PM Load : Default:VPX35CV Running:VPx36BX Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA Reserved : Service:ADAS Options: AUDIO: PROALF	
20	Record the number of the VPU, the number of the LIM, and the number of the tap. Note: The VPU number appears on the right of the VPU header. The LIM number appears on the right of the word LIM in the MAP response. The tap number appears under the TAP header.	
21	To post the LIM for the VPU that you recorded in step 20, type >POST LIM lim_no and press the Enter key. <i>where</i>	

PM VPU

major (continued)

lim_no

is the number of the LIM (0 to 17)

Example of a MAP display:

```
LIM 1 InSv
      Links_00S   Taps_00S
Unit0: InSv      .           1
Unit1: InSv      .           1
      Tap:       0         4         8        12        16        20
FBus0: InSv      .-M-   .I.I   .I.I   .I.I   .-.   .--.
FBus1: InSv      .-M-   .I.I   .I.I   .I.I   .-.   .--.
```

- 22** To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

- 23** Determine the state of the LIM units and both F-buses (0 and 1).

Note: Make sure that each LIM unit is in service or in-service trouble.
Make sure that each F-bus is in service or in-service trouble.

If the LIM and both F-buses	Do
are InSv	step 26
are not InSv	step 24

- 24** An LIM or LIMF alarm is present. Perform the appropriate alarm clearing procedure in this document. Complete the procedure and return to this point.

- 25** Determine if the VPU major alarm cleared.

If the VPU major alarm	Do
cleared	step 91
did not clear	step 1

- 26** Determine the state of the F-bus taps for the VPU.

Note: The tap number that you recorded at step 20 applies to both F-bus 0 and F-bus 1.

If	Do
both F-bus taps are M	step 31
both F-bus taps are S	step 27
one F-bus tap is M and the other F-bus tap is S	step 30

PM VPU major (continued)

27 To quit from the F-bus level of the MAP display, type
>QUIT
and press the Enter key.

28 To post the VPU, type
>POST VPU vpu_no
and press the Enter key.
where
vpu_no
is the number of the VPU (0 to 179)

29 To return the VPU to service, type
>RTS
and press the Enter key.

If the RTS command	Do
passed	step 91
failed, and the system generated a card list	step 34
failed, and the system did not generate a card list	step 70

30 Work on the manual busy F-bus tap first.
Go to step 32.

31 Select one of the manual busy taps on either F-bus on which to work.

32 Determine from office records or operating company personnel why the tap is manually busy.

When you have permission, continue this procedure.

33 To return the F-bus tap for the VPU to service, type
>RTS FBUS fbus_no tap_no
and press the Enter key.

where
fbus_no
is the number of the F-bus (0 or 1)
tap_no
is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed	step 62

PM VPU**major** (continued)

	If the RTS command	Do
	failed, the system generated a card list, and both VPU taps are out of service	step 34
	fails, and the system did not generate a card list	step 62
	failed, with the response Return to Service failed - local maintenance not accessible	step 62
34	Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.	
35	Determine the state of the F-bus taps for the VPU.	
	If	Do
	both taps are M	step 36
	both taps are S	step 53
	a minimum of one tap is S	step 53
36	Replace the first card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
37	To manually busy the offline VPU, type >BSY VPU vpu_no and press the Enter key. <i>where</i> vpu_no is the number of the offline VPU (0 to 179)	
38	To post the LIM, type >POST LIM lim_no and press the Enter key. <i>where</i> lim_no is the number of the LIM (0 to 17)	
39	To access the F-bus level of the MAP display, type >FBUS and press the Enter key.	
40	To return the F-bus tap for the VPU to service, type >RTS FBUS fbus_no tap_no and press the Enter key.	

PM VPU major (continued)

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

	If the RTS command	Do
	passed	step 45
	failed, and the system generated a card list	step 41
	failed, and the system did not generate a card list	step 70
41	Replace the next card on the list. Perform the correct card replacement procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
42	To manually busy the offline VPU, type >BSY VPU vpu_no and press the Enter key. where vpu_no is the number of the offline VPU (0 to 179)	
	If the BSY command	Do
	passed	step 43
	failed	step 90
43	To post the LIM, type >POST LIM lim_no and press the Enter key. where lim_no is the number of the LIM (0 to 17)	
44	To access the F-bus level of the MAP display, type >FBUS and press the Enter key. Go to step 40.	
45	To return the other F-bus tap for the VPU to service, type >RTS FBUS fbus_no tap_no	

PM VPU

major (continued)

and press the Enter key.

where

fbus_no

is the number of the F-bus (0 or 1)

tap_no

is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed	step 46
failed, and the system generated a card list	step 46

- 46** To quit from the F-bus level of the MAP display, type
>QUIT

and press the Enter key.

- 47** To post the VPU, type
>POST VPU vpu_no

and press the Enter key.

where

vpu_no

is the number of the VPU (0 to 179)

- 48** To reset the VPU, type
>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 52
failed	step 49

- 49** To load the VPU, type
>LOADPM
and press the Enter key.

If the LOADPM command	Do
passed	step 52
failed, and you did not replace all cards on the list	step 50

PM VPU major (continued)

	If the LOADPM command	Do
	failed, and you replaced all cards on the list	step 70
50	Replace the next card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
51	To manually busy the offline VPU, type >BSY VPU vpu_no and press the Enter key. where vpu_no is the number of the offline VPU (0 to 179)	
	If the BSY command	Do
	passed	step 48
	failed	step 90
52	To return the VPU to service, type >RTS and press the Enter key.	
	If the RTS command	Do
	passed	step 91
	failed	step 70
53	To quit from the F-bus level, type >QUIT and press the Enter key.	
54	To post the VPU, type >POST VPU vpu_no and press the Enter key. where vpu_no is the number of the VPU (0 to 179)	
55	Replace the first card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
56	To manually busy the offline VPU, type >BSY VPU vpu_no	

PM VPU**major** (continued)

and press the Enter key.

where

vpu_no

is the number of the offline VPU (0 to 179)

	If the BSY command	Do
	passed	step 57
	failed	step 90
57	To reset the VPU, type >PMRESET and press the Enter key.	
	If the PMRESET command	Do
	passed	step 61
	failed	step 58
58	To load the VPU, type >LOADPM and press the Enter key.	
	If the LOADPM command	Do
	passed	step 61
	failed, and you did not replace all cards on the list	step 59
	failed, and you replaced all cards on the list	step 70
59	Replace the next card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
60	To manually busy the VPU, type >BSY VPU vpu_no and press the Enter key. where	

PM VPU major (continued)

vpu_no

is the number of the offline VPU (0 to 179)

If the BSY command	Do
passed	step 57
failed	step 90

61

To return the VPU to service, type
>RTS
and press the Enter key.

If the RTS command	Do
passed	step 90
failed	step 70

62

Determine the state of the second VPU tap.

If the state of the second VPU tap	Do
is M	step 64
is S	step 63

63

To manually busy the F-bus tap for the VPU, type
>RTS FBUS fbus_no tap_no
and press the Enter key.
where
fbus_no
is the number of the F-bus (0 or 1)
tap_no
is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed, and the other tap is out of service	step 64
passed, and the other tap is in service	step 64
failed, both taps are out of service, and the system generated a card list	step 34
failed, the other tap is in service, and the system generated a card list	step 64

PM VPU**major** (continued)

	If the RTS command	Do
	fails, and the system did not generate a card list	step 70
	failed with the responseReturn to service failed- local maintenance not accessible.	step 70
64	To quit from the F-bus level, type >QUIT and press the Enter key.	
65	To post the VPU, type >POST VPU vpu_no and press the Enter key. <i>where</i> vpu_no is the number of the VPU (0 to 179)	
66	To return the VPU to service, type >RTS and press the Enter key.	
	If the RTS command	Do
	passed	step 90
	failed, and the system generated a card list	step 67
	fails, and the system did not generate a card list	step 70
67	Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.	
68	To post the LIM for the VPU, type >POST LIM lim_no and press the Enter key. <i>where</i> lim_no is the number of the LIM (0 to 17)	
69	To access the F-bus level of the MAP display, type >FBUS and press the Enter key.	

PM VPU major (continued)

Go to step 35.

- 70** Determine if you unseated and reseated the NTEX22, NTMX97, and NTMX99 VPU cards during this procedure.

If you	Do
unseated and reseated the VPU cards	step 90
did not unseat and reseat the VPU cards	step 71

- 71** To offline the VPU, type

>OFFL

and press the Enter key.

- 72** To determine the location of the VPU, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

```
Location: LIM 0 Shelf:1 Slot:12 FTA:425A 1000
PM Load : Default:VPX35CV Running:VPx36BX
Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA
Reserved : Service:ADAS Options: AUDIO: PROALF
Trouble: Loadname Mismatch

          FBus      Message          CBus
          LIM 0 Tap 11  Channel Audits NIU 1 Port 10
Unit 0: ISTb .      Open      ON      ISTb InSv
Unit 1: ISTb .      Open      ON      ISTb InSv
```

Note: The QUERYPM command provides the LIM number, shelf number, and slot number of the far-left card of the VPU.

At the LPP

73



WARNING

Static electricity damage

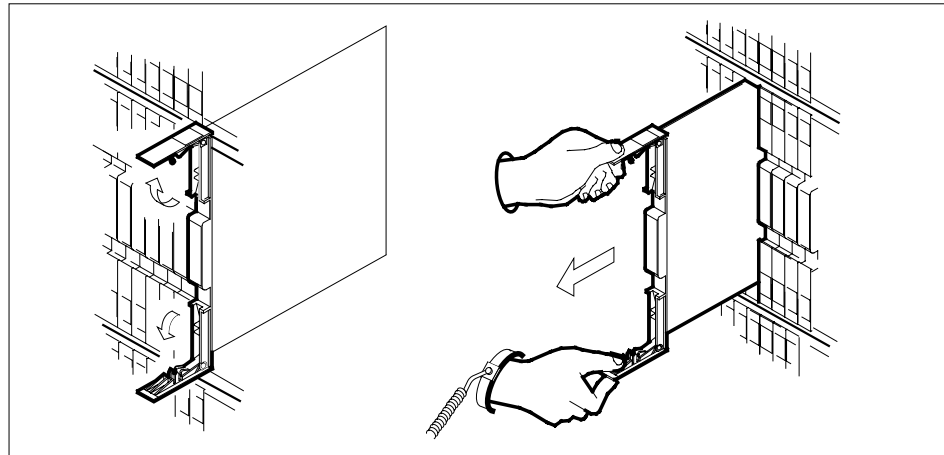
Wear a wrist strap that connects to the wrist-strap grounding point on the frame supervisory panel (FSP) to handle cards. The wrist strap protects cards against static electricity damage.

Locate the NTEX22 card for the VPU.

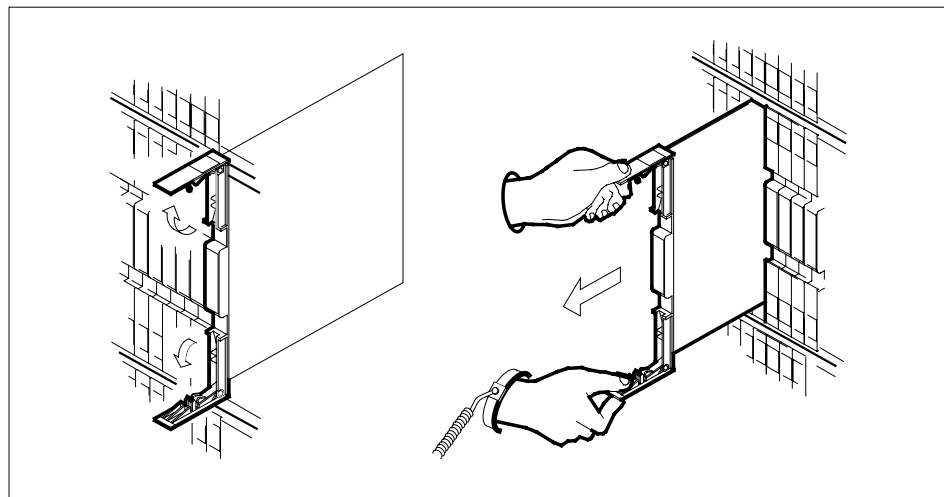
PM VPU

major (continued)

- 74 Open the locking levers on the card. Carefully pull the NTEX22 card toward you until you unseat the card from the connector.

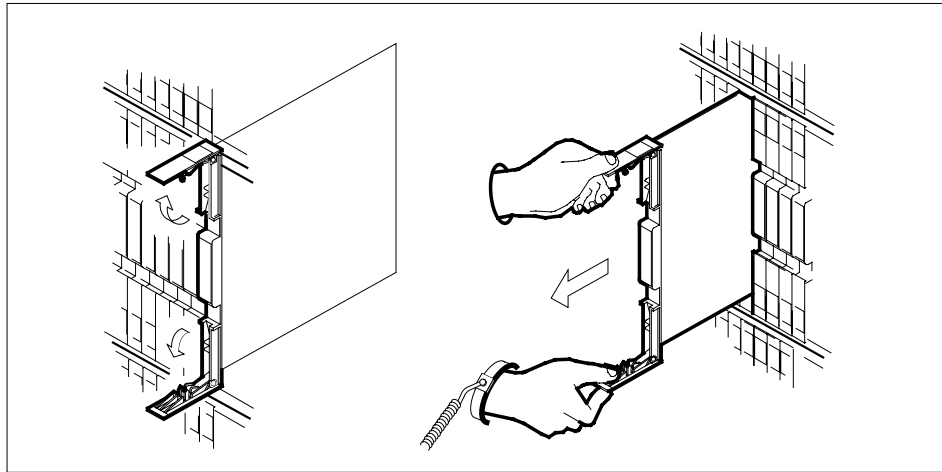


- 75 Leave the NTEX22 card in the slot on the link interface shelf (LIS).
- 76 Locate the NTMX97 card for the VPU.
- 77 Open the locking levers on the card. Carefully pull the NTMX97 card toward you until you unseat the card from the connector.

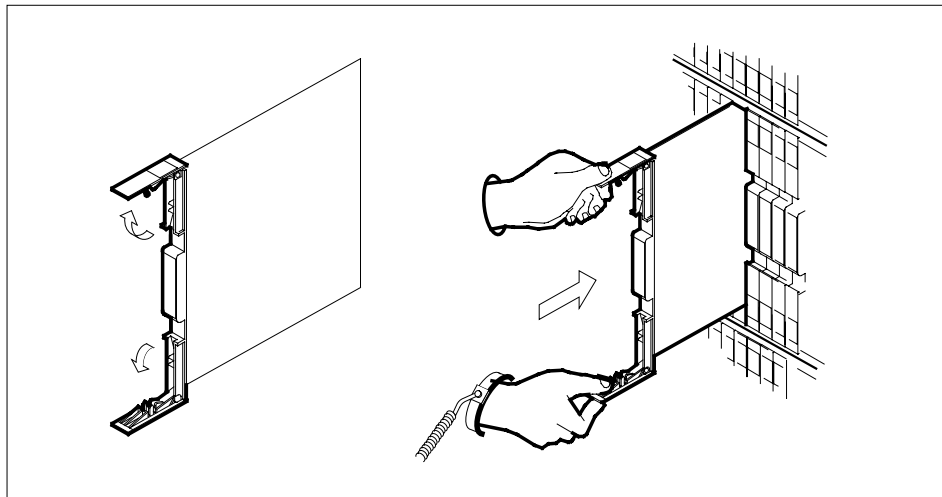


- 78 Leave the NTMX97 card in the slot on the LIS.
- 79 Locate the NTMX99 card for the VPU.
- 80 Open the locking levers on the card. Carefully pull the NTMX99 card toward you until you unseat the card from the connector.

PM VPU
major (continued)



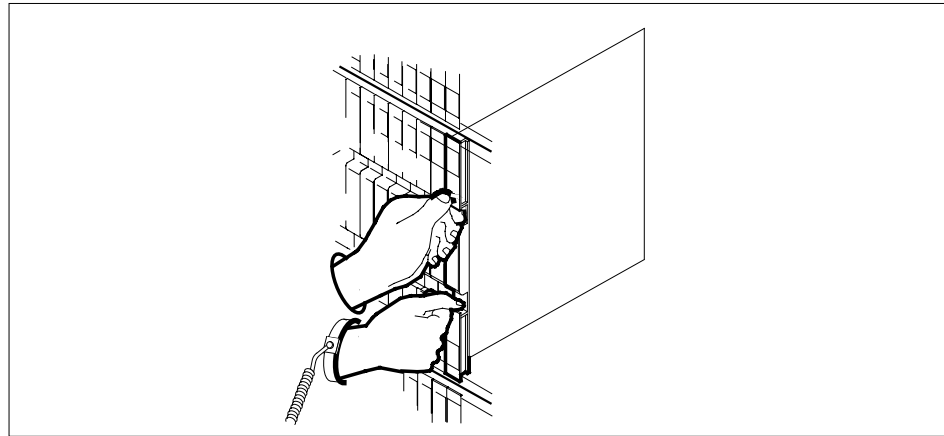
- 81** Carefully slide the NTMX99 card back into the LIS.



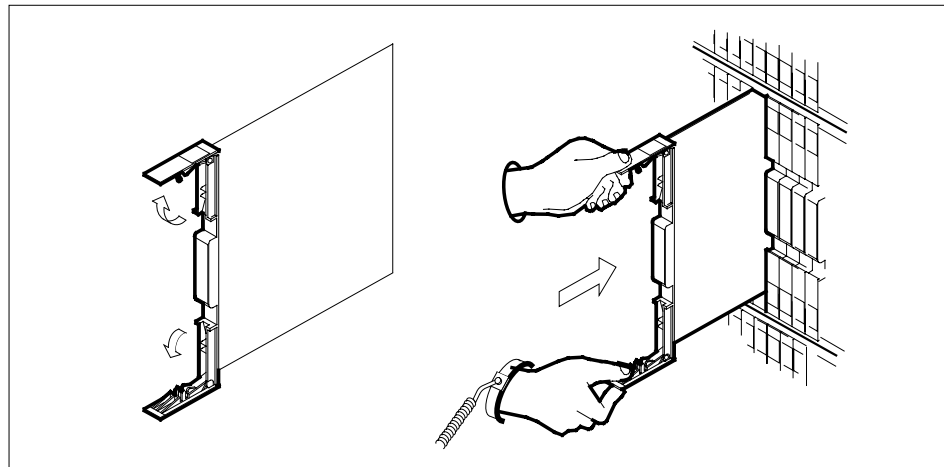
- 82** Seat and lock the NTMX99 card, as follows:
- a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
 - b** Close the locking levers.

PM VPU

major (continued)

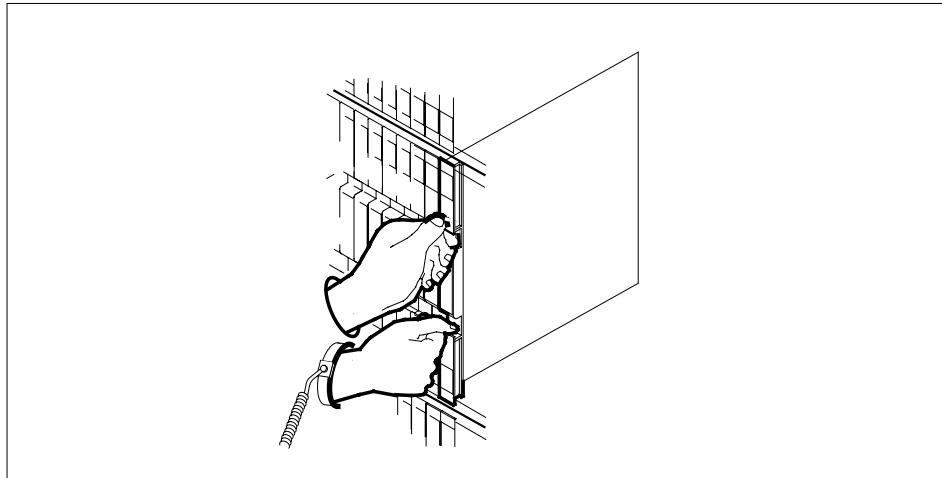


- 83** Carefully slide the NTMX97 card back into the LIS.

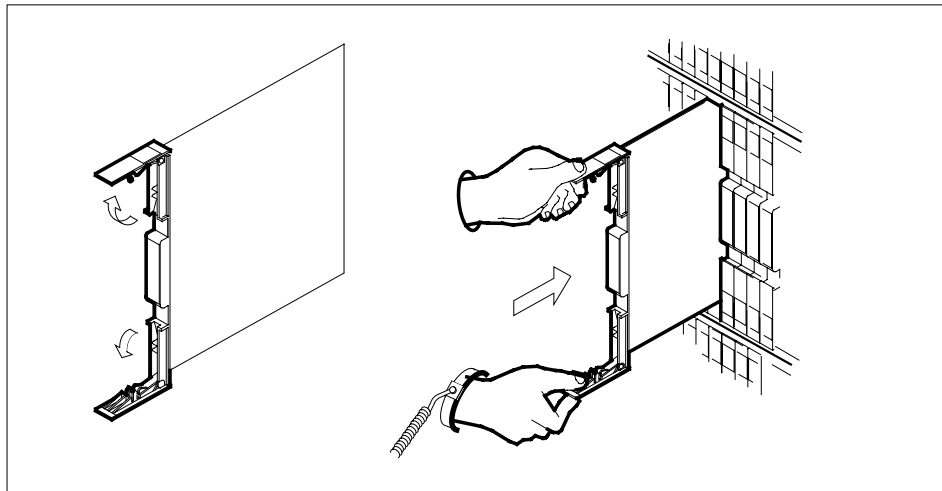


- 84** Seat and lock the NTMX97 card, as follows:
- a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
 - b** Close the locking levers.

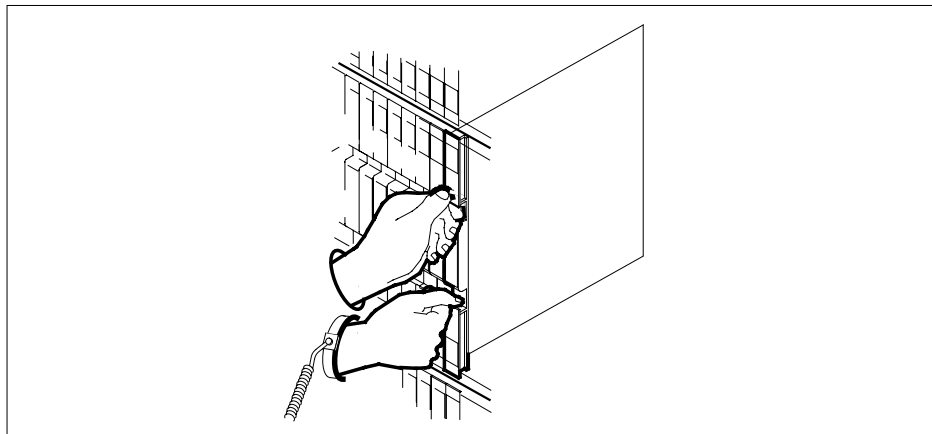
PM VPU
major (continued)



- 85** Carefully slide the NTEX22 card back into the LIS.



- 86** Seat and lock the NTEX22 card, as follows:
- a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
 - b** Close the locking levers.

PM VPU**major** (continued)**At the MAP display**

87 To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no

is the number of the offline VPU (0 to 179)

If the BSY command	Do
passed	step 88
failed	step 90

88 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 89
fails, and the system did not generate a card list	step 90
failed, and the system generated a card list	step 34
failed, the system generated a card list, and you re-placed cards in the VPU	step 90

PM VPU
major (end)

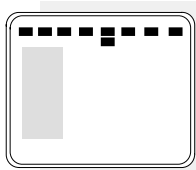
- 89** To return the VPU to service, type
>RTS
and press the Enter key.

If the RTS command	Do
passed	step 91
fails, and the system did not generate a card list	step 90
failed, and the system generated a card list	step 34
failed, and the system generated a card list, and you replaced cards in the VPU	step 90

- 90** For additional help, contact the next level of support.
- 91** The procedure is complete.

PM VPU
minor

Alarm display

	CM	MS	IOD	Net	PM 1VPU	CCS	Lns	Trks	Ext	APPL
	.	.	.	.		.	.	.	.	.

Indication

At the MTC level of the MAP display, VPU (preceded by a number) appears under the PM header of the alarm banner. The VPU indicates a minor alarm for the voice processor unit (VPU).

Meaning

One or more VPUs are in-service trouble. One of the F-bus taps for the VPU can be manual busy or system busy. The VPU can also have a loadname mismatch.

The number under the PM header of the alarm banner indicates the number of affected VPUs.

Result

The VPUs that are in-service trouble continue to function. The VPUs function at a reduced capacity.

Common procedures

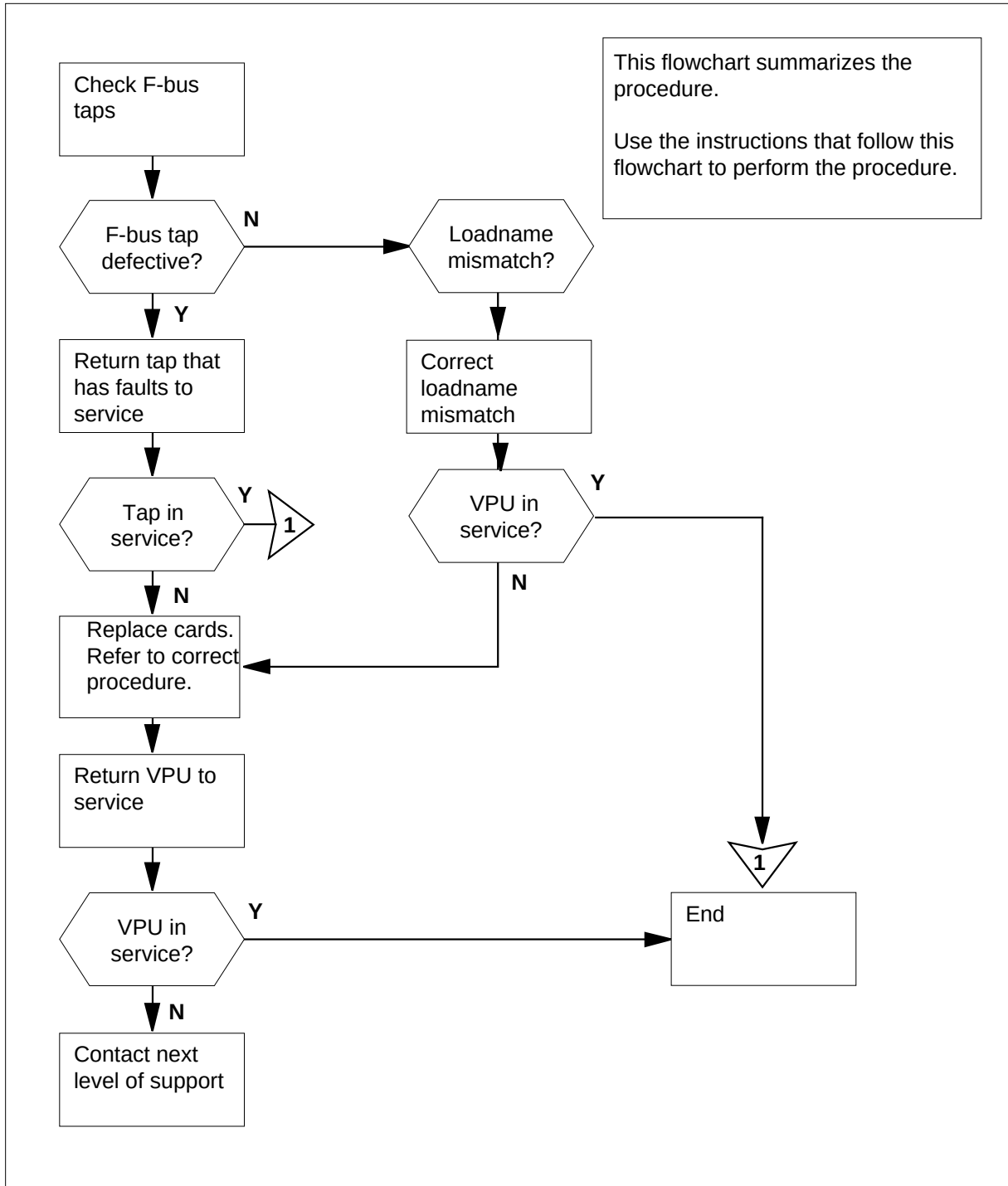
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM VPU minor (continued)

Summary of clearing a PM VPU minor alarm



PM VPU
minor (continued)

Clearing a PM VPU minor alarm

At the MAP terminal

- 1 Check the MAP alarm banner of the MAP display to confirm that all NIU alarms cleared.

If the NIU alarms	Do
cleared	step 4
did not clear	step 2

- 2 Go to the correct NIU procedure in this document to clear the alarm. Complete the procedure and return to this point.

- 3 Determine if the VPU minor alarm cleared.

If the NIU minor alarm	Do
cleared	step 119
did not clear	step 4

- 4 To access the PM level of the MAP display, type
>MAPCI;MTC;PM
and press the Enter key.

Example of a MAP display:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	0	0	0	0	2	49

- 5 Display all in-service trouble VPUs, type
>DISP STATE ISTB VPU
and press the Enter key.

- 6 Record the numbers of the in-service trouble VPUs.

- 7 To post an in-service trouble VPU, type
>POST VPU vpu_no
and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

Example of a MAP display:

VPU 1 ISTb

PM VPU minor (continued)

- 8** To display the faults that cause the in-service trouble condition, type
>QUERYPM
 and press the Enter key.
Example of a MAP display:
- ```
Location: LIM 0 Shelf:1 Slot:12 FTA:425A 1000
PM Load : Default:VPX35CV Running:VPx36BX
Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA
Reserved : Service:ADAS Options: AUDIO: PROALF
Trouble: Loadname Mismatch
```
- 9** Record the VPU number, the tap number, the state of the tap, and the link interface module (LIM) number of the posted VPU.
- 10** To determine the faults, look under the ISTB conditions header on the MAP response.

| If the condition header                                                                    | Do       |
|--------------------------------------------------------------------------------------------|----------|
| indicates one of the F-bus taps is out of service (shown as Tap # n OOS or Tap # n OOS/NA) | step 11  |
| indicates Loadname Mismatch                                                                | step 68  |
| indicates other than listed here                                                           | step 118 |

- 11** Record the number of the F-bus that contains the out-of-service VPU tap.  
**Note:** The F-bus number appears on the right side of the TAP # header.
- 12** To post the LIM for the VPU, type  
**>POST LIM lim\_no**  
 and press the Enter key.

where

**lim\_no**

is the number of the LIM (0 to 17) that you recorded in step 9

*Example of a MAP display:*

```
LIM 1 InSv
Unit0: InSv Links_00S Taps_00S 1
Unit1: InSv . .
```

- 13** To access the F-bus level of the MAP display, type  
**>FBUS**  
 and press the Enter key.

## PM VPU minor (continued)

*Example of a MAP display:*

```

FBus0: ManB --- --- --- ---B BB--
FBus1: InSv . . M . I . . S . . --- --- --- ---. .--

```

**Note:** In the previous example, a B indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual-busy tap. An I indicates an in-service trouble tap. An S indicates a system busy tap. A dash (-) indicates a tap that is not equipped.

- | <b>14</b>                                      | Determine the state of the LIM units and both F-buses (0 and 1).                                                                                                                                                                                                                                                                                                                                                |                                                |    |                                     |          |                                        |          |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|----|-------------------------------------|----------|----------------------------------------|----------|
|                                                | <table border="1"> <tr> <th data-bbox="519 714 941 787">If the state of the LIM units and both F-buses</th> <th data-bbox="950 714 1422 787">Do</th> </tr> <tr> <td data-bbox="519 798 941 850">is InSv</td> <td data-bbox="950 798 1422 850">step 17</td> </tr> <tr> <td data-bbox="519 861 941 913">is other than listed here</td> <td data-bbox="950 861 1422 913">step 15</td> </tr> </table>               | If the state of the LIM units and both F-buses | Do | is InSv                             | step 17  | is other than listed here              | step 15  |
| If the state of the LIM units and both F-buses | Do                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |    |                                     |          |                                        |          |
| is InSv                                        | step 17                                                                                                                                                                                                                                                                                                                                                                                                         |                                                |    |                                     |          |                                        |          |
| is other than listed here                      | step 15                                                                                                                                                                                                                                                                                                                                                                                                         |                                                |    |                                     |          |                                        |          |
| <b>15</b>                                      | An LIM or LIMF alarm is present. Perform the appropriate alarm clearing procedures in this document. Complete the procedure and return to this point.                                                                                                                                                                                                                                                           |                                                |    |                                     |          |                                        |          |
| <b>16</b>                                      | Determine if one VPU minor alarm cleared.                                                                                                                                                                                                                                                                                                                                                                       |                                                |    |                                     |          |                                        |          |
|                                                | <table border="1"> <tr> <th data-bbox="519 1071 941 1123">If one VPU minor alarm</th> <th data-bbox="950 1071 1422 1123">Do</th> </tr> <tr> <td data-bbox="519 1134 941 1186">cleared</td> <td data-bbox="950 1134 1422 1186">step 119</td> </tr> <tr> <td data-bbox="519 1197 941 1239">not cleared</td> <td data-bbox="950 1197 1422 1239">step 4</td> </tr> </table>                                         | If one VPU minor alarm                         | Do | cleared                             | step 119 | not cleared                            | step 4   |
| If one VPU minor alarm                         | Do                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |    |                                     |          |                                        |          |
| cleared                                        | step 119                                                                                                                                                                                                                                                                                                                                                                                                        |                                                |    |                                     |          |                                        |          |
| not cleared                                    | step 4                                                                                                                                                                                                                                                                                                                                                                                                          |                                                |    |                                     |          |                                        |          |
| <b>17</b>                                      | Determine the state of the F-bus tap for the VPU that you recorded in step 11.                                                                                                                                                                                                                                                                                                                                  |                                                |    |                                     |          |                                        |          |
|                                                | <b>Note:</b> The tap number applies to both F-buses.                                                                                                                                                                                                                                                                                                                                                            |                                                |    |                                     |          |                                        |          |
|                                                | <table border="1"> <tr> <th data-bbox="519 1344 941 1417">If the state of the F-bus tap has faults</th> <th data-bbox="950 1344 1422 1417">Do</th> </tr> <tr> <td data-bbox="519 1428 941 1480">is M</td> <td data-bbox="950 1428 1422 1480">step 18</td> </tr> <tr> <td data-bbox="519 1491 941 1543">is S</td> <td data-bbox="950 1491 1422 1543">step 19</td> </tr> </table>                                 | If the state of the F-bus tap has faults       | Do | is M                                | step 18  | is S                                   | step 19  |
| If the state of the F-bus tap has faults       | Do                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |    |                                     |          |                                        |          |
| is M                                           | step 18                                                                                                                                                                                                                                                                                                                                                                                                         |                                                |    |                                     |          |                                        |          |
| is S                                           | step 19                                                                                                                                                                                                                                                                                                                                                                                                         |                                                |    |                                     |          |                                        |          |
| <b>18</b>                                      | Determine from office records or operating company personnel why the F-bus is manually busy.                                                                                                                                                                                                                                                                                                                    |                                                |    |                                     |          |                                        |          |
|                                                | <table border="1"> <tr> <th data-bbox="519 1627 941 1680">If you</th> <th data-bbox="950 1627 1422 1680">Do</th> </tr> <tr> <td data-bbox="519 1690 941 1764">can return the F-bus tap to service</td> <td data-bbox="950 1690 1422 1764">step 20</td> </tr> <tr> <td data-bbox="519 1774 941 1854">cannot return the F-bus tap to service</td> <td data-bbox="950 1774 1422 1854">step 119</td> </tr> </table> | If you                                         | Do | can return the F-bus tap to service | step 20  | cannot return the F-bus tap to service | step 119 |
| If you                                         | Do                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |    |                                     |          |                                        |          |
| can return the F-bus tap to service            | step 20                                                                                                                                                                                                                                                                                                                                                                                                         |                                                |    |                                     |          |                                        |          |
| cannot return the F-bus tap to service         | step 119                                                                                                                                                                                                                                                                                                                                                                                                        |                                                |    |                                     |          |                                        |          |

## PM VPU minor (continued)

- 19** To force the system busy F-bus tap for the VPU to busy, type  
**>BSY FBUS fbus\_no tap\_no FORCE**  
 and press the Enter key.

*where*

**fbus\_no**  
 is the number of the F-bus (0 or 1)

**tap\_no**  
 is the number of the F-bus tap (0 to 35)

*Example of a MAP display:*

LIM 1 FBUS 0 Tap 0 Busy initiated.  
 LIM 1 FBUS 0 Tap 0 Busy passed.

- 20** To test the F-bus tap for the VPU, type  
**>TST FBUS fbus\_no tap\_no**  
 and press the Enter key.

*where*

**fbus\_no**  
 is the number of the F-bus (0 or 1)

**tap\_no**  
 is the number of the F-bus tap (0 to 35)

| If the TST command                                                                    | Do       |
|---------------------------------------------------------------------------------------|----------|
| passed                                                                                | step 46  |
| failed, and the system generated a card list                                          | step 47  |
| failed, and the system did not generate a card list                                   | step 92  |
| failed, with the response Return to Service failed - local maintenance not accessible | step 21  |
| other than listed here                                                                | step 118 |

- 21** To perform an in-service test on the LIM unit for the VPU, type  
**>TST UNIT unit\_no**  
 and press the Enter key.

*where*

## PM VPU

### minor (continued)

**unit\_no**

is the number of the LIM (0 or 1)

**Note:** In step 6, you recorded the F-bus number that contains the out-of-service VPU tap. The LIM unit 0 associates with F-bus 0. The LIM unit 1 associates with F-bus 1.

| If the TST command                                  | Do       |
|-----------------------------------------------------|----------|
| passed                                              | step 46  |
| failed, and the system generated a card list        | step 22  |
| failed, and the system did not generate a card list | step 118 |
| other than listed here                              | step 118 |

22 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

23

**CAUTION****Possible loss of service**

Make sure that the mate LIM unit is in service before you manually busy the LIM unit. The LIM unit contains the card that requires replacement. Failure to make sure that the mate LIM unit is in service can isolate nodes. The nodes are on link interface shelves (LIS) 1, 2, and 3.

Determine the state of the mate LIM unit.

**Note:** LIM unit 1 is the mate unit if the out-of-service VPU tap is on F-bus 0. LIM unit 0 is the mate if the out-of-service VPU tap is on F-bus 1.

| If the state of the mate LIM unit | Do      |
|-----------------------------------|---------|
| is InSv or ISTb                   | step 26 |
| is other than listed here         | step 24 |

24 Perform the correct alarm clearing procedure in this document to return the LIM unit to service. Complete the procedure and return to this point.

25 Go to step 16.

26 To access the F-bus level of the MAP display, type  
**>FBUS**  
and press the Enter key.

## PM VPU minor (continued)

Example of a MAP display:

```

Tap: 0 4 8 12 16 20 24 28 32
FBus0: InSv
FBus1: InSv ...M .I.. .S..

```

**Note:** In the previous example, a B indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual busy tap. An I indicates an in-service trouble tap. An S indicates a system busy tap. A dash (-) indicates a tap that is not equipped.

27



### CAUTION

#### Possible loss of service

Make sure that the mate F-bus is in service before you manually busy the LIM unit. Make sure that the taps for equipped and online nodes are in service before you manually busy the LIM unit. The LIM unit contains the card that requires replacement. Failure to make sure that the F-bus and taps are in service can isolate nodes. The nodes are on LIS 1, 2, and 3.

Determine the state of the mate F-bus.

**Note:** F-bus 1 is the mate if the out-of-service VPU tap is on F-bus 0. F-bus 0 is the mate if the out-of-service VPU tap is on F-bus 1. The F-bus state appears on the right of the words FBus0 or FBus1 in the example MAP display in step 26.

| If the state of the mate F-bus | Do      |
|--------------------------------|---------|
| is InSv or ISTb                | step 30 |
| is other than listed here      | step 28 |

**28** Perform the correct alarm clearing procedure in this document to return the mate F-bus to service. Complete the procedure and return to this point.

**29** Go to step 16.

**30** Determine the state of the taps on the mate F-bus.

**Note:** The tap states appear in the two rows of characters under the numbers 0 to 35 (or 0 to 23). The example MAPdisplay in step 26 shows the location of the tap states. If the out-of-service VPU tap is on F-bus 0,

## PM VPU minor (continued)

examine the taps on F-bus 1. If the out-of-service VPU tap is on F-bus 1, examine the taps on F-bus 0.

|    | If the taps on the mate F-bus                                                                                                                 | Do      |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------|---------|
|    | are in service (.) or<br>in-service trouble (I)                                                                                               | step 33 |
|    | are manual busy (M) or<br>system busy (S)                                                                                                     | step 31 |
| 31 | Perform the correct alarm clearing procedure in this document to return the taps to service. Complete the procedure and return to this point. |         |
| 32 | Go to step 16.                                                                                                                                |         |
| 33 |                                                                                                                                               |         |



### CAUTION

#### Loss of service

Make sure that you manually busy the F-bus for the LIM unit. The LIM unit contains the card that requires replacement. Failure to manually busy the F-bus results in a loss of CCS7 messaging for all application-specific units (ASU). The ASUs are in the link peripheral processor (LPP) that carry traffic.

Manually busy the F-bus for the LIM unit. The LIM unit contains the card that requires replacement. To manually busy the F-bus, type

**>BSY FBUS fbus\_no**

and press the Enter key.

where

**fbus\_no**

is the number of the F-bus (0 or 1)

**Note:** The F-bus 0 associates with LIM unit 0. The F-bus 1 associates with LIM unit 1.

| If the response                                          | Do      |
|----------------------------------------------------------|---------|
| is LIM x FBus y Busy initiated.                          | step 35 |
| is LIM x FBus y Busy requires confirmation because is is | step 34 |

## PM VPU minor (continued)

- 34 To confirm the command, type

**>YES**

and press the Enter key.

*Example of a MAP display:*

```

 Tap: 0 4 8 12 16 20 24 28 32
FBus0: ManB BBBB BBBB BBBB BBBB ---- ---- ---- ---B BB--
FBus1: InSv ---- ---- ---- ---. .--

```

LIM 1 FBus 0 Busy initiated.

LIM 1 FBus 0 Busy passed.

**Note:** In the example, you manually busied F-bus 0.

- 35 To manually busy the LIM unit that contains the card that has faults, type

**>BSY UNIT unit\_no**

and press the Enter key.

*where*

**unit\_no**

is the number of the LIM (0 or 1)

- 36 To reset the LIM unit, type

**>PMRESET UNIT unit\_no**

and press the Enter key.

*where*

**unit\_no**

is the number of the LIM (0 or 1)

| If the PMRESET command | Do      |
|------------------------|---------|
| passed                 | step 43 |
| failed                 | step 37 |

- 37 To load the LIM unit, type

**>LOADPM UNIT unit\_no**

and press the Enter key.

*where*

**unit\_no**

is the number of the LIM (0 or 1)

| If the LOADPM command | Do      |
|-----------------------|---------|
| passed                | step 43 |

## PM VPU minor (continued)

|                           | If the LOADPM command                                                                                                                                            | Do       |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|                           | failed, and the system generated a card list                                                                                                                     | step 38  |
|                           | failed, and the system did not generate a card list                                                                                                              | step 118 |
| 38                        | Change the first card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.        |          |
| <b>At the MAP display</b> |                                                                                                                                                                  |          |
| 39                        | To manually busy the offline VPU, type<br><b>&gt;BSY VPU vpu_no</b><br>and press the Enter key.<br>where<br><b>vpu_no</b><br>is the number of the VPU (0 to 179) |          |
| 40                        | To load the LIM unit, type<br><b>&gt;LOADPM UNIT unit_no</b><br>and press the Enter key.<br>where<br><b>unit_no</b><br>is the number of the LIM (0 or 1)         |          |
|                           | If the LOADPM command                                                                                                                                            | Do       |
|                           | passed                                                                                                                                                           | step 43  |
|                           | failed and you did not replace all cards on the list that you recorded in step 22                                                                                | step 41  |
|                           | failed and you replaced all cards on the list that you recorded in step 22                                                                                       | step 118 |
| 41                        | Replace the next card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.        |          |
| 42                        | Go to step 39.                                                                                                                                                   |          |
| 43                        | To return the LIM unit for the VPU to service, type<br><b>&gt;RTS UNIT unit_no</b><br>and press the Enter key.                                                   |          |



---

**PM VPU**  
**minor (continued)**


---

where

**unit\_no**  
is the number of the LIM (0 or 1)

| If the RTS command | Do       |
|--------------------|----------|
| passed             | step 44  |
| failed             | step 118 |

**44** To access the F-bus level of the MAP display, type

**>FBUS**

and press the Enter key.

**45** To return the F-bus to service, type

**>RTS FBUS fbus\_no**

and press the Enter key.

where

**fbus\_no**  
is the number of the F-bus (0 or 1)

**Note:** The F-bus 0 associates with LIM unit 0. The F-bus 1 associates with LIM unit 1.

| If the RTS command | Do       |
|--------------------|----------|
| passed             | step 46  |
| failed             | step 118 |

**46** To return the F-bus tap for the VPU to service, type

**>RTS FBUS fbus\_no tap\_no**

and press the Enter key.

where

**fbus\_no**  
is the number of the F-bus (0 or 1)

**tap\_no**  
is the number of the F-bus tap (0 to 35)

| If the RTS command                           | Do       |
|----------------------------------------------|----------|
| passed                                       | step 117 |
| failed, and the system generated a card list | step 47  |

---

**PM VPU****minor** (continued)

|           | <b>If the RTS command</b>                                                                                                                                                              | <b>Do</b> |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|           | failed, and the system did not generate a card list                                                                                                                                    | step 92   |
| <b>47</b> | Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.                                                                                           |           |
| <b>48</b> | To quit from the F-bus level of the MAP display, type<br><b>&gt;QUIT</b><br>and press the Enter key.                                                                                   |           |
| <b>49</b> | To post the VPU that you recorded in step 3, type<br><b>&gt;POST VPU vpu_no</b><br>and press the Enter key.<br><i>where</i><br><b>vpu_no</b><br>is the number of the VPU (0 to 179)    |           |
| <b>50</b> | To manually busy the VPU, type<br><b>&gt;BSY</b><br>and press the Enter key.                                                                                                           |           |
|           | <b>If the BSY command</b>                                                                                                                                                              | <b>Do</b> |
|           | passed                                                                                                                                                                                 | step 53   |
|           | failed                                                                                                                                                                                 | step 52   |
|           | prompts for a confirmation                                                                                                                                                             | step 51   |
| <b>51</b> | To confirm the command, type<br><b>&gt;YES</b><br>and press the Enter key.<br>Go to step 53.                                                                                           |           |
| <b>52</b> | To force the VPU to busy, type<br><b>&gt;BSYFORCE</b><br>and press the Enter key.                                                                                                      |           |
| <b>53</b> | Change the first card on the list that you recorded in step 45. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point. |           |

## PM VPU minor (continued)

### *At the MAP display*

- 54** To manually busy the offline VPU, type

**>BSY VPU vpu\_no**

and press the Enter key.

where

**vpu\_no**

is the number of the VPU (0 to 179)

- 55** To reset the VPU, type

**>PMRESET**

and press the Enter key.

| If the PMRESET command | Do      |
|------------------------|---------|
| passed                 | step 57 |
| failed                 | step 56 |

- 56** To load the VPU unit, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command                     | Do      |
|-------------------------------------------|---------|
| passed                                    | step 57 |
| failed, and you did not replace all cards | step 62 |
| failed, and you replaced all cards        | step 98 |

- 57** To post the LIM for the VPU, type

**>POST LIM lim\_no**

and press the Enter key.

where

**lim\_no**

is the number of the LIM (0 to 17)

- 58** To access the F-bus level of the MAP display, type

**>FBUS**

and press the Enter key.

- 59** To return the F-bus tap for the VPU to service, type

**>RTS FBUS fbus\_no tap\_no**

and press the Enter key.

**PM VPU**  
**minor** (continued)

---

where

**fbus\_no**  
is the number of the F-bus (0 or 1)

**tap\_no**  
is the number of the F-bus tap (0 to 35)

|           | <b>If the RTS command</b>                                                                                                                                        | <b>Do</b> |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|           | passed                                                                                                                                                           | step 65   |
|           | failed, and you did not replace all cards on the list                                                                                                            | step 60   |
|           | failed, and you replaced all cards on the list                                                                                                                   | step 92   |
| <b>60</b> | To quit from the F-bus level of the MAP display, type<br><b>&gt;QUIT</b><br>and press the Enter key.                                                             |           |
| <b>61</b> | To post the VPU, type<br><b>&gt;POST VPU vpu_no</b><br>and press the Enter key.<br>where<br><b>vpu_no</b><br>is the number of the VPU (0 to 179)                 |           |
| <b>62</b> | Replace the next card on the list. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.        |           |
| <b>63</b> | To manually busy the offline VPU, type<br><b>&gt;BSY VPU vpu_no</b><br>and press the Enter key.<br>where<br><b>vpu_no</b><br>is the number of the VPU (0 to 179) |           |
| <b>64</b> | Go to step 54.                                                                                                                                                   |           |
| <b>65</b> | To quit from the F-bus level of the MAP display, type<br><b>&gt;QUIT</b><br>and press the Enter key.                                                             |           |
| <b>66</b> | To post the VPU for the F-bus tap, type<br><b>&gt;POST VPU vpu_no</b><br>and press the Enter key.<br>where                                                       |           |

## PM VPU minor (continued)

**vpu\_no**  
is the number of the VPU (0 to 179)

- 67 To return the VPU to service, type  
**>RTS**  
and press the Enter key.

| If the RTS command | Do       |
|--------------------|----------|
| passed             | step 119 |
| failed             | step 98  |

- 68 Record the names of the default load and the running load.  
*Example of a MAP response:*

Default Load: ULX36BX  
Running Load: ULX36BX

69



### CAUTION

#### Possible service-affecting action

Contact your next level of support before you continue.  
Make sure that you can change the default load or the running load.

The default load and the running load are mismatched. To correct this fault, you must change the default load or the running load.

| If you are advised to   | Do       |
|-------------------------|----------|
| change the default load | step 70  |
| change the running load | step 80  |
| not take action         | step 119 |

- 70 To access table PMLOADS, type  
**>TABLE PMLOADS**  
and press the Enter key.
- 71 To position on the default load in table PMLOADS, type  
**>POSITION load\_name**  
and press the Enter key.  
*where*

**PM VPU****minor** (continued)

- load\_name**  
is the name of the default load
- 72 Determine if the default load is in table PMLOADS.
- | If the default load | Do       |
|---------------------|----------|
| is in the table     | step 73  |
| is not in the table | step 118 |
- 73 To quit from the table, type  
**>QUIT**  
and press the Enter key.
- 74 To access table LIUINV, type  
**>TABLE LIUINV**  
and press the Enter key.  
*Example of a MAP response:*  
  
TABLE : LIUINV
- 75 To position on the key value of the tuple you want to change, type  
**>POSITION VPU vpu\_no**  
and press the Enter key.  
*where*  
**vpu\_no**  
is the number of the VPU (0 to 179)
- 76 To indicate the field in the tuple you want to change, type  
**>CHANGELOAD**  
and press the Enter key.
- 77 To enter the new value of the field you want to change, type  
**>new\_load\_name**  
and press the Enter key.  
*where*  
**new\_load\_name**  
is the name of the running load that you recorded in  
  
step 68
- 78 Make sure that the indicated changes are correct. To confirm the new value of the changed field, type  
**>Y**  
and press the Enter key.

## PM VPU minor (continued)

*Example of a MAP response:*

TABLE : CHANGED

- 79** To quit from the table, type  
**>QUIT**  
and press the Enter key.  
Go to step 117.
- 80** To manually busy the VPU, type  
**>BSY**  
and press the Enter key.
- | If the BSY command         | Do      |
|----------------------------|---------|
| passed                     | step 83 |
| failed                     | step 82 |
| prompts for a confirmation | step 81 |
- 81** To confirm the command, type  
**>YES**  
and press the Enter key.  
Go to step 83.
- 82** To force the VPU to busy, type  
**>BSYFORCE**  
and press the Enter key.
- 83** To load the VPU unit, type  
**>LOADPM**  
and press the Enter key.

| If the LOADPM command                               | Do      |
|-----------------------------------------------------|---------|
| passed                                              | step 91 |
| failed, and the system generated a card list        | step 84 |
| failed, and the system did not generate a card list | step 98 |

- 84** Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.

**PM VPU**  
**minor** (continued)

---

- 85** Change the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

**At the MAP**

- 86** To manually busy the offline VPU, type

**>BSY VPU vpu\_no**

and press the Enter key.

where

**vpu\_no**

is the number of the VPU (0 to 179)

- 87** To reset the VPU, type

**>PMRESET**

and press the Enter key.

---

| <b>If the PMRESET command</b> | <b>Do</b> |
|-------------------------------|-----------|
|-------------------------------|-----------|

---

|        |         |
|--------|---------|
| passed | step 91 |
|--------|---------|

|        |         |
|--------|---------|
| failed | step 88 |
|--------|---------|

- 
- 88** To load the VPU, type

**>LOADPM**

and press the Enter key.

---

| <b>If the LOADPM command</b> | <b>Do</b> |
|------------------------------|-----------|
|------------------------------|-----------|

---

|        |         |
|--------|---------|
| passed | step 91 |
|--------|---------|

|                                                                                            |         |
|--------------------------------------------------------------------------------------------|---------|
| failed, and you did not replace<br>all cards on the list that you re-<br>corded at step 84 | step 89 |
|--------------------------------------------------------------------------------------------|---------|

|                                                                                   |         |
|-----------------------------------------------------------------------------------|---------|
| failed, and you replaced all cards<br>on the list that you recorded at<br>step 84 | step 98 |
|-----------------------------------------------------------------------------------|---------|

- 
- 89** Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 90** Go to step 86.

- 91** To return the VPU to service, type

**>RTS**



## PM VPU minor (continued)

and press the Enter key.

|           | <b>If the RTS command</b>                                                                                                                               | <b>Do</b> |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|           | passed                                                                                                                                                  | step 117  |
|           | failed                                                                                                                                                  | step 98   |
| <b>92</b> | To quit from the F-bus level of the MAP display, type<br><b>&gt;QUIT</b><br>and press the Enter key.                                                    |           |
| <b>93</b> | To post the VPU, type<br><b>&gt;POST VPU vpu_no</b><br>and press the Enter key.<br><i>where</i><br><b>vpu_no</b><br>is the number of the VPU (0 to 179) |           |
| <b>94</b> | Determine the state of the VPU.                                                                                                                         |           |
|           | <b>If the state of the VPU</b>                                                                                                                          | <b>Do</b> |
|           | is ManB                                                                                                                                                 | step 98   |
|           | is not ManB                                                                                                                                             | step 95   |
| <b>95</b> | To manually busy the VPU, type<br><b>&gt;BSY</b><br>and press the Enter key.                                                                            |           |
|           | <b>If the BSY command</b>                                                                                                                               | <b>Do</b> |
|           | passed                                                                                                                                                  | step 98   |
|           | failed                                                                                                                                                  | step 97   |
|           | prompts for a confirmation                                                                                                                              | step 96   |
| <b>96</b> | To confirm the command, type<br><b>&gt;YES</b><br>and press the Enter key.<br>Go to step 98.                                                            |           |
| <b>97</b> | To force the VPU to busy, type<br><b>&gt;BSYFORCE</b><br>and press the Enter key.                                                                       |           |

## PM VPU minor (continued)

---

- 98 To offline the VPU, type

**>OFFL**

and press the Enter key.

- 99 To determine the location of the VPU, type

**>QUERY**

and press the Enter key.

**Note:** The QUERYPM command provides the LIM number, shelf number, and slot number of the far-left front card of the VPU.

*Example of a MAP response:*

```
PM type:VPU PM No.:110 Status: OffL
LIM: 1 Shelf:2 Slot: 12 VPU FTA:4250
1000
Default Load: ULX36BX
Running Load: ULX36BX
Msg Channel #0 NA
TAP #0 OOS/NA
LMS States: InSv InSv
Auditing : No Yes
Msg Channels: NA Acc
TAP 2 : M .
```

**At the LPP**

100



### **WARNING**

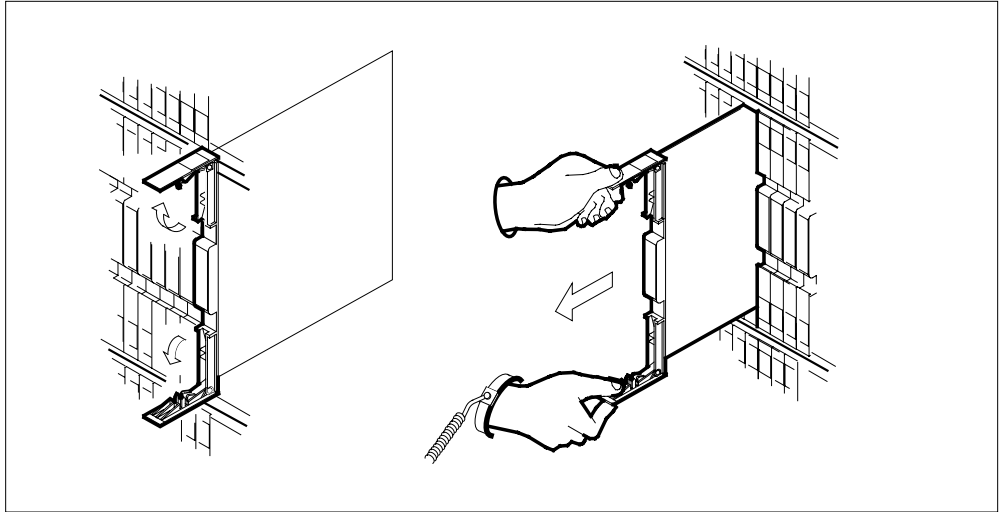
#### **Static electricity damage**

Wear a wrist strap that connects to the wrist-strap grounding point on the frame supervisory panel (FSP) to handle cards. The wrist strap protects the cards against static electricity damage.

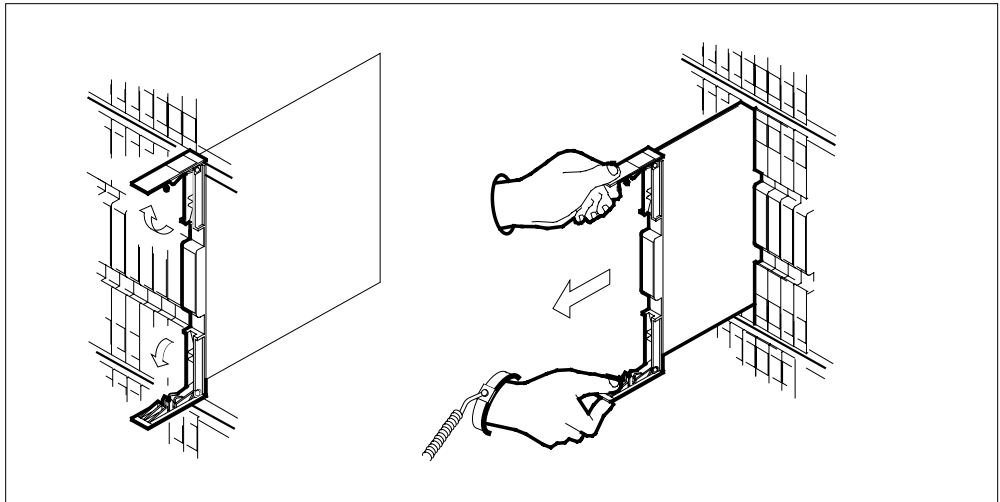
Locate the NT9X14 card for the VPU.

- 101 Open the locking levers on the card. Carefully pull the NT9X14 card toward you until you unseat the card from the connector.

**PM VPU**  
**minor** (continued)



- 102** Leave the NT9X14 card in the slot on the link interface shelf (LIS).
- 103** Locate the NTEX22 card for the VPU.
- 104** Open the locking levers on the card. Carefully pull the NTEX22 card toward you until you unseat the card from the connector.

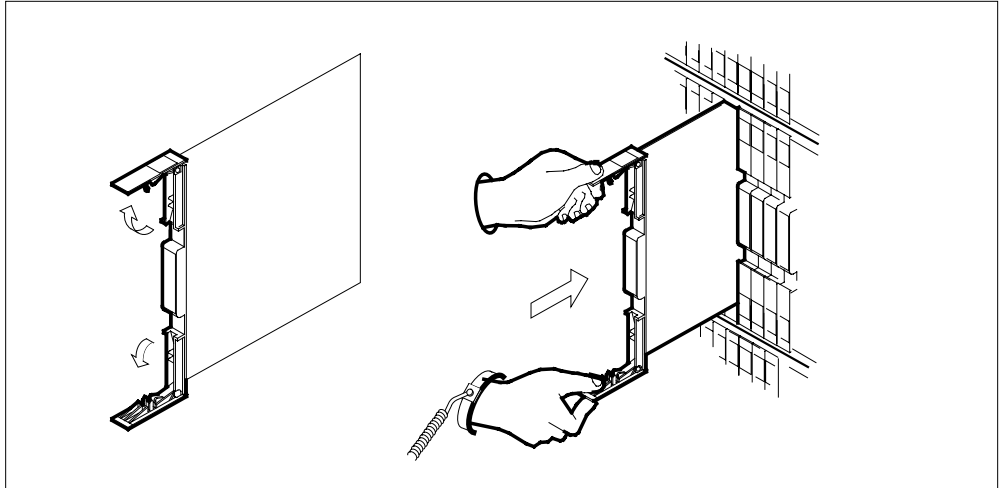


- 105** Carefully slide the NTEX22 card back into the LIS.

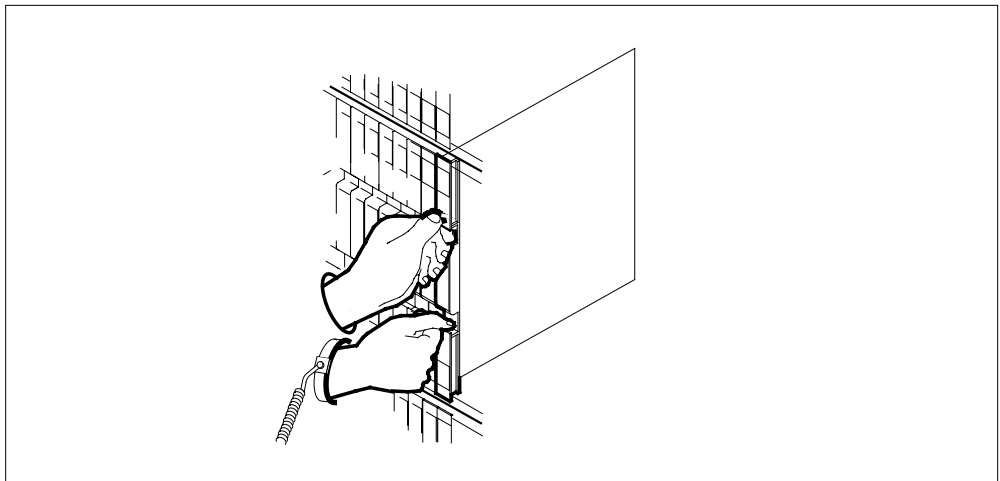
## PM VPU

### minor (continued)

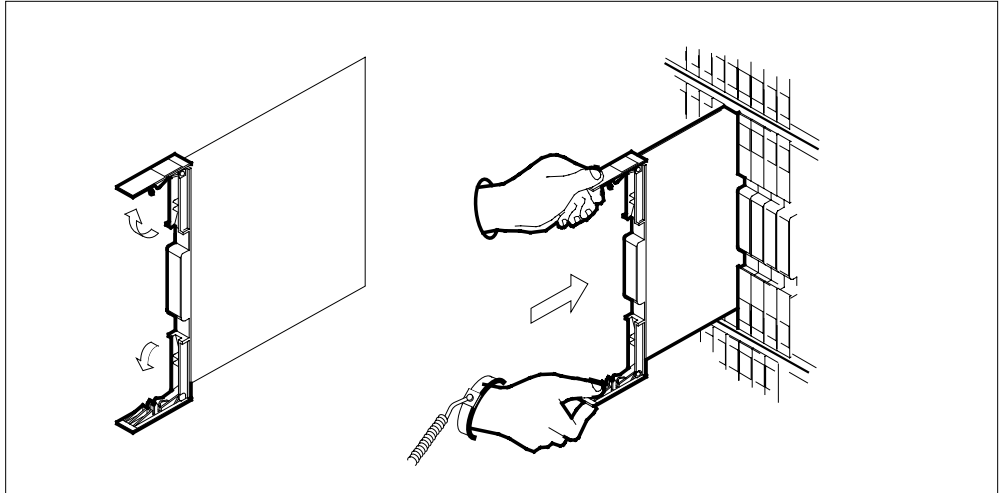
---



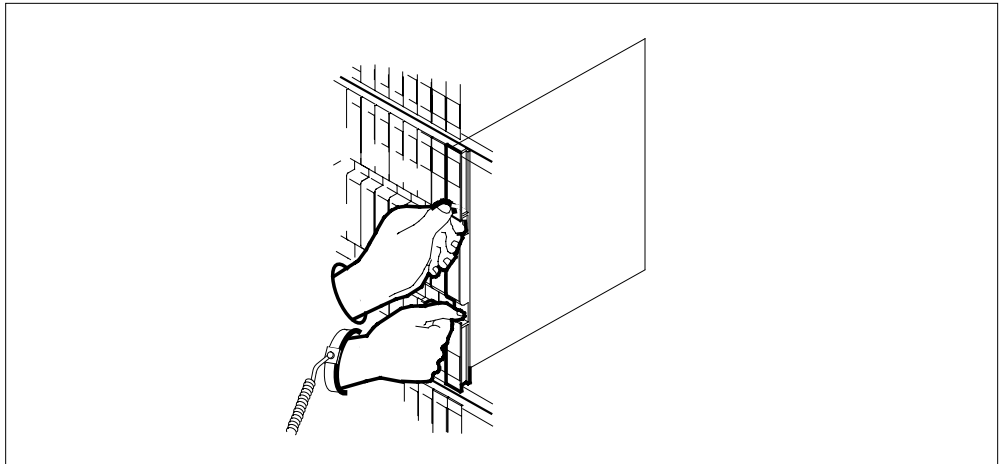
- 106** Seat and lock the NTEX22 card as follows:
- a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
  - b** Close the locking levers.



- 107** Carefully slide the NT9X14 card back into the LIS.

**PM VPU**  
**minor** (continued)

- 108** Seat and lock the NT9X14 card as follows:
- Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
  - Close the locking levers.



- 109** To manually busy the VPU, type  
**>BSY**  
and press the Enter key.

| If the BSY command | Do       |
|--------------------|----------|
| passed             | step 110 |

## PM VPU

### minor (continued)

|            | If the BSY command                                                                                             | Do       |
|------------|----------------------------------------------------------------------------------------------------------------|----------|
|            | failed                                                                                                         | step 118 |
| <b>110</b> | To load the VPU, type<br>>LOADPM<br>and press the Enter key.                                                   |          |
|            | If the LOADPM command                                                                                          | Do       |
|            | passed                                                                                                         | step 112 |
|            | fails, the system generates a card list, and you did not replace any cards in the VPU                          | step 111 |
|            | failed, the system generated a card list, and you replaced cards in the VPU                                    | step 118 |
|            | fails, and the system did not generate a card list                                                             | step 118 |
| <b>111</b> | Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.<br>Go to step 38. |          |
| <b>112</b> | To return the VPU to service, type<br>>RTS<br>and press the Enter key.                                         |          |
|            | If the RTS command                                                                                             | Do       |
|            | passed                                                                                                         | step 113 |
|            | fails, the system generates a card list, and you did not replace any cards in the VPU                          | step 111 |
|            | failed, the system generated a card list, and you replaced cards in the VPU                                    | step 118 |
|            | fails, and the system did not generate a card list                                                             | step 118 |

---

**PM VPU  
minor (end)**


---

- 113** To post the LIM for the VPU, type

**>POST LIM lim\_no**

and press the Enter key.

where

**lim\_no**

is the number of the LIM in use (0 to 17)

- 114** To access the F-bus level of the MAP display, type

**>FBUS**

and press the Enter key.

- 115** Determine if one of the VPU taps is manual busy.

---

**If a VPU tap**

**Do**

is manual busy

step 116

is not manual busy

step 117

---

- 116** To return the tap for the VPU to service, type

**>RTS FBUS fbus\_no tap\_no**

and press the Enter key.

where

**fbus\_no**

is the number of the F-bus (0 or 1)

**tap\_no**

is the number of the F-bus tap (0 to 35)

---

**If the RTS command**

**Do**

passed

step 117

failed

step 118

---

- 117** Determine if one VPU minor alarm cleared.

---

**If one VPU minor alarm**

**Do**

cleared

step 119

did not clear

step 118

---

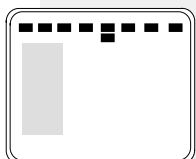
- 118** For additional help, contact the next level of support.

- 119** The procedure is complete.

## PM XLIU critical

---

### Alarm display

|                                                                                   |    |    |     |     |                                         |     |     |      |     |      |
|-----------------------------------------------------------------------------------|----|----|-----|-----|-----------------------------------------|-----|-----|------|-----|------|
|  | CM | MS | IOD | Net | <b>PM</b><br><b>1XLIU</b><br><b>*C*</b> | CCS | Lns | Trks | Ext | APPL |
|                                                                                   | .  | .  | .   | .   |                                         | .   | .   | .    | .   | .    |

### Indication

At the MTC level of the MAP display, XLIU (preceded by a number) appears under the PM header of the alarm banner. The XLIU indicates a critical alarm for an X.25/X.75 link interface unit (XLIU).

### Meaning

One or more XLIUs are system busy or system busy not accessible for one of the following reasons:

- link de-allocation
- XLIU error interrupts
- XLIU does not respond to computing module (CM)
- in-service test failure
- network interface unit (NIU) resources not available

The number under the PM header in the alarm banner indicates the number of affected XLIUs.

### Result

The indicated number of XLIUs are out of service. The X.25/X.75 links for the XLIUs cannot carry traffic.

### Common procedures

This procedure refers to *Moving an XSG to a spare XLIU*.

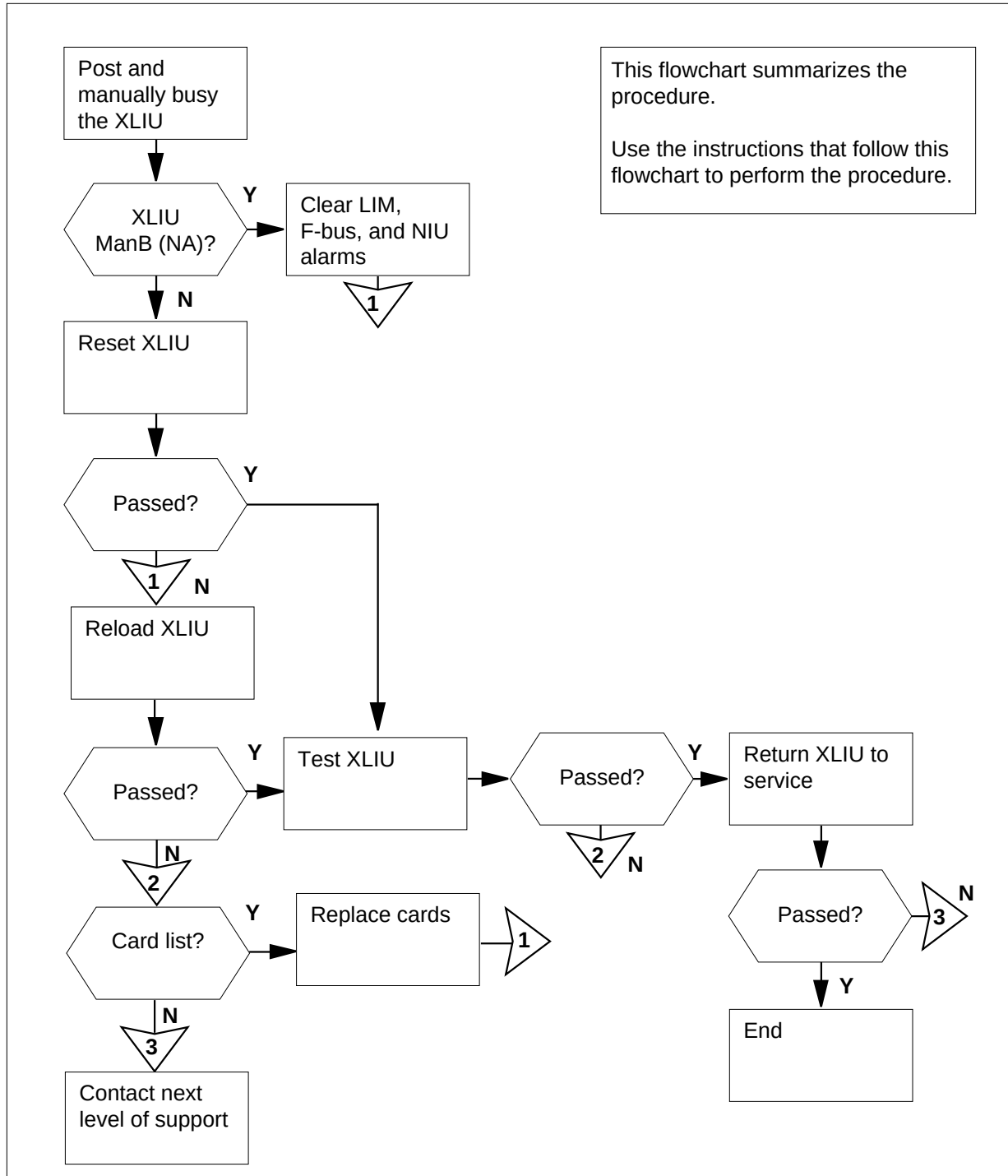
### Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.



## PM XLIU critical (continued)

### Summary of clearing a PM XLIU critical alarm



PM XLIU  
critical (continued)

Clearing a PM XLIU critical alarm

At the MAP terminal

- 1 Determine if all MS alarms cleared.
- | If all MS alarms | Do     |
|------------------|--------|
| cleared          | step 2 |
| did not clear    | step 3 |
- 2 Perform the correct MS alarm clearing procedure in this document. Complete the procedure and return to this point.
- 3 To access the PM level of the MAP display, type  
**>MAPCI;MTC;PM**  
and press the Enter key.  
*Example of a MAP display:*
- |    |      |      |      |      |      |
|----|------|------|------|------|------|
|    | SysB | ManB | OffL | CBsy | ISTb |
| PM | 39   | 0    | 3    | 30   | 16   |
- 4 To display the system busy XLIUs, type  
**>DISP STATE SYSB XLIU**  
and press the Enter key  
*Example of a MAP display:*
- SysB XLIU: 121, 312
- 5 Record the numbers of the system busy XLIUs.
- 6 Choose a system busy XLIU to work on from the list that you recorded in step 5.
- 7 To post the system busy XLIU, type  
**>POST XLIU xliu\_no**  
and press the Enter key.  
*where*  
**xliu\_no**  
is the number of the selected XLIU (0 to 511)  
*Example of a MAP display:*
- |      |     |      |      |
|------|-----|------|------|
| XLIU | 121 | SysB | Spre |
|------|-----|------|------|
- 8 To determine if the XLIU is in a link peripheral processor (LPP), type  
**>QUERYPM**

## PM XLIU critical (continued)

and press the Enter key.

**Note:** The code LIM appears on the far left on the response on the third line. If the code LIM appears in this location, the XLIU is in an LPP.

*Example of a MAP display:*

```
PM type: XLIU PM No.: 121 Status: SysB
Node Number 81 XSG 1
LIM: 0 Shelf: 2 Slot: 12 XLIU FTA: 424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
 Loadname Mismatch
 CBUS PORT for NIU Unit 0 is not inservice
 CBUS PORT for NIU Unit 1 is not inservice
 Unit 0 Unit 1
LMS States : InSv InSv
Auditing : No No
Msg Channels : Acc Acc
TAP 9 : . .
NIU 1 : InSv InSv
```

| If XLIU                                                                                                                                                                                                                              |  | Do      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------|
| is in an LPP                                                                                                                                                                                                                         |  | step 10 |
| is other than listed here                                                                                                                                                                                                            |  | step 9  |
| <b>9</b> Determine if other system busy XLIUs are present that you did not work on.                                                                                                                                                  |  |         |
| If other system busy XLIUs                                                                                                                                                                                                           |  | Do      |
| are present that you did not work on                                                                                                                                                                                                 |  | step 6  |
| are not present                                                                                                                                                                                                                      |  | step 49 |
| <b>10</b> Determine if the XLIU is a spare.                                                                                                                                                                                          |  |         |
| <b>Note:</b> The code Spre on the right of the service condition identifies a spare XLIU. The spare XLIU appears in the display in step 7. The code Rsvd on the right of the service condition identifies XLIUs that are not spares. |  |         |
| If the XLIU                                                                                                                                                                                                                          |  | Do      |
| is a spare                                                                                                                                                                                                                           |  | step 12 |
| is not a spare                                                                                                                                                                                                                       |  | step 11 |

## PM XLIU critical (continued)

- 11** Perform the procedure *How to move an XSG to a spare XLIU* in this document. Complete the procedure and return to this point.

**Note:** The spare XLIU must be in service.

- 12** To post the XLIU, type  
**>POST XLIU xliu\_no**  
 and press the Enter key.  
*where*

**xliu\_no**  
 is the number of the selected XLIU (0 to 511)

*Example of a MAP response:*

XLIU 121 SysB Spre

| If the XLIU               | Do      |
|---------------------------|---------|
| is ManB                   | step 31 |
| is ManB (NA)              | step 15 |
| is other than listed here | step 13 |

- 13** To manually busy the XLIU, type  
**>BSY FORCE**  
 and press the Enter key.

*Example of a MAP response:*

Busying XLIU 121 will take XSG channels out of service.  
 Please confirm ("YES", "Y", "NO", or "N"):

- 14** To confirm the command, type  
**>YES**  
 and press the Enter key.

| If XLIU      | Do      |
|--------------|---------|
| is ManB      | step 31 |
| is ManB (NA) | step15  |

- 15** To query the XLIU to determine if any related C-side faults occur, type  
**>QUERYPM**  
 and press the Enter key.

*Example of a MAP response:*

## PM XLIU critical (continued)

```

PM type: XLIU PM No.: 121 Status: ManB(NA)
Node Number 81 XSG 1
LIM: 0 Shelf: 2 Slot: 12 XLIU FTA: 424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
 Loadname Mismatch
 Msg Channel #0 NA
 Msg Channel #1 NA
 TAP #0 00S/NA
 TAP #1 00S/NA
 CBUS PORT for NIU Unit 0 is not inservice
 CBUS PORT for NIU Unit 1 is not inservice

```

|               | Unit 0 | Unit 1 |
|---------------|--------|--------|
| LMS States :  | InSv   | InSv   |
| Auditing :    | No     | No     |
| Msg Channels: | NA     | NA     |
| TAP 9 :       | M(NA)  | M(NA)  |
| NIU 1 :       | InSv   | InSv   |

- 16** Record the number of the LIM and the number of the F-bus tap.

**Note:** The number of the LIM appears on the right of the LIM header on the MAP response obtained in step 15. The number of the F-bus tap appears on the right of the TAP header.

- 17** To post the LIM for the XLIU, type

**>POST LIM lim\_no**

and press the Enter key.

where

**lim\_no**

is the number of the selected XLIU (0 to 511)

*Example of a MAP response:*

```

LIM 0 ISTb
 Links_00S Taps_00S
Unit0: ISTb . 12
Unit1: ISTb . 12

```

- 18** To access the F-bus level of the MAP display, type

**>FBUS**

and press the Enter key.

*Example of a MAP response:*

## PM XLIU

### critical (continued)

```

LIM 0 ISTb
 Links_00S Taps_00S
Unit0: ISTb . 12
Unit1: ISTb . 12

 Tap: 0 4 8 12 16 20 24 28 32
FBus0: ManB BBBB BBBB BBBB BBBB,---- ---- ---- ---- ----
FBus1: ManB BBBB BBBB BBBB BBBB,---- ---- ---- ---- ----

```

**Note:** In the previous example, B under a tap number indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual busy tap. An L indicates an in-service trouble tap. An S indicates a system busy tap. A dash (-) indicates a tap that is not equipped.

- 19** Determine the state of the LIM and both F-buses.

| If the state of the LIM and both F-buses | Do |
|------------------------------------------|----|
|------------------------------------------|----|

|                  |         |
|------------------|---------|
| is InSv and ISTb | step 23 |
|------------------|---------|

|                           |         |
|---------------------------|---------|
| is other than listed here | step 20 |
|---------------------------|---------|

- 20** Record the state of the LIM and F-buses that have faults.

- 21** A problem with the LIM produces a PM LIM alarm. A problem with the F-bus produces a PM LIMF alarm. Perform the correct alarm clearing procedures in this document. Complete the procedures and return to this point.

- 22** Go to step 32.

- 23** Determine the state of the F-bus taps.

**Note:** The tap state appears on the right of the TAP header in the MAP response that you obtained in step 15. The tap number applies to both F-buses.

| If the state of | Do |
|-----------------|----|
|-----------------|----|

|                             |         |
|-----------------------------|---------|
| one or both F-bus taps is M | step 26 |
|-----------------------------|---------|

|                                                 |         |
|-------------------------------------------------|---------|
| one F-bus tap is M and the other F-bus tap is S | step 26 |
|-------------------------------------------------|---------|

|                             |         |
|-----------------------------|---------|
| one or both F-bus taps is S | step 24 |
|-----------------------------|---------|

|                                 |         |
|---------------------------------|---------|
| both F-bus taps is I or dot (.) | step 45 |
|---------------------------------|---------|

- 24** Select a system busy tap on which to work.

- 25** To manually busy the system busy F-bus tap, type

```
>BSY FBUS fbus_no tap_no FORCE
```

---

**PM XLIU**  
**critical** (continued)

---

and press the Enter key.

where

**fbus\_no**

is the number of the selected F-bus (0 or 1)

**tap\_no**

is the number of the selected F-bus tap (0 to 35)

**26** Select a manually-busy tap on which to work.

**27** Determine from office records or operating company personnel why the tap is busy.

When you have permission, continue with this procedure.

**28** To return the F-bus tap to service, type

**>RTS FBUS fbus\_no tap\_no**

and press the Enter key.

where

**fbus\_no**

is the number of the selected F-bus (0 or 1)

**tap\_no**

is the number of the selected F-bus tap (0 to 35)

---

| <b>If the RTS command</b>                                          | <b>Do</b> |
|--------------------------------------------------------------------|-----------|
| passed                                                             | step 29   |
| failed, and the system generated a card list                       | step 34   |
| failed, and the system did not generate a card list                | step 34   |
| failed, with the response local maintenance not accessible         | step 34   |
| failed for any other reason, and you did not work on the other tap | step 29   |
| failed for any other reason, and you worked on the other tap       | step 49   |

---

**PM XLIU**  
**critical** (continued)

---

- 29** Determine the state of the other tap.

**Note:** The tap state appears on the right of the TAP header in the MAP response that you obtained in step 15. The tap number applies to both F-buses.

---

| If the state of the other tap                        | Do      |
|------------------------------------------------------|---------|
| is dot (.) (in service) or<br>I (in-service trouble) | step 30 |
| is M (manual busy)                                   | step 27 |
| is S (system busy)                                   | step 25 |

---

- 30** To quit from the F-bus level of the MAP display, type  
**>QUIT**  
and press the Enter key.  
Go to step 32.

- 31** To reset the XLIU, type  
**>PMRESET**  
and press the Enter key.

---

| If the PMRESET command | Do      |
|------------------------|---------|
| passed                 | step 33 |
| failed                 | step 32 |

---

- 32** To load the XLIU, type  
**>LOADPM**  
and press the Enter key.

---

| If the LOADPM command                                                       | Do      |
|-----------------------------------------------------------------------------|---------|
| passed                                                                      | step 33 |
| failed, with no card list                                                   | step 15 |
| failed, with a card list that contains NTEX22 as the first card on the list | step 15 |
| failed, with a card list that contains NTEX22 as the first card on the list | step 33 |

---



## PM XLIU critical (continued)

|           | If the LOADPM command                                                          | Do      |
|-----------|--------------------------------------------------------------------------------|---------|
|           | failed, without a card list and you already cleared LIM, F-bus, and NIU alarms | step 49 |
| <b>33</b> | To test the XLIU, type<br><b>&gt;TST</b><br>and press the Enter key.           |         |
|           | If the TST command                                                             | Do      |
|           | passed                                                                         | step 48 |
|           | failed, with a card list                                                       | step 41 |
|           | failed, and the message NIU resources currently unavailable appears            | step 38 |
|           | failed, with any other result                                                  | step 49 |

### At the frame

**34**



#### WARNING

##### Static electricity damage

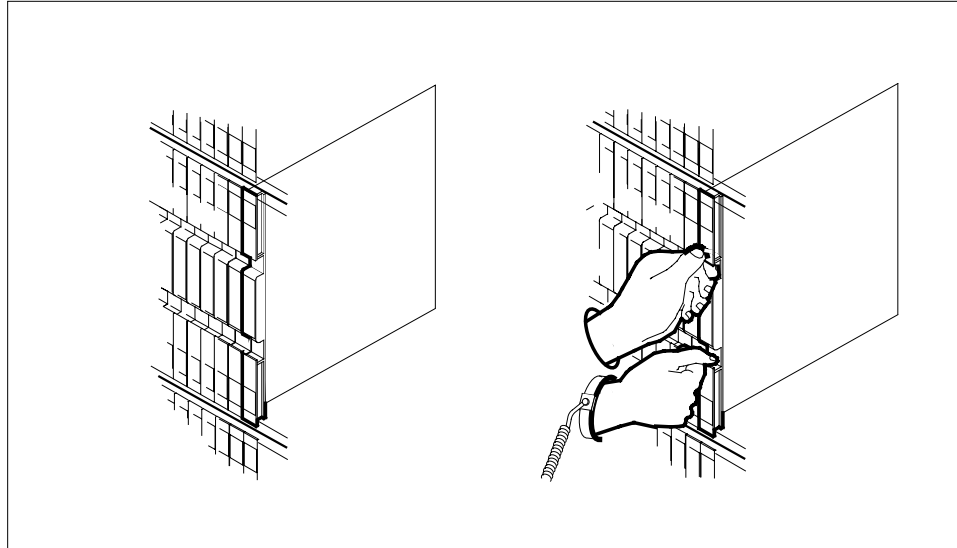
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle cards. The wrist strap protects the cards against static electricity damage.

Locate the NTFX10 card for the XLIU.

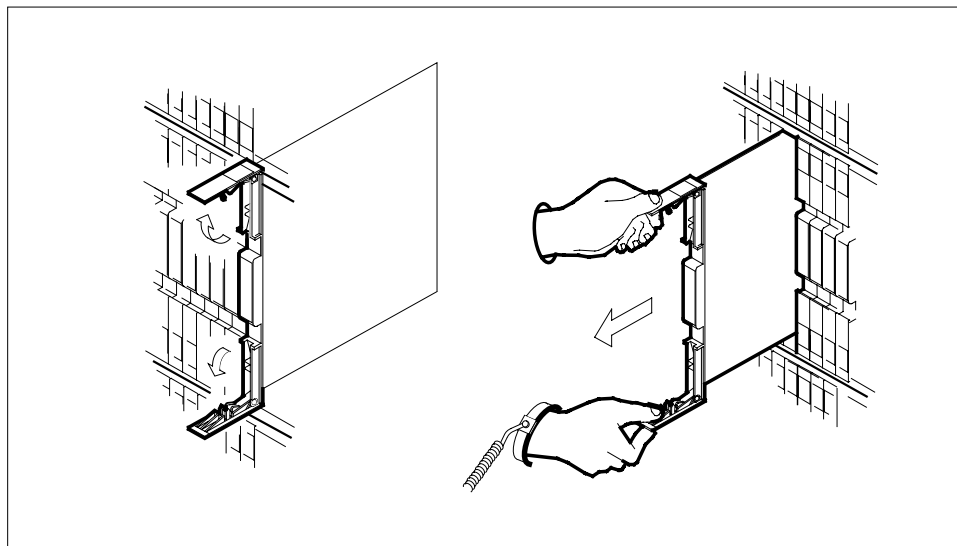
## PM XLIU

### critical (continued)

---



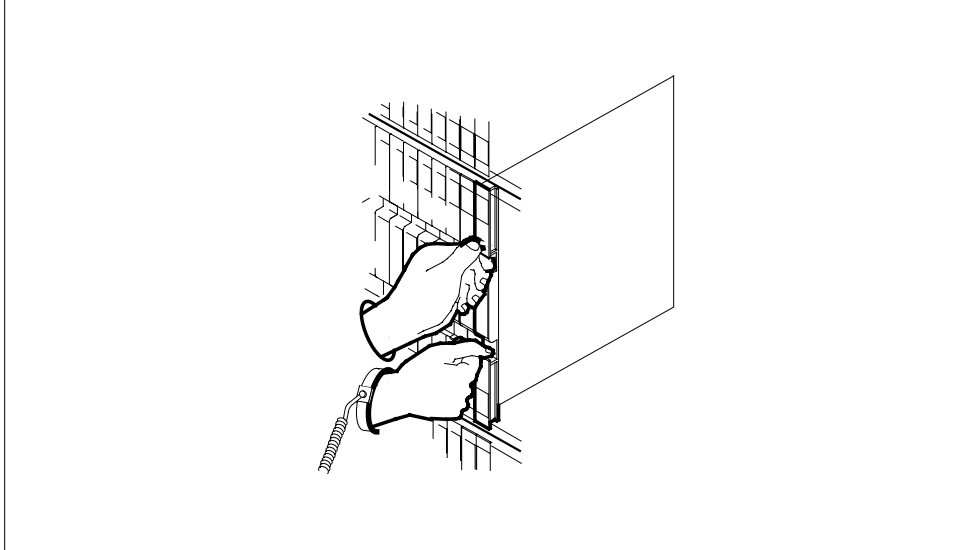
**35** Carefully lift the locking levers. Pull the card toward you 25 mm (1 in.).



- 36** Seat and lock the card, as follows:
- a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
  - b** Close the locking levers.

**PM XLIU**  
**critical** (continued)

---



- 37** Repeat steps 34 to 36 for the NTEX22 and NTFX09 cards for the XLIU.  
Go to step 32.
- 38** Query the state of the XLIU to determine if faults are present that relate to the NIU. To query the state of the XLIU, type  
**>QUERYPM**  
and press the Enter key.  
*Example of a MAP response:*

**PM XLIU**  
**critical** (continued)

---

PM type: XLIU PM No.: 121 Status: ManB  
Node Number 81 XSG 1  
LIM: 0 Shelf: 2 Slot: 12 XLIU FTA: 424E 1000  
Default load: XRX36CJ  
Running load: XRX36CJ

## Potential service affecting conditions:

NIU Unit 0 is not inservice  
CBUS PORT for NIU Unit 0 is not inservice  
NIU Unit 1 is not inservice  
CBUS PORT for NIU Unit 1 is not inservice

|               | Unit 0 | Unit 1 |
|---------------|--------|--------|
| LMS States :  | InSv   | InSv   |
| Auditing :    | No     | No     |
| Msg Channels: | Acc    | Acc    |
| TAP 9 :       | .      | .      |
| NIU 1 :       | SysB   | SysB   |

---

**If the NIU****Do**

---

is out of service

step 39

is in service

step 49

---

**39** A problem with the NIU produces a PM NIU alarm. Perform the correct alarm clearing procedures in this document. Complete the procedure and return to this point.

**40** Go to step 31.

**41** Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

**42** Determine if you replaced one or more cards.

---

**If****Do**

---

you did not use this procedure to  
replace one or more of the cards  
on the list

step 43

you used this procedure to re-  
place all of the cards on the list

step 49

---

**43** Replace the first card on the list that you did not replace as a result of this alarm clearing procedure. To replace the first card on the list, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

**44** Go to step 31.

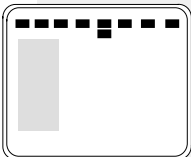
**PM XLIU**  
**critical** (end)

- 
- |           |                                                    |
|-----------|----------------------------------------------------|
| <b>45</b> | Determine if you already replaced the NTEX22 card. |
|-----------|----------------------------------------------------|
- 
- | <b>If you</b>                    | <b>Do</b> |
|----------------------------------|-----------|
| already replaced the NTEX22 card | step 49   |
| did not replace the NTEX22 card  | step 46   |
- 
- |           |                                                                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>46</b> | To replace the NTEX22 card, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point. |
| <b>47</b> | Go to step 32.                                                                                                                                     |
| <b>48</b> | To return the XLIU to service, type<br><b>&gt;RTS FORCE</b><br>and press the Enter key.                                                            |
- 
- | <b>If the RTS command</b> | <b>Do</b> |
|---------------------------|-----------|
| passed                    | step 50   |
| failed                    | step 49   |
- 
- |           |                                                         |
|-----------|---------------------------------------------------------|
| <b>49</b> | For additional help, contact the next level of support. |
| <b>50</b> | The procedure is complete.                              |
-

## PM XLIU major

---

### Alarm display

|                                                                                   |    |    |     |     |                                       |     |     |      |     |      |
|-----------------------------------------------------------------------------------|----|----|-----|-----|---------------------------------------|-----|-----|------|-----|------|
|  | CM | MS | IOD | Net | <b>PM</b><br><b>1XLIU</b><br><b>M</b> | CCS | Lns | Trks | Ext | APPL |
|                                                                                   | .  | .  | .   | .   |                                       | .   | .   | .    | .   | .    |

### Indication

At the MTC level of the MAP display, XLIU (preceded by a number) appears under the PM header of the alarm banner. The XLIU indicates a major alarm for an X.25/X.75 link interface unit (XLIU).

### Meaning

One or more XLIUs are manual busy or manual busy not accessible for one of the following reasons:

- The XLIU was manually busied for maintenance purposes
- The XLIU was manually busied for maintenance purposes. The XLIU does not respond to computing module (CM).

### Result

The indicated number of XLIUs are out of service. The X.25/X.75 links for the XLIUs cannot carry traffic.

### Common procedures

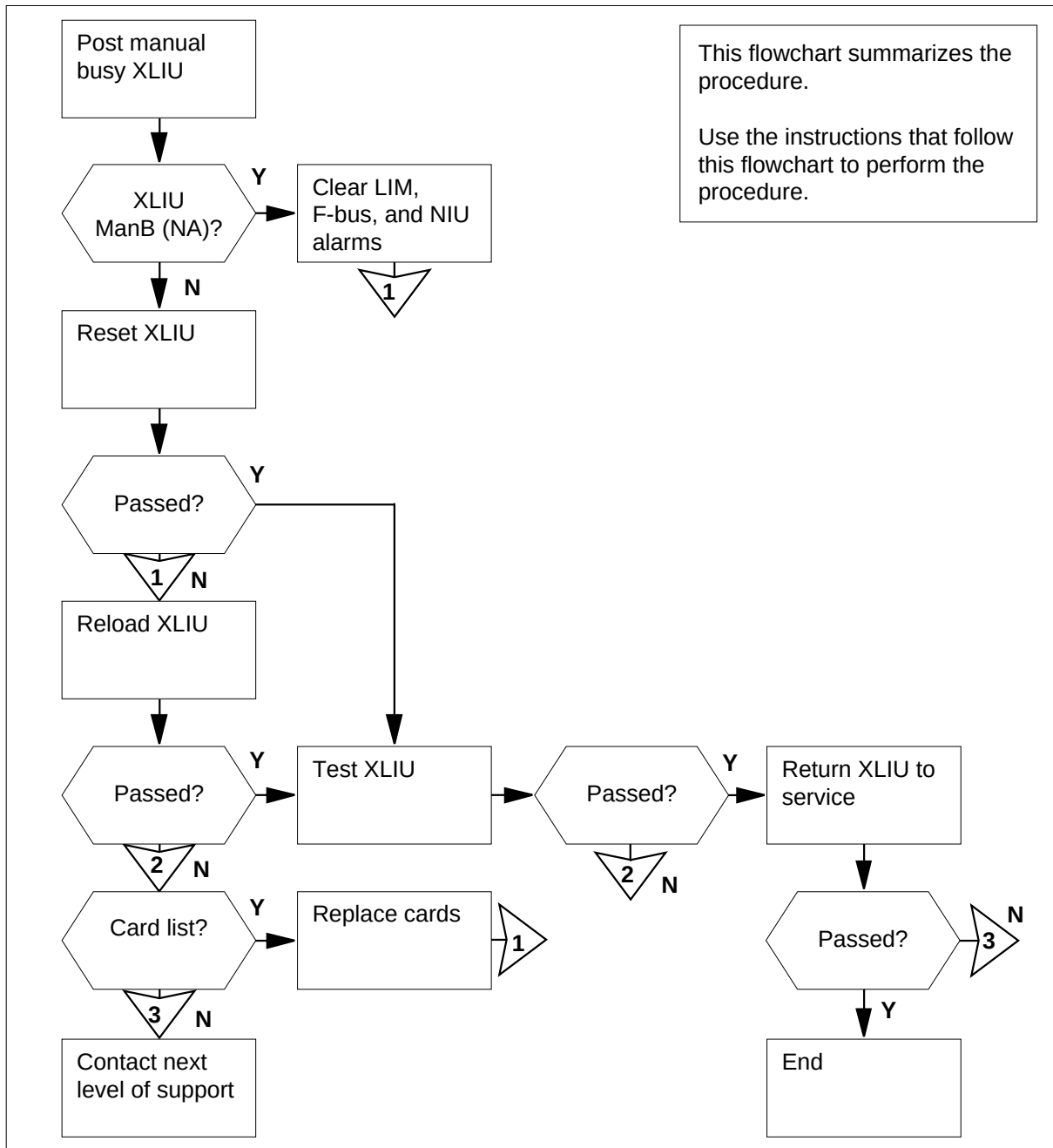
This procedure refers to *Moving an XSG to a spare XLIU*.

### Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

## PM XLIU major (continued)

### Summary of clearing a PM XLIU major alarm



PM XLIU  
major (continued)

How to clear a PM XLIU major alarm

At the MAP terminal

- 1

Determine if all MS alarms cleared.

| If all MS alarms | Do     |
|------------------|--------|
| cleared          | step 3 |
| did not clear    | step 2 |
- 2

Perform the correct MS alarm clearing procedure in this document. Complete the procedure and return to this point.
- 3

To access the PM level of the MAP display, type  
**>MAPCI;MTC;PM**  
and press the Enter key.  
*Example of a MAP response:*

|    |      |      |      |      |      |     |
|----|------|------|------|------|------|-----|
|    | SysB | ManB | OffL | CBSy | ISTb | InS |
| PM | 38   | 1    | 3    | 30   | 16   | 16  |
- 4

To display the manual busy XLIUs, type  
**>DISP STATE MANB XLIU**  
and press the Enter key.  
*Example of MAP response:*  
  
ManB XLIU: 121,312
- 5

Record the numbers of the manual busy XLIUs.
- 6

Select a manual-busy XLIU to work on from the list that you recorded in step 5.
- 7

To post the manual-busy XLIU, type  
**>POST XLIU xliu\_no**  
and press the Enter key.  
*where*  
**xliu\_no**  
is the number of the selected XLIU (0 to 511)  
*Example of a MAP response:*  
  
XLIU 121 ManB Spre



## PM XLIU major (continued)

- 8 To determine if the XLIU is in a link peripheral processor (LPP), type  
**>QUERYPM**  
 and press the Enter key.
- Note:** The code LIM can appear on the far left side of the response on the third line. If the code LIM appears in this location, the XLIU is in an LPP.
- Example of a MAP response:*
- ```
PM type: XLIU   PM No.: 121   Status: ManB
Node Number 81 XSG 1
LIM: 0 Shelf: 2 Slot: 12      XLIU FTA: 424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
  Loadname Mismatch
  CBUS PORT for NIU Unit 0 is not inservice
  CBUS PORT for NIU Unit 1 is not inservice
Unit 0      Unit 1
LMS States  : InSv      InSv
Auditing    : No        No
Msg Channels: Acc        Acc
TAP 9       : .         .
NIU 1       : InSv      InSv
```
If the XLIU	Do
is in an LPP	step 10
is other than listed here	step 9
- 9 Determine if other manual busy XLIUs are present that you did not work on.
- | If other manual busy XLIUs | Do |
|--------------------------------------|---------|
| are present that you did not work on | step 6 |
| are not present | step 51 |
- 10 Determine from office records or operating company personnel why the XLIU is manual busy.
 When you have permission, continue as directed.
- 11 Determine if the XLIU is a spare.
- Note:** The code Spre that appears on the right of the service condition identifies a spare XLIU. The code Spre appears in the display in step 7.

PM XLIU

major (continued)

The code Rsvd that appears on the right of the service condition identifies XLIUs that are not spares.

	If the XLIU	Do
	is a spare	step 14
	is not a spare	step 12
12	Perform the procedure <i>Moving an XSG to a spare XLIU</i> in this document. Complete the procedure and return to this point. Note: The spare XLIU must be in service.	
13	To post the XLIU, type >POST XLIU liu_no and press the Enter key. <i>where</i> liu_no is the number of the XLIU (0 to 511) <i>Example of a MAP response:</i> XLIU 121 ManB Spre	
14	Determine the state of the XLIU. Note: The state of the XLIU appears on the right of the XLIU number. In the example that appears in step 13, the state of XLIU 121 is ManB.	
	If the XLIU	Do
	is ManB	step 31
	is ManB (NA)	step 15
15	To query the XLIU to determine if any related C-side faults occurred, type >QUERYPM and press the Enter key. <i>Example of a MAP response:</i>	

PM XLIU major (continued)

```

PM type: XLIU   PM No.: 121   Status: ManB(NA)
Node Number 81 XSG 1
LIM: 0 Shelf: 2 Slot: 12      XLIU FTA: 424E
1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
    Loadname Mismatch
    Msg Channel #0 NA
    Msg Channel #1 NA
    TAP #0 OOS/NA
    TAP #1 OOS/NA
    CBUS PORT for NIU Unit 0 is not inservice
    CBUS PORT for NIU Unit 1 is not inservice
        Unit 0      Unit 1
LMS States   : InSv      InSv
Auditing     : No        No
Msg Channels : NA        NA
TAP 9        : M(NA)     M(NA)
NIU 1        : InSv      InSv

```

- 16** Record the number of the LIM and the number of the F-bus tap.

Note: The number of the LIM appears on the right of the LIM header on the MAP response. You obtained the MAP response in step 15. The number of the F-bus tap appears on the right of the TAP header.

- 17** To post the LIM for the XLIU, type

```
>POST LIM lim_no
```

and press the Enter key.

where

lim_no

is the number of the LIM (0 to 16)

Example of a MAP response:

```

LIM  0 ISTb
                                Links_00S Taps_00S
Unit0: ISTb                    .          12
Unit1: ISTb                    .          12

```

- 18** To access the F-bus level of the MAP display, type

```
>FBUS
```

and press the Enter key.

Example of a MAP response:

PM XLIU

major (continued)

```

LIM  0 ISTb
                                Links_00S Taps_00S
Unit0: ISTb                    .          12
Unit1: ISTb                    .          12

                                Tap: 0      4      8      12     16     20     24     28     32
FBus0: ManB                    BBBB BBBB BBBB BBBB .---- -
FBus1: ManB                    BBBB BBBB BBBB BBBB .---- -

```

Note: In the example, B under a tap number indicates that the F-bus is manually busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An *M* indicates a manual-busy tap. An *I* indicates an in-service trouble tap. An *S* indicates a system-busy tap. A dash (-) indicates a tap that is not equipped.

- 19** Determine the state of the LIM and both F-buses.

If the state of the LIM and both F-buses	Do

is InSv and ISTb	step 23

is other than listed here	step 20

- 20** Record the state of the defective LIM and F-buses.

- 21** A problem with the LIM produces a PM LIM alarm. A problem with the F-bus produces a PM LIMF alarm. Perform the correct alarm clearing procedures in this document. Complete the procedure and return to this point.

- 22** Go to step 33.

- 23** Determine the state of the F-bus taps.

Note: The tap state appears on the right of the TAP header in the MAP response. You obtained the MAP response in step 15. The tap number applies to both F-buses.

If the state of	Do

one or both F-bus taps is <i>M</i>	step 26

one F-bus tap is <i>M</i> and the other F-bus tap is <i>S</i>	step 26

one or both F-bus taps is <i>S</i>	step 24

both F-bus taps is <i>I</i> or dot (.)	step 46

- 24** Select a system busy tap on which to work.

- 25** To manually busy the system busy F-bus tap, type

```
>BSY FBUS fbus_no tap_no FORCE
```

PM XLIU
major (continued)

and press the Enter key.

where

fbus_no

is the number of the F-bus (0 or 1)

tap_no

is the number of the F-bus tap (0 to 35)

Go to step 28.

26 Select a manual-busy tap on which to work.

27 Determine from office records or operating company personnel why the tap is busy.

When you have permission, continue as directed.

28 To return the F-bus tap to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

fbus_no

is the number of the F-bus (0 or 1)

tap_no

is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed	step 29
failed, and the system generated a card list	step 35
failed, and the system did not generate a card list	step 35
failed, with the response local maintenance not accessible	step 35
failed for any other reason, and you did not work on the other tap	step 29
failed for any other reason, and you worked on the other tap	step 50
29 Determine the state of the other tap.	
If the state of the other tap	Do
is dot (.) (in service) or <i>I</i> (in-service trouble)	step 30
is <i>M</i> (manual busy)	step 27

PM XLIU major (continued)

	If the state of the other tap	Do
	is S (system busy)	step 25
30	To quit from the F-bus level of the MAP display, type >QUIT and press the Enter key. Go to step 33.	
31	To return the XLIU to service, type >RTS and press the Enter key.	
	If the RTS command	Do
	passed, and the state is InSv or ISTb	step 51
	failed, and the state is SysB	step 32
32	To reset the XLIU, type >PMRESET and press the Enter key.	
	If the PMRESET command	Do
	passed	step 34
	failed	step 33
33	To load the XLIU, type >LOADPM and press the Enter key.	
	If the LOADPM command	Do
	passed	step 34
	failed, without a card list	step 15
	fails, with a card list that contains NTEX22 as the first card on the list	step 15
	fails, with a card list that contains NTFX09 or NTFX10 as the first card on the list	step 34

PM XLIU major (continued)

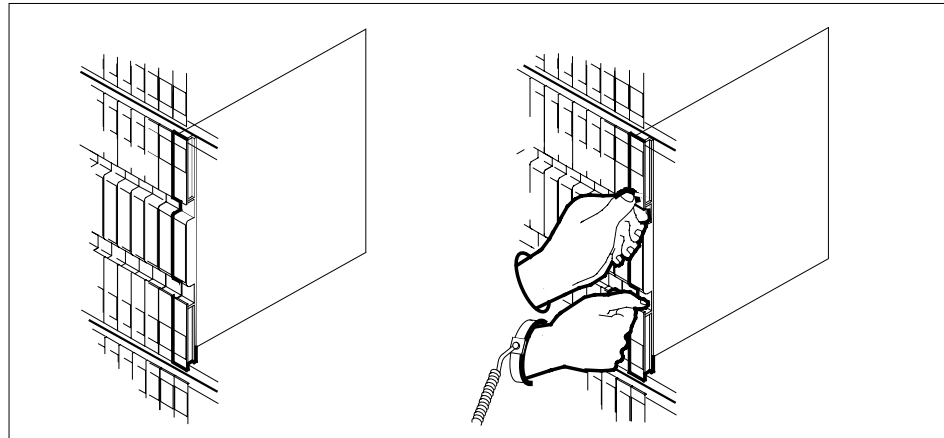
		If the LOADPM command	Do
		failed, without a card list and you already cleared LIM, F-bus, NIU alarms	step 50
34	To test the XLIU, type >TST and press the Enter key.		
		If the TST command	Do
		failed, with a card list	step 42
		failed, and the message NIU resources currently unavailable appears	step 39
		passed	step 49
		other than listed here	step 50

At the frame**35****DANGER****Static electricity damage**

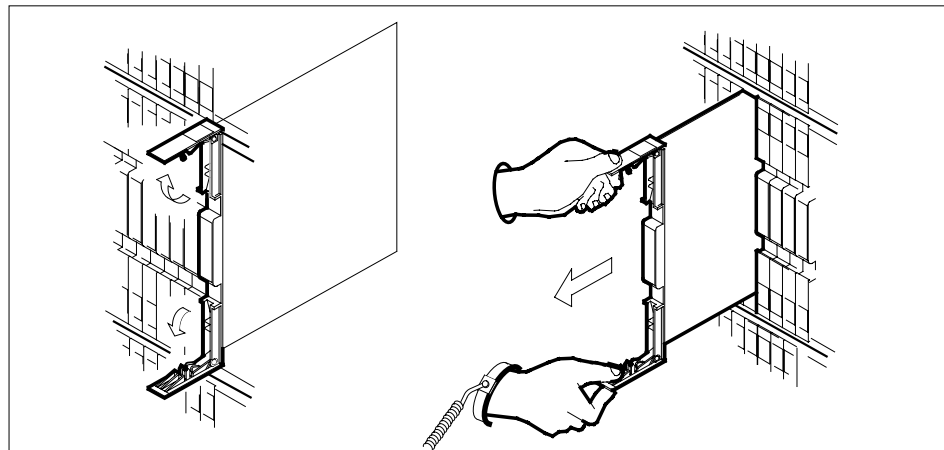
Wear a wrist strap that connects to the wrist-strap grounding point on the frame supervisory panel (FSP) to handle cards. The wrist strap protects the cards against static electricity damage.

Locate the NTFX10 card for the XLIU.

PM XLIU major (continued)



- 36** Carefully lift the locking levers. Pull the card toward you 25 mm (1 in.).

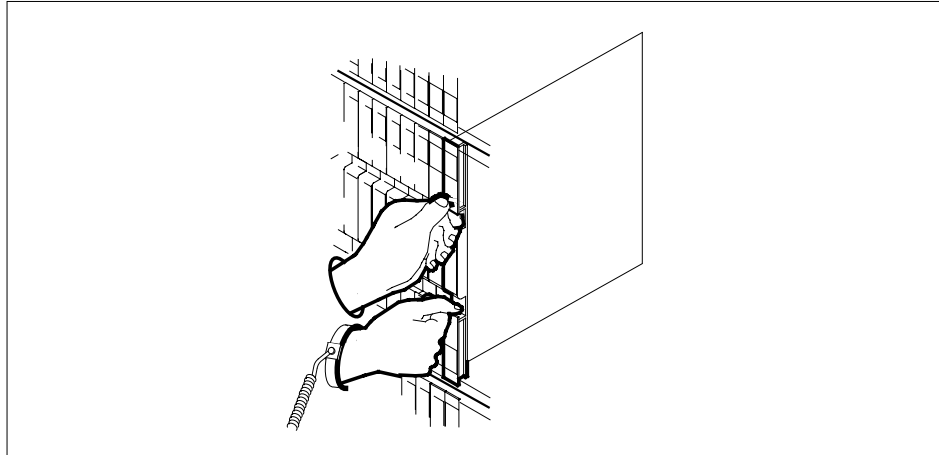


- 37**

Seat and lock the card, as follows:

- a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
- b** Close the locking levers.

PM XLIU major (continued)



- 38** Repeat steps 35 to 37 for the NTEX22 and NTFX09 cards for the XLIU.
Go to step 33.
- 39** Query the state of the XLIU to determine if faults are present that relate to the NIU. To query the state of the XLIU, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

```
PM type: XLIU   PM No.: 121   Status: ManB
Node Number 81 XSG 1
LIM: 0 Shelf: 2 Slot: 12      XLIU FTA: 424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
  NIU Unit 0 is not inservice
  CBUS PORT for NIU Unit 0 is not inservice
  NIU Unit 1 is not inservice
  CBUS PORT for NIU Unit 1 is not inservice
                                Unit 0      Unit 1
LMS States   : InSv              InSv
Auditing     : No                No
Msg Channels: Acc               Acc
TAP 9        : .                 .
NIU 1        : SysB              SysB
```

If the NIU	Do
is out of service	step 40

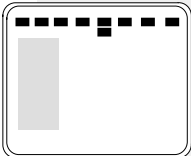
PM XLIU

major (end)

	If the NIU	Do
	is in service	step 50
40	A problem with the NIU produces a PM NIU alarm. Perform the correct alarm clearing procedures in this document. Complete the procedure and return to this point.	
41	Go to step 32.	
42	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.	
43	Determine if you replaced one or more cards.	
	If	Do
	you did not use this procedure to replace one or more of the cards on the list	step 44
	you used the procedure to replace all cards on the list	step 50
44	Replace the first card on the list that you did not replace as a result of this alarm clearing procedure. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
45	Go to step 32 .	
46	Determine if you already replaced the NTEX22 card.	
	If you	Do
	already replaced the NTEX22 card	step 50
	did not replace the NTEX22 card	step 47
47	To replace the NTEX22 card, perform the correct procedure in <i>Card Replacement Procedures</i> .. Complete the procedure and return to this point.	
48	Go to step 33.	
49	To return the XLIU to service, type >RTS FORCE and press the Enter key.	
	If the RTS command	Do
	passed	step 51
	failed	step 50
50	For additional help, contact the next level of support.	
51	The procedure is complete.	

PM XLIU minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	1XLIU	.	.	.	.	.

Indication

At the MTC level of the MAP display, XLIU (preceded by a number) appears under the PM header of the alarm banner. The XLIU indicates a minor alarm for an X.25/X.75 link interface unit (XLIU).

Meaning

One or more XLIUs are in-service trouble for one of the following reasons:

- load name does not match
- one tap is out of service
- one link interface module (LIM) unit is out of service
- one F-bus is out of service
- one network interface unit (NIU) is out of service

The number under the PM header of the alarm banner indicates the number of affected XLIUs.

Result

The XLIUs with in-service trouble continue to function. The condition does not affect traffic on X.25/X.75 links that connect to XLIUs with minor alarms.

Common procedures

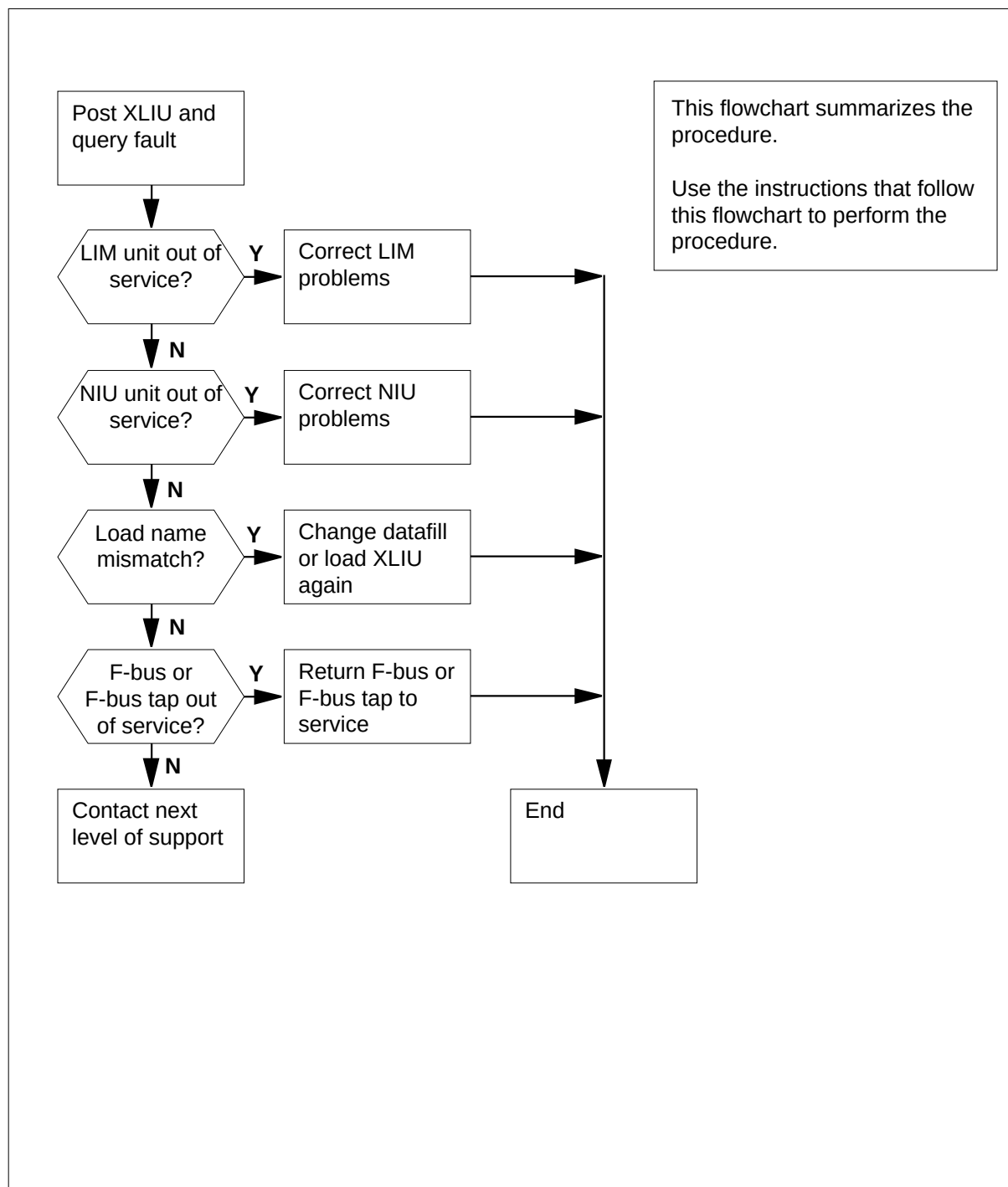
This procedure refers to *Moving an XSG to a spare XLIU*.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM XLIU minor (continued)

Summary of Clearing a PM XLIU minor alarm



PM XLIU minor (continued)

Clearing a PM XLIU minor alarm

At the MAP terminal

1



CAUTION

Possible action that affects service

The completion of the following procedure can require the removal of an XLIU from service. The removal results in loss of service on the associated X.25/X.75 channels. If instructions direct you to busy an XLIU, busy the XLIU during a period of low traffic.

Determine if all MS alarms cleared.

If all MS alarms	Do
cleared	step 3
did not clear	step 2

2 Perform the correct MS alarm clearing procedure in this document. Complete the procedure and return to this point.

3 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP response:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	38	1	3	30	16	16

4 To display the in-service trouble XLIUs, type

>DISP STATE ISTB XLIU

and press the Enter key.

Example of a MAP response:

ISTb XLIU: 121, 312

5 Record the numbers of the in-service trouble XLIUs.

6 Select an in-service trouble XLIU to work on from the list that you recorded in step 5.

PM XLIU minor (continued)

- 7 To post the in-service trouble XLIU, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no

is the number of the selected XLIU (0 to 511)

Example of a MAP display:

```
XLIU    121  ISTb      Rsvd
```

- 8 To determine if the XLIU is in a link peripheral processor (LPP), type

>QUERYPM

and press the Enter key.

Note: The code LIM can appear on the far left of the response on the third line. If the code LIM appears in this location, the XLIU is in an LPP.

Example of a MAP response:

```
PM type: XLIU  PM No.: 121  Status: ISTb
Node Number 81 XSG 1
LIM: 0  Shelf: 2  Slot: 12      XLIU FTA:  424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Istb conditions:
  Msg Channel #0 NA
  TAP #0 OOS/NA
          Unit 0      Unit 1
LMS States  : InSv    InSv
Auditing    : No      Yes
Msg Channels: NA      Acc
TAP 9       : M       .
NIU 1       : InSv    InSv
```

If the XLIU	Do
is in an LPP	step 10
is in other than listed here	step 9

- 9 Determine if other in-service trouble XLIUs that you did not work on are present.

If other in-service trouble XLIUs	Do
that you did not work on are present	step 6

PM XLIU minor (continued)

	If other in-service trouble XLIUs	Do												
	are not present	step 85												
10	To query the fault reason, type >QUERYPM FLT and press the Enter key. Note: The fault reason appears below the Istb conditions header in the MAP response. <i>Example of a MAP response:</i> Istb conditions: Msg Channel #0 NA TAP #0 OOS/NA													
11	Determine the fault reason for the post XLIU.													
	<table><tr><th>If the fault reason</th><th>Do</th></tr><tr><td>is Msg Channel #x NA TAP #x OOS/NA Host Unit x is not inservice</td><td>step 12</td></tr><tr><td>is NIU unit x is not inservice CBUS PORT for NIU Unit x is not inservice</td><td>step 20</td></tr><tr><td>is Loadname mismatch</td><td>step 28</td></tr><tr><td>is Msg Channel #x NA TAP #x OOS/NA</td><td>step 42</td></tr><tr><td>repeatedly switches between two or more of the above reasons</td><td>step 85</td></tr></table>	If the fault reason	Do	is Msg Channel #x NA TAP #x OOS/NA Host Unit x is not inservice	step 12	is NIU unit x is not inservice CBUS PORT for NIU Unit x is not inservice	step 20	is Loadname mismatch	step 28	is Msg Channel #x NA TAP #x OOS/NA	step 42	repeatedly switches between two or more of the above reasons	step 85	
If the fault reason	Do													
is Msg Channel #x NA TAP #x OOS/NA Host Unit x is not inservice	step 12													
is NIU unit x is not inservice CBUS PORT for NIU Unit x is not inservice	step 20													
is Loadname mismatch	step 28													
is Msg Channel #x NA TAP #x OOS/NA	step 42													
repeatedly switches between two or more of the above reasons	step 85													
12	Determine from the MAP response that you obtained in step 8 the number of the LIM for the XLIU. If the response cleared from the MAP display, obtain another query result. To obtain another query result, type >QUERYPM and press the Enter key. Note: The LIM number appears on the third line of the MAP response.													
13	To post the LIM for the in-service trouble XLIU, type >POST LIM lim_no and press the Enter key. <i>where</i> lim_no is the LIM number (0 to 16)													

PM XLIU

minor (continued)

Example of a MAP response:

```

LIM   0  ISTb
                                Links_00S
Taps_00S
Unit0: ISTb                    .          2
Unit1: InSv                    .          0

```

- 14** Determine the state of both LIM units.

If the state of	Do
both LIM units is InSv or ISTb	step 17
one LIM unit is in any other state	step 15

- 15** Record the number and the state of the LIM unit that has faults.

- 16** A problem with the LIM unit produces a PM LIM alarm. Perform the correct LIM alarm clearing procedure in this document. Complete the procedure and return to this point.

- 17** To post the XLIU, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no

is the number of the selected XLIU (0 to 511)

Example of a MAP response:

```

XLIU   121 InSv      Rsvd

```

If the state of the XLIU	Do
is InSv	step 86
is ISTb	step 18
is other than listed here	step 19

- 18** To query the fault reason, type

>QUERYPM FLT

and press the Enter key.

If the fault reason	Do
changed	step 11

PM XLIU minor (continued)

	If the fault reason	Do
	did not change	step 86
19	The state of the XLIU deteriorated. Alarm severity increased. Perform the correct XLIU alarm clearing procedure in this document.	
20	Determine from the MAP response that you obtained in step 8 the number of the NIU for the XLIU. If the response cleared from the MAP display, obtain another query result. To obtain another query result, type >QUERYPM and press the Enter key. Note: The NIU number appears on the last line of the MAP response.	
21	To post the NIU for the in-service trouble XLIU, type >POST NIU niu_no and press the Enter key. <i>where</i> niu_no is the NIU number (0 to 29) <i>Example of a MAP response:</i> NIU 1: ISTb Unit 0: InAct ManB Unit 1: Act ISTb	
22	Determine the state of the NIU units. Note: The state of the NIU units appears on the left side of the activity status for each unit. In the example, Unit 0 is ManB and Unit 1 is InSv.	
	If the state of	Do
	both NIU units is InSv or ISTb	step 25
	one NIU unit is in any other state	step 23
23	Record the number and the state of the NIU unit that has faults.	
24	A problem with the NIU unit produces a PM NIU alarm. Perform the correct NIU alarm clearing procedure in this document. Complete the procedure and return to this point.	
25	To post the XLIU, type >POST XLIU xliu_no and press the Enter key. <i>where</i>	

PM XLIU minor (continued)

xliu_no

is the number of the selected XLIU (0 to 511)

Example of a MAP response

XLIU 121 InSv Rsvd

If the state of the XLIU		Do
is InSv		step 86
is ISTb		step 26
is other than listed here		step 27
26	To query the fault reason, type >QUERYPM FLT and press the Enter key.	
	If the fault reason	
	changed	step 11
	did not change	step 86
27	The state of the XLIU deteriorated. Alarm severity increased. Perform the correct XLIU alarm clearing procedure in this document.	
28	Determine the default load and the running load for the XLIU from the MAP response that you obtained in step 8.	
	If the response cleared from the MAP display, obtain another query result. To obtain another query result, type >QUERYPM and press the Enter key.	
29	Note: The name of the default load appears next to the Default Load header in the MAP response. The name of the running load appears on the right of the Running Load header.	
	Determine from office records or operating company personnel the correct name for the load.	
	If	
	both the default load name and the running load name do not match the load name that you obtained from office records	step 30
	only the default load name does not match the load name that you obtained from office records	step 30

PM XLIU minor (continued)

	If	Do
	only the running load name does not match the load name that you obtained from office records	step 38
30	To access table LIUINV, type >TABLE LIUINV and press the Enter key. <i>Example of a MAP response:</i> TABLE: LIUINV	
31	To position on the datafill for the XLIU, type >POSITION xliu_no and press the Enter key. <i>where</i> xliu_no is the number of the XLIU (0 to 511) <i>Example of a MAP response:</i> XLIU 121 LIM 0 2 12 XRX35CJ NTEX22BB NTFX10AA NTFX09AA	
32	Change the load name that you datafilled for the XLIU to match the name that you obtained from office records. To change the load name, type >CHANGE LOAD and press the Enter key <i>Example of a MAP response:</i> ENTER Y TO CONTINUE PROCESSING OR N TO QUIT	
33	To confirm the command, type >Y and press the Enter key.	
34	To enter the correct load name, type >loadname and press the Enter key. <i>where</i> loadname is the name of the correct load <i>Example of a MAP response:</i>	

PM XLIU minor (continued)

TUPLE TO BE CHANGED:
XLIU 121 LIM 0 2 12 XRX36CJ NTEX22BB
NTFX10AA NTFX09AA
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.

- 35 To confirm the command, type
>Y

and press the Enter key.

- 36 To quit table LIUINV, type
>QUIT

and press the Enter key.

- 37 Determine if the name of the running load matches the load name that you obtained from office records.

If the running load name	Do
does not match the name that you obtained from office records	step 38
matches the name that you obtained from office records	step 86

- 38 Determine if the XLIU is a spare.

Note: The code Spre that appears on the right of the service condition identifies a spare XLIU. The code Spre appears in the MAP display in step 8. The code Rsvd that appears on the right of the service condition identifies XLIUs that are not spares.

If the XLIU	Do
is a spare	step 41
is not a spare	step 39

- 39 Perform the procedure *How to move an XSG to a spare XLIU* in this document. Complete the procedure and return to this point.

Note: The spare XLIU must be in service.

- 40 Determine the state of the XLIU.

Note: The XLIU is the one with the fault. The X.25/X.75 service group (XSG) moved to another in-service XLIU.

If the XLIU	Do
is ManB	step 82
is other than listed here	step 41

PM XLIU minor (continued)

- 41** To manually busy the XLIU, type
>BSY FORCE
 and press the Enter key
 Go to step 82.
- 42** Determine the number of the LIM from the MAP response that you obtained in step 8. The LIM associates with the XLIU and the tap number.
 If the response cleared from the MAP display, obtain another query result. To obtain another query result, type
>QUERYPM
 and press the Enter key
Note: The LIM number appears on the third line of the MAP response. The tap number appears on the right of the TAP header of the MAP response.
- 43** Record the number of the LIM and the number of the F-bus tap.
Note: The number of the LIM appears on the right of the LIM header on the MAP response. You obtained the MAP response in step 8. The number of the F-bus tap appears on the right of the TAP header.
- 44** To post the LIM for the XLIU, type
>POST LIM lim_no
 and press the Enter key.
where
lim_no
 is the number of the LIM (0 to 16)
Example of a MAP response:
- ```

LIM 0 ISTb
 Links_00S Taps_00S
Unit0: ISTb . 12
Unit1: InSv . 0

```
- 45** To access the F-bus level of the MAP display, type  
**>FBUS**  
 and press the Enter key.  
*Example of a MAP response:*
- ```

LIM  0  ISTb
                                Links_00S  Taps_00S
Unit0: ISTb                    .           12
Unit1: InSv                    .           0

Tap:  0      4      8      12     16     20     24     28     32
FBus0: ManB      BBBB BBBB BBBB BBBB.---- ---- ---- ---- ----
FBus1: InSv      .... .... .... .....---- ---- ---- ---- ----

```

PM XLIU

minor (continued)

Note: In the example, B under a tap number indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual busy tap. An L indicates an in-service trouble tap. An S indicates a system busy tap. A dash (-) indicates a tap that is not equipped.

- 46 Determine the state of the F-buses.

Note: The state of the F-buses appears on the right side of the F-bus header on the MAP display.

If the state of	Do
one of the F-buses is SysB or ManB and the other is InSv or ISTb	step 47
both F-buses is ManB or ISTb	step 54

- 47 Record the state of the F-bus that has faults

- 48 A problem with an F-bus produces a PM LIMF alarm. Perform the correct PM LIMF alarm clearing procedures in this document. Complete the procedure and return to this point.

- 49 To post the XLIU, type

>PM;POST XLIU xliu_no

and press the Enter key.

where

xliu_no

is the number of the selected XLIU (0 to 511)

Example of a MAP response:

XLIU 121 InSv Rsvd

If the state of the XLIU	Do
is InSv>	step 86
is ISTb	step 51
is other than listed here	step 50

- 50 The state of the XLIU deteriorated. Alarm severity increased. Perform the correct XLIU alarm clearing procedure in this document.

- 51 To query the fault reason, type

>QUERYPM FLT

PM XLIU minor (continued)

and press the Enter key.

If the fault reason	Do
changed	step 11
did not change	step 52

- 52** To post the LIM for the XLIU, type
>POST LIM lim_no
 and press the Enter key.
where
lim_no
 is the number of the LIM (0 to 16)

Example of a MAP response:

```
LIM  0 InSv
                                Links_00S Taps_00S
Unit0: InSv                    .          1
Unit1: InSv                    .          0
```

- 53** To access the F-bus level of the MAP display, type
>FBUS
 and press the Enter key.
Example of a MAP response:

```
LIM  0 InSv
                                Links_00S Taps_00S
Unit0: InSv                    .          1
Unit1: InSv                    .          0

                                Tap:  0    4    8   12   16   20   24   28   32
FBus0: InSv                    ....  .S..  ....  ----  ----  ----  ----  ----
FBus1: InSv                    ....  ....  ....  ....  ....  ....  ....  ....  ....
```

If the state of both F-buses	Do
is InSv or ISTb	step 54
is other than listed here	step 85

PM XLIU
minor (continued)

- 54** Determine the state of the F-bus taps for the XLIU from the MAP response that you obtained in the previous step.

Note: The tap state appears on the right of the TAP header in the MAP response in the previous step. The tap number applies to both F-buses.

If the state of	Do
both F-bus taps is <i>I</i> or dot (.) and the state of the associated XLIU is not <i>InSv</i>	step 55
both F-bus taps is <i>I</i> or dot (.) and the state of the associated XLIU is <i>InSv</i>	step 56
one F-bus tap is <i>S</i>	step 58
one F-bus tap is <i>M</i>	step 61

- 55** To query the fault reason, type
>QUERYPM FLT
and press the Enter key.

If the fault reason	Do
changed	step 11
did not change	step 85

- 56** The system corrected the cause of the XLIU minor alarm. The alarm cleared. Go to step 86.

- 57** Select a system busy tap on which to work.

- 58** To manually busy the system busy F-bus tap, type
>BSY FBUS fbus_no tap_no FORCE
and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

Go to step 61.

- 59** Select a manual-busy tap on which to work

- 60** Determin from office records or operating company personnel why the tap is busy.

When you have permission, continue this procedure.

PM XLIU minor (continued)

- 61** To return the F-bus tap to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

fbus_no

is the number of the F-bus (0 or 1)

tap_no

is the number of the F-bus tap (0 to 35)

If the command	Do
passed	step 62
failed, and the system generated a card list	step 74
failed, and the system did not generate a card list	step 65
failed, with the response local maintenance not accessible	step 65
failed, with any other response	step 85

- 62** To post the XLIU, type

>PM;POST XLIU xliu_no

and press the Enter key.

where

xliu_no

is the number of the selected XLIU (0 to 511)

Example of a MAP response:

XLIU 121 InSv Rsvd

If the state of the XLIU	Do
is InSv	step 86
is ISTb	step 63
is other than listed here	step 64

- 63** To query the fault reason, type

>QUERYPM FLT

PM XLIU

minor (continued)

and press the Enter key.

If the fault reason	Do
changed	step 11
did not change	step 85

- 64** The state of the XLIU deteriorated. Alarm severity increased. Exit this procedure and perform the correct XLIU alarm clearing procedure in this document. Do not return to this procedure.

- 65** To post the XLIU, type
>PM;POST XLIU xliu_no
 and press the Enter key.

where:

xliu_no
 is the number of the selected XLIU (0 to 511)

Example of a MAP display:

XLIU 121 ISTb Rsvd

- 66** Determine if the XLIU is a spare.
Note: The code Spre that appears on the right of the service condition identifies a spare XLIU. The code appears in the MAP in step 65. The code Rsvd that appears on the right of the service condition identifies XLIUs that are not spares.

If the XLIU	Do
is a spare	step 69
is not a spare	step 67

- 67** Perform the procedure *How to move an XSG to a spare XLIU* in this document. Complete the procedure and return to this point.

Note: The spare XLIU must be in service.

- 68** Determine the state of the XLIU.
Note: The XLIU that you are working on is the one with the fault. The X.25/X.75 service group (XSG) moved to another in-service XLIU.

If the XLIU	Do
is ManB	step 70
is other than listed here	step 69

- 69** To manually busy the XLIU, type
>BSY FORCE

PM XLIU
minor (continued)

and press the Enter key.

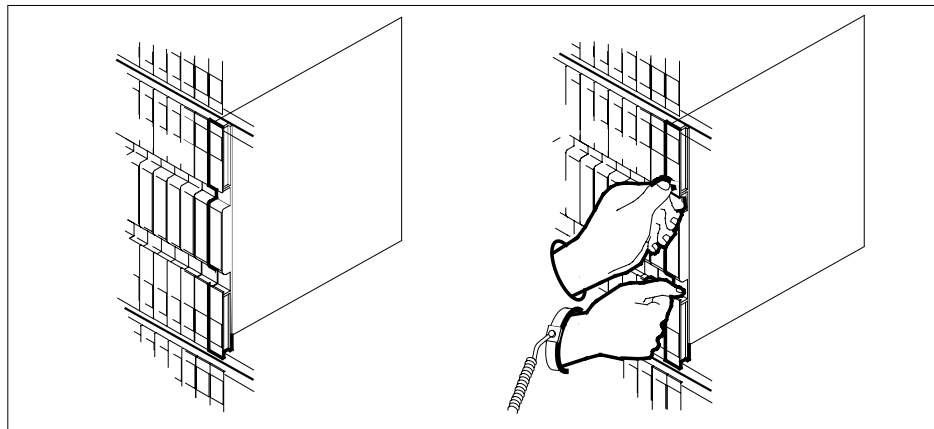
At the frame

70

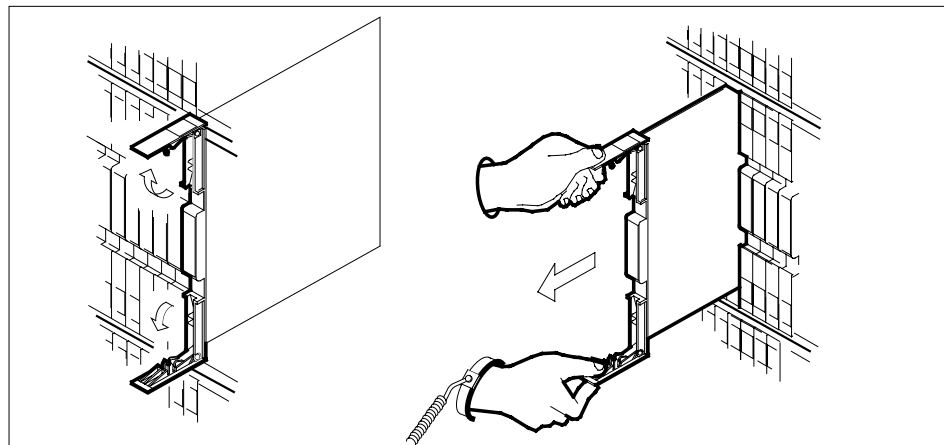
**WARNING****Static electricity damage**

Wear a wrist strap that connects to the wrist-strap grounding point of the frame supervisory panel (FSP) to handle cards. The wrist strap protects the cards against static electricity damage.

Locate the NTFX10 card for the XLIU that you are working on.



71 Carefully lift the locking levers. Pull the card toward you 25 mm (1 in.).

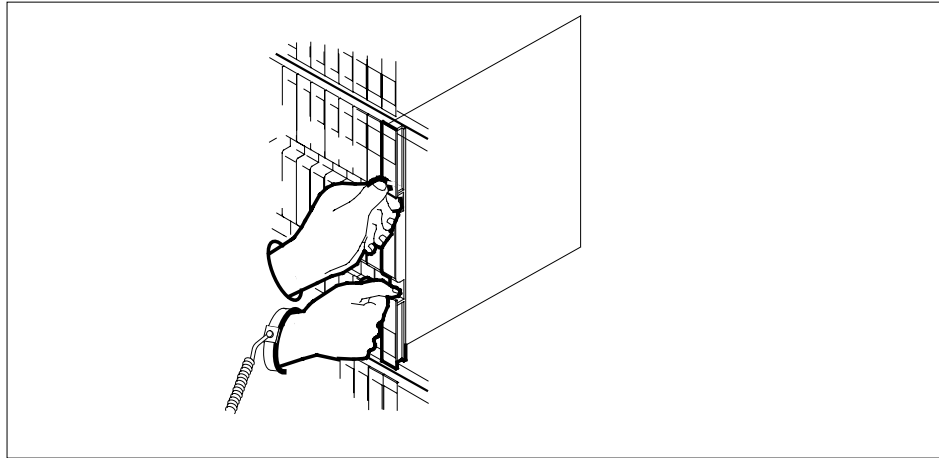


72 Seat and lock the card, as follows:

PM XLIU

minor (continued)

- a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.
- b Close the locking levers.



- 73 Repeat steps 70 to 72 for the NTEX22 and NTFX09 card for the XLIU.
Go to step 82.

- 74 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

- 75 To post the XLIU, type
>PM;POST XLIU xliu_n
and press the Enter key.

where

xliu_no

is the number of the selected XLIU (0 to 511)

Example of a MAP display:

XLIU 121 ISTb Rsvd

- 76 Determine if the XLIU is a spare.

Note: The code Spre that appears on the right of the service condition identifies a spare XLIU. The code appears in the MAP display in step 65. The code Rsvd that appears on the right of the service condition identifies the XLIUs that are not spares.

If the XLIU	Do
is a spare	step 79
is not a spare	step 77

PM XLIU minor (continued)

- 77 Perform the procedure *How to move an XSG to a spare XLIU* in this document. Complete the procedure and return to this point.
- Note:** The spare XLIU must be in service.
- 78 Determine the state of the XLIU.
- | If the XLIU | Do |
|---------------------------|---------|
| is ManB | step 80 |
| is other than listed here | step 79 |
- 79 To manually busy the XLIU, type
>BSY FORCE
and press the Enter key
- 80 Replace the first card on the list that you did not replace as a result of this alarm clearing procedure. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.
- 81 Go to step 82.
- 82 To load the XLIU, type
>LOADPM
and press the Enter key.
- | If the LOADPM command | Do |
|--|---------|
| passed | step 83 |
| failed without a card list, and you reseated all cards | step 85 |
| failed without a card list, and you did not reseat all cards | step 70 |
| fails with a card list, and you did not replace one or more of the cards on the list | step 80 |
| failed with a card list and you replaced all cards on the list | step 85 |
- 83 To test the XLIU, type
>TST
and press the Enter key.
- | If the TST command | Do |
|--------------------|---------|
| passed | step 84 |

PM XLIU
minor (end)

		If the TST command	Do
		fails with a card list and you did not replace one or more of the cards on the list	step 80
		failed with a card list and you replaced all cards on the list	step 85
84	To return the XLIU to service, type >RTS FORCE and press the Enter key.		
		If the RTS command	Do
		passed	step 86
		failed	step 85
85	For additional help, contact the next level of support.		
86	The procedure is complete.		

2 Trunks alarm clearing procedures

Introduction

This chapter contains trunks alarm clearing procedures. Trunks alarms appear under the Trks header of the alarm banner in the MAP display. All procedures contain the following sections:

- Alarm display
- Indication
- Meaning
- Result
- Common procedures
- Action

Alarm display

This section indicates how the alarm appears at the MAP terminal.

Indication

This section indicates:

- the location of the alarm indicator
- the representation of the alarm
- the affected subsystem
- the alarm severity

Meaning

This section indicates the cause of the alarm.

Result

This section describes the results of the alarm condition.

Common procedures

This section lists common procedures used during the alarm clearing procedure. A common procedure is a series of steps repeated in maintenance

procedures. The removal and replacement of a card is an example of a common procedure. The common procedures chapter in this NTP contains common procedures.

Do not go to the common procedure unless the step-action procedure directs you to go.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

TRKS 62CG AIS SPM minor

Alarm display

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	.	.	.	62CG	.	.
.	.	.	.	.	.	.		.	.

Indication

At the carrier level of the MAP terminal, a CG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects an alarm indication signal (AIS). The SPM generates the AIS alarm when an unbroken sequence of frames with AIS signals is detected for a duration of 2.5 s. The SPM clears the alarm when an AIS is not detected for 10 s.

Logs CARR300 and CARR310 relate to the AIS alarm. Table MNHSCARR contains datafill related to the AIS alarm.

Impact

Service is not affected.

The AIS alarm applies to the following carrier types:

- STS-3L
- STS-1P
- VT-1.5P
- DS-3P
- DS-1P

Common procedures

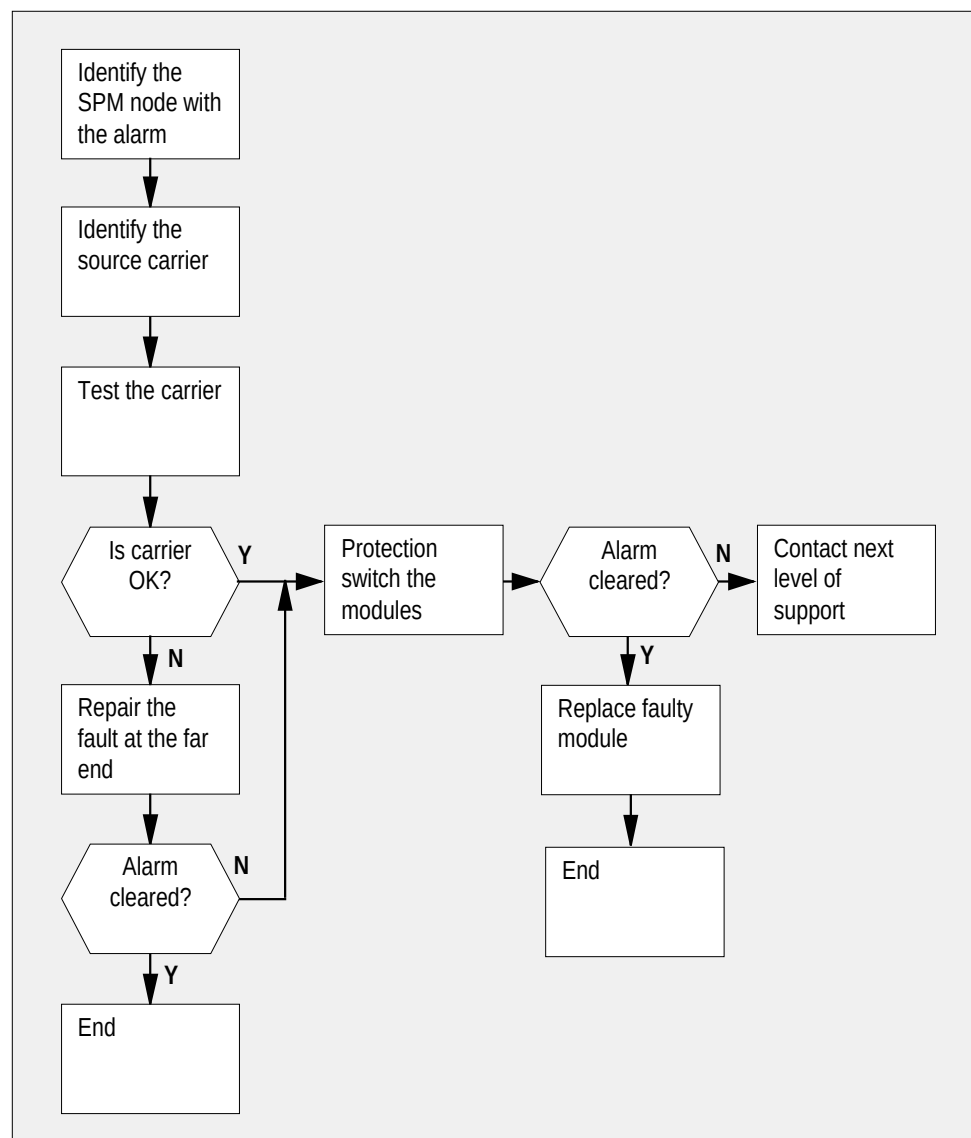
See "Accessing SPM alarms."

TRKS 62CG AIS SPM minor (continued)

Action

The following flowchart is only a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing an AIS alarm



TRKS 62CG AIS SPM minor (continued)

Clearing an AIS alarm

At the MAP terminal

- 1 Access the carrier level of the MAP screen by typing

> MAPCI;MTC;TRKS;CARRIER

and pressing the Enter key.

Example of a MAP screen:

CLASS	ML	OS	ALRM	SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	1	0	28	28	0	0	0	0	0	50
TIMING	0	0	0	0	0	0	0	0	0	2
HSCARR	0	0	0	1	3	0	1	0	0	180

MTC:

TRKS:

CARRIER:

- 2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

PM	NO	CKT	PM	NO	CKT	PM	NO	CKT	PM	NO	CKT
DTC	0	13	DTC	0	14	DTC	0	15	DTC	0	18
SPM	20	29	SPM	20	30	SPM	20	31	SPM	20	32

DISPLAYED BY CONDITION : ALARM

DISP:

MORE...

- 3 Record the SPM number (NO) and circuit (CKT) number combinations.
- 4 Post each SPM carrier circuit with an alarm by typing

>POST SPM spm_no ckt_no

and pressing the Enter key.

where

spm_no

is the number of the SPM (0 to 63)

TRKS 62CG AIS SPM**minor** (continued)**ckt_no**

is the number of the circuit (0 to 181)

Example of a MAP screen:

```

STS1P
N  CLASS  SITE  SPM  STS1P  DS3P  VT15P  DS1P  CKT  STATE  MA
0  HSCARR  HOST  20    2      -    -      -   33  InSv  --

```

SIZE OF POSTED SET : 30

MORE...

- 5 Test the carrier by typing

>TST carrier_no

and pressing the Enter key.

where

carrier_no

is the number of the carrier (0 to 4)

- 6 Determine whether the carrier signal is valid.

If the test result shows	Do
test passed	step 9
test failed	step 7

- 7 Troubleshoot the carrier circuit according to your company procedures. When you have completed the procedure, return to this point.

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits.

- 8 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

where

carrier_no

is the number of the carrier (0 to 4)

If the alarm list shows	Do
None	step 18
AIS	step 9

TRKS 62CG AIS SPM minor (continued)

- 9 Access the PM level of the MAP screen by typing

>MAPCI;MTC;PM

and pressing the Enter key.

Example of a MAP screen:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	1	1	1	3	2	12

- 10 Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no

refers to number of the SPM (0 to 63)

Example of a MAP screen:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	7	2	2	2	9	16
SPM	0	2	1	0	0	0

SPM 20 **InSv** Loc: Site HOST Floor 1 Row A FrPos 13

Shlf0	SL	A	Stat	Shlf0	SL	A	Stat	Shlf1	SL	A	Stat	Shlf1	SL	A	Stat
-----	1	-	----	CEM 1	8	I	InSv	-----	1	-	----	-----	8	-	----
-----	2	-	----	OC3 0	9	A	InSv	-----	2	-	----	-----	9	-	----
DSP 3	3	I	InSv	OC3 1	10	I	InSv	-----	3	-	----	-----	10	-	----
-----	4	-	----	-----	11	-	----	-----	4	-	----	-----	11	-	----
-----	5	-	----	DSP12	12	A	InSv	-----	5	-	----	-----	12	-	----
-----	6	-	----	DSP13	13	A	InSv	-----	6	-	----	-----	13	-	----
CEM 0	7	A	InSv	-----	14	A	InSv	-----	7	-	----	-----	14	-	----

- 11 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no

is the number of the OC3 module (0 to 27)

Example of a MAP screen:

TRKS 62CG AIS SPM

minor (continued)

SPM 20 OC3 1 Act InSv

Loc : Row E FrPos 8 ShPos 24 ShId 0 Slot 10 Prot Grp : 1
Default Load: SPMLoad Prot Role: Spare

- 12** Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

- 13** Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no

is the number (0 to 27) of the module with the alarm

to_unit_no

is the number (0 to 27) of the inactive module in the same protection group

Example of a MAP screen:

SPM 20 OC3 1 Manual: Request has been submitted.

SPM 20 OC3 0 Manual: Command completed.

- 14** Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

- 15** Determine whether the alarm has cleared.

If the alarm list shows	Do
AIS	step 16
None	step 18

TRKS 62CG AIS SPM
minor (end)

- 16** Replace the OC3 module. For detailed instructions, see "SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you have completed the procedure, go to Step 18.
- 17** For further assistance, contact the personnel responsible for the next level of support.
- 18** You have completed this procedure. Return to the CI level of the MAP screen by typing

>QUIT ALL

and pressing the Enter key.

TRKS 62G BERSF SPM
minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks 62 G	Ext	APPL
	.	.	.	.	.	.	.		.	.
	.	.	.	.	.	.	.		.	.

Indication

At the carrier level of the MAP terminal, a TG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a bit-error-rate signal failure (BERSF). The SPM generates the BERSF alarm when the bit error rate exceeds the datafilled value for a duration of 2.5 s. The bit-error-rate limit is datafilled in field SFBERLIM in table MNHSCARR. The SPM clears the alarm when the BERSF indication is not detected for 10 s.

Logs CARR300 and CARR310 relate to the BERSF alarm. Table MNHSCARR contains datafill related to the BERSF alarm.

Impact

Service is not affected.

The BERSF alarm generates for the STS-3L carrier class.

Common procedures

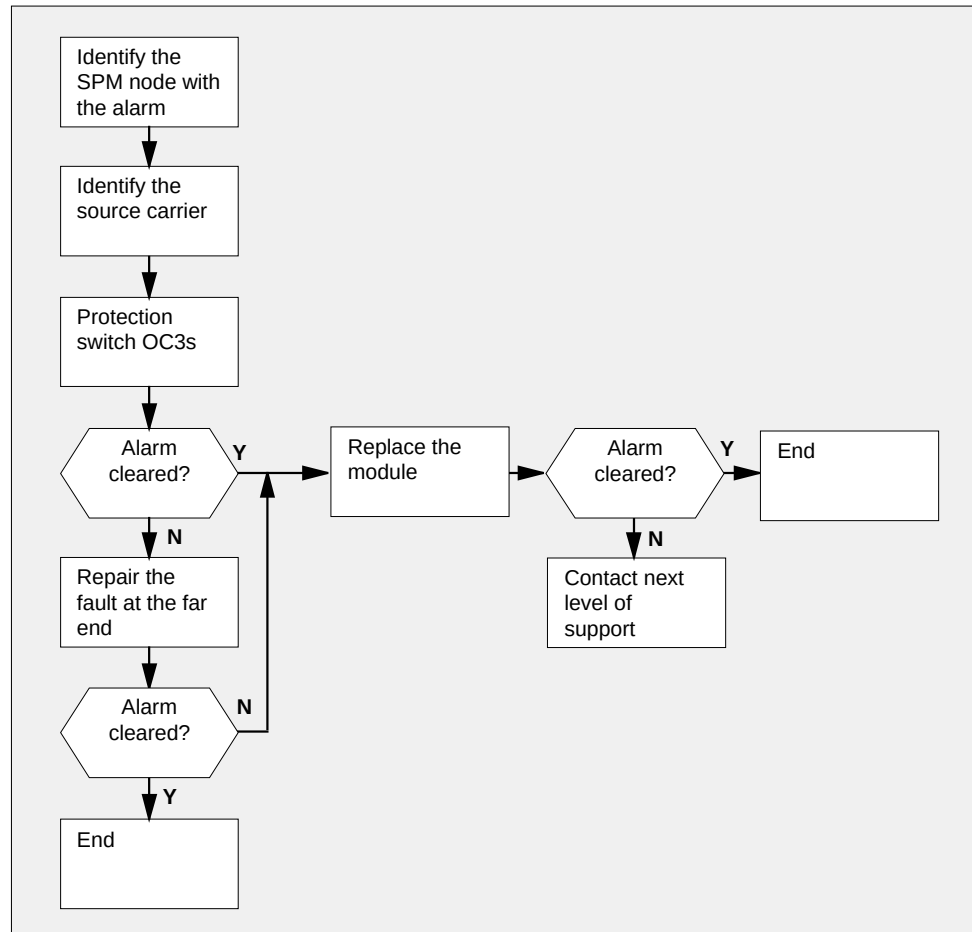
See “Accessing SPM alarms.”

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing a BERSF alarm

TRKS 62G BERSF SPM minor (continued)



Clearing a BERSF alarm

At the MAP terminal

- 1 Access the carrier level of the MAP screen by typing
> MAPCI;MTC;TRKS;CARRIER
 and pressing the Enter key.

Example of a MAP screen:

TRKS 62G BERSF SPM**minor** (continued)

CLASS	ML	OS	ALRM	SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	1	0	28	28	0	0	0	0	0	50
TIMING	0	0	0	0	0	0	0	0	0	2
HSCARR	0	0	0	1	3	0	1	0	0	180

MTC:
TRKS:
CARRIER:

- 2** Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

PM	NO	CKT	PM	NO	CKT	PM	NO	CKT	PM	NO	CKT
DTC	0	13	DTC	0	14	DTC	0	15	DTC	0	18
SPM	20	29	SPM	20	30	SPM	20	31	SPM	20	32

DISPLAYED BY CONDITION : ALARM
DISP:
MORE...

- 3** Record the SPM number (NO) and circuit (CKT) number combinations.

- 4** Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no

refers to number of the SPM (0 to 63)

Example of a MAP screen:

TRKS 62G BERSF SPM minor (continued)

		SysB	ManB	OffL	CBsy	ISTb	InSv
PM		7	2	2	2	9	16
SPM		0	2	1	0	0	0

SPM	20	InSv	Loc: Site	HOST	Floor	1	Row A	FrPos	13

Shlf0	SL	A	Stat	Shlf0	SL	A	Stat	Shlf1	SL	A	Stat	Shlf1	SL	A	Stat
----	1	-	----	CEM	1	8	I InSv	----	1	-	----	----	8	-	----
----	2	-	----	OC3	0	9	A InSv	----	2	-	----	----	9	-	----
DSP	3	3	I InSv	OC3	1	10	I InSv	----	3	-	----	----	10	-	----
----	4	-	----	----	11	-	----	----	4	-	----	----	11	-	----
----	5	-	----	DSP12	12	A	InSv	----	5	-	----	----	12	-	----
----	6	-	----	DSP13	13	A	InSv	----	6	-	----	----	13	-	----
CEM	0	7	A InSv	----	14	A	InSv	----	7	-	----	----	14	-	----

- 5 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no

is the number of the OC3 module (0 to 27)

Example of a MAP screen:

SPM	20	OC3	1	Act	InSv	
Loc :	Row E	FrPos	8	ShPos	24	ShId 0 Slot 10
Default Load:	SPMLOAD				Prot Grp :	1
					Prot Role:	Spare

- 6 Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

- 7 Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no

is the number (0 to 27) of the module with the alarm.

to_unit_no

is the number (0 to 27) of the inactive module in the same protection group

Example of a MAP screen:

TRKS 62G BERSF SPM**minor** (continued)

SPM 20 OC3 1 Manual: Request has been submitted.

SPM 20 OC3 0 Manual: Command completed.

- 8 Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

where

carrier_no

is the number of the carrier (0 to 4)

- 9 Determine whether the alarm has cleared.

If the alarm list shows	Do
BERSF	step 12
None	step 10

- 10 Replace the OC3 module. For detailed instructions, see "SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you complete the card replacement procedure, return to this point.

- 11 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

If the alarm list shows	Do
None	step 15
BERSF	step 14

- 12 Troubleshoot the carrier circuit according to your company procedures. When you complete the troubleshooting procedure, return to this point.

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits.

- 13 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

If the alarm list shows	Do
None	step 15

TRKS 62G BERSF SPM
minor (end)

If the alarm list shows	Do
BERSF	step 14

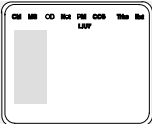
- 14** For further assistance, contact the personnel responsible for the next level of support.
- 15** You have completed this procedure. Return to the CI level of the MAP screen by typing

>QUIT ALL

and pressing the Enter key.

TRKS 62GC LOS SPM critical

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	62 GC.	.	.
	.	.	.	.	.	.	.	*C*	.	.

Indication

At the carrier level of the MAP display, a TG preceded by a number appears under the Trks header of the alarm banner and a critical alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a loss of signal (LOS). The SPM generates the LOS alarm when there is a continuous absence of any detectable transmission pulses at the receiving end for a duration of 2.5 s. The SPM clears the alarm when transmission pulses are detected for 10 s.

Logs CARR300 and CARR310 relate to the LOP alarm. Table MNHSCARR contains datafill related to the LOP alarm.

Impact

This alarm indicates that a severe, service-affecting condition exists. Immediate corrective action is required.

The LOS alarm generates for OC3 Section carrier types only.

Common procedures

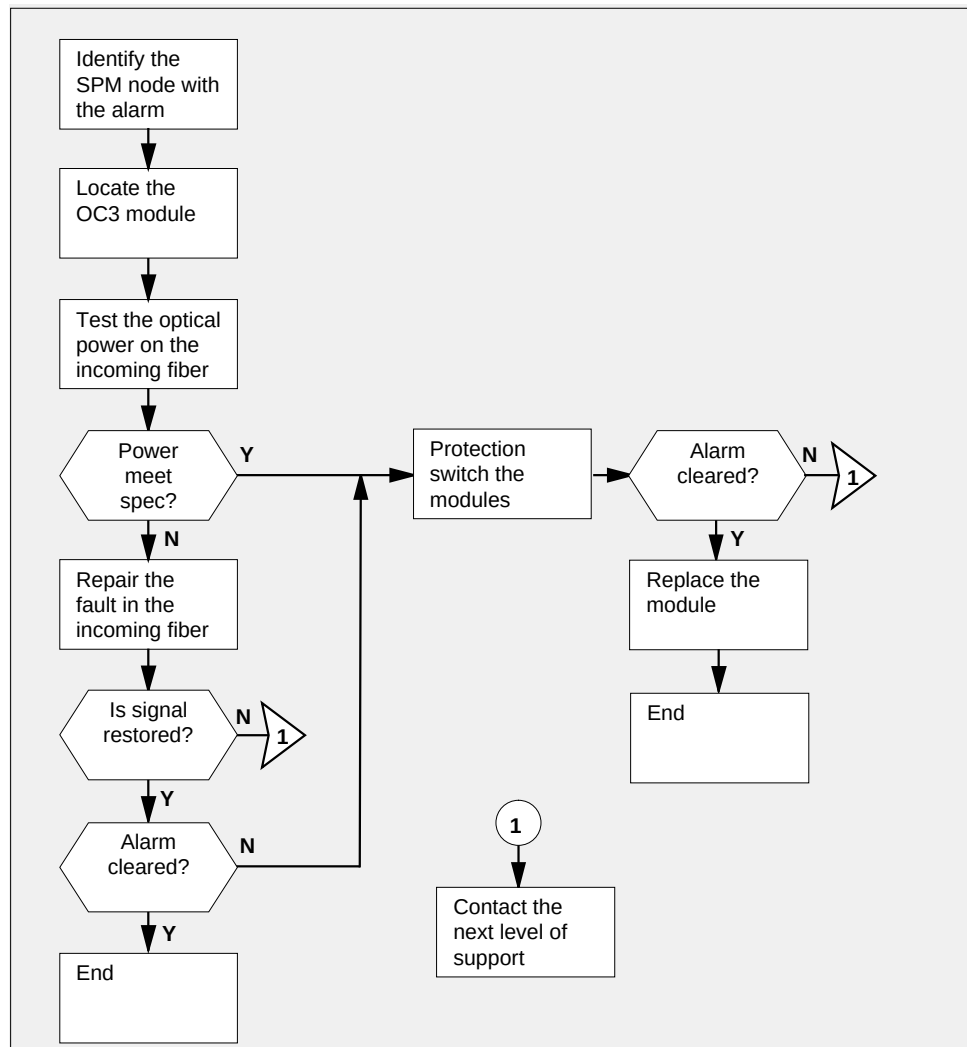
See "Accessing SPM alarms."

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing an LOS alarm

TRKS 62GC LOS SPM critical (continued)



Clearing an LOS alarm

At the MAP terminal

- 1 Access the carrier level of the MAP screen by typing
> MAPCI;MTC;TRKS;CARRIER
 and pressing the Enter key.

Example of a MAP screen:

TRKS 62GC LOS SPM critical (continued)

CLASS	ML	OS	ALRM	SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	1	0	28	28	0	0	0	0	0	50
TIMING	0	0	0	0	0	0	0	0	0	2
HSCARR	0	0	0	1	3	0	1	0	0	180

MTC:
TRKS:
CARRIER:

- 2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

PM	NO	CKT	PM	NO	CKT	PM	NO	CKT	PM	NO	CKT
DTC	0	13	DTC	0	14	DTC	0	15	DTC	0	18
SPM	20	29	SPM	20	30	SPM	20	31	SPM	20	32

DISPLAYED BY CONDITION : ALARM
DISP:
MORE...

- 3 Record the SPM number (NO) and circuit (CKT) number combinations.
- 4 Access the PM level of the MAP screen by typing

>MAPCI;MTC;PM

and pressing the Enter key.

Example of a MAP screen:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	1	1	1	3	2	12

- 5 Post the SPMs by typing
- >POST SPM spm_no**
- and pressing the Enter key.

where

spm_no

refers to number of the SPM (0 to 63)

TRKS 62GC LOS SPM critical (continued)

Example of a MAP screen:

```

          SysB   ManB   OffL   CBsy   ISTb   InSv
PM         7     2     2     2     9     16
SPM        0     2     1     0     0     0

SPM  20  InSv  Loc: Site HOST Floor  1 Row A  FrPos 13

Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
----- 1 - ----  CEM 1  8 I InSv  ----- 1 - ----  ----- 8 - ----
----- 2 - ----  OC3 0  9 A InSv  ----- 2 - ----  ----- 9 - ----
DSP 3  3 I InSv  OC3 1 10 I InSv  ----- 3 - ----  ----- 10 - ----
----- 4 - ----  ----- 11 - ----  ----- 4 - ----  ----- 11 - ----
----- 5 - ----  DSP12 12 A InSv  ----- 5 - ----  ----- 12 - ----
----- 6 - ----  DSP13 13 A InSv  ----- 6 - ----  ----- 13 - ----
CEM 0  7 A InSv  ----- 14 A InSv  ----- 7 - ----  ----- 14 - ----

```

- 6 Use the SPM shelf and slot numbers to locate the OC3 module with the LOS alarm. Locate the OC3 module with the illuminated LOS alarm indicator (yellow circle).
- 7 Remove the fiber connector from the receiver socket on the OC3 module. Clean the socket and the connector with compressed air. Use an optical power meter to measure the power at the receiver connector.

If the power is	Do
above -34 dBm (for example, -30 dBm)	step 10
below -34 dBm	step 8

- 8 Troubleshoot the fiber optic cable according to your company procedures. When you have completed the procedure, return to this point.
Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot fiber optic cables.
- 9 Use an optical power meter to measure the power at the receiver connector.

If the power is	Do
above -34 dBm (for example, -30 dBm)	step 10
below -34 dBm	step 17

TRKS 62GC LOS SPM

critical (continued)

- 10** Plug the fiber optic connector into the receiver socket. Check to see if the alarm has cleared.

If the alarm lamp on the module is	Do
off	step 18
illuminated	step 11

- 11** Select the active OC3 module by typing
>SELECT OC3 module_no
and pressing the Enter key.
where
module_no
is the number of the OC3 module (0 to 27)
Example of a MAP screen:

```
SPM 20      OC3 1      Act  InSv

Loc : Row E  FrPos  8 ShPos 24 ShId 0 Slot 10  Prot Grp : 1
Default Load: SPMLoad                      Prot Role: Spare
```

- 12** Access the protection level of the MAP screen by typing
>PROT
and pressing the Enter key.
- 13** Do a manual protection switch with a module in the same protection group by typing
>MANUAL from_unit_no to_unit_no
and pressing the Enter key.
where
from_unit_no
is the number (0 to 27) of the module with the alarm.
to_unit_no
is the number (0 to 27) of the inactive module in the same

protection group
Example of a MAP screen:

TRKS 62GC LOS SPM
critical (end)

SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.

- 14** List the alarms on the module by typing

>LISTALM

and pressing the Enter key.

- 15** Determine whether the alarm has cleared.

If the alarm list indicates	Do
LOS	step 17
None	step 16

- 16** Replace the OC3 module. For detailed instructions, see “SPM NTLX71AA OC3 card” in the appropriate *Card Replacement Procedures*. When you complete the card replacement procedure, go to step 18 of this procedure.

- 17** For further assistance, contact the personnel responsible for the next level of support.

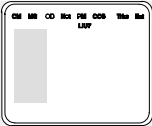
- 18** You have completed this procedure. Return to the CI level of the MAP screen by typing

>QUIT ALL

and pressing the Enter key.

TRKS 62TG BERSD SPM
minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks 62TG	Ext	APPL
	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.

Indication

At the carrier level of the MAP teminal, a TG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a bit-error-rate signal degradation (BERSD). The SPM generates the BERSD alarm when the bit error rate exceeds the datafilled value for a duration of 2.5 s. The bit-error-rate limit is datafilled in field SDBERLIM in table MNHSCARR. The SPM clears the alarm when the BERSD indication is not detected for 10 s.

Logs CARR300 and CARR310 relate to the BERSD alarm. Table MNHSCARR contains datafill related to the BERSD alarm.

Impact

Service is not affected.

The BERSD alarm generates for the STS-3L carrier type.

Common procedures

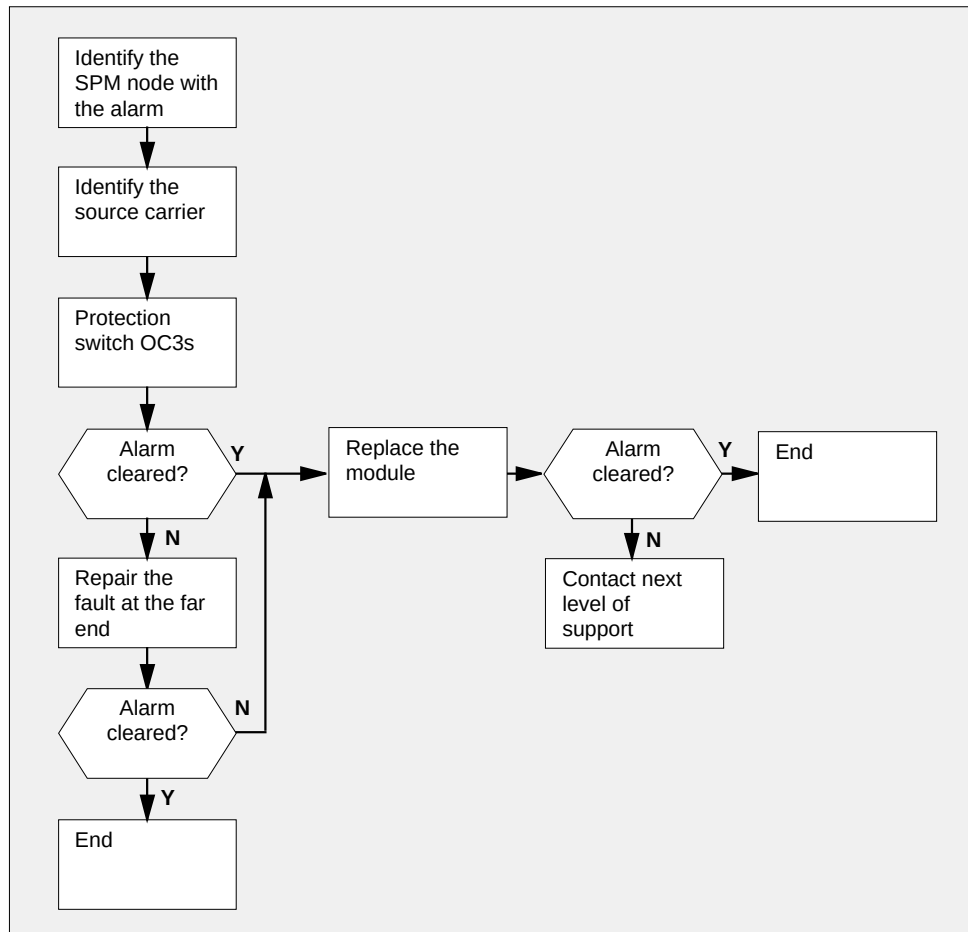
See "Accessing SPM alarms."

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing a BERSD alarm

TRKS 62TG BERSD SPM minor (continued)



Clearing a BERSD alarm

At the MAP terminal

- 1 Access the carrier level of the MAP screen by typing
> MAPCI;MTC;TRKS;CARRIER
 and pressing the Enter key.

Example of a MAP screen:

TRKS 62TG BERSD SPM**minor** (continued)

CLASS	ML	OS	ALRM	SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	1	0	28	28	0	0	0	0	0	50
TIMING	0	0	0	0	0	0	0	0	0	2
HSCARR	0	0	0	1	3	0	1	0	0	180

MTC:
 TRKS:
 CARRIER:

- 2** Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

PM	NO	CKT	PM	NO	CKT	PM	NO	CKT	PM	NO	CKT
DTC	0	13	DTC	0	14	DTC	0	15	DTC	0	18
SPM	20	29	SPM	20	30	SPM	20	31	SPM	20	32

DISPLAYED BY CONDITION : ALARM
 DISP:
 MORE...

- 3** Record the SPM number (NO) and circuit (CKT) number combinations.

- 4** Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no

refers to number of the SPM (0 to 63)

Example of a MAP screen:

TRKS 62TG BERSD SPM minor (continued)

		SysB	ManB	OffL	CBsy	ISTb	InSv
PM		7	2	2	2	9	16
SPM		0	2	1	0	0	0

SPM 20 **InSv** Loc: Site HOST Floor 1 Row A FrPos 13

Shlf0	SL	A	Stat	Shlf0	SL	A	Stat	Shlf1	SL	A	Stat	Shlf1	SL	A	Stat
-----	1	-	----	CEM 1	8	I	InSv	-----	1	-	----	-----	8	-	----
-----	2	-	----	OC3 0	9	A	InSv	-----	2	-	----	-----	9	-	----
DSP 3	3	I	InSv	OC3 1	10	I	InSv	-----	3	-	----	-----	10	-	----
-----	4	-	----	-----	11	-	----	-----	4	-	----	-----	11	-	----
-----	5	-	----	DSP12	12	A	InSv	-----	5	-	----	-----	12	-	----
-----	6	-	----	DSP13	13	A	InSv	-----	6	-	----	-----	13	-	----
CEM 0	7	A	InSv	-----	14	A	InSv	-----	7	-	----	-----	14	-	----

- 5 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no

is the number of the OC3 module (0 to 27)

Example of a MAP screen:

SPM 20 OC3 1 Act InSv

Loc : Row E FrPos 8 ShPos 24 ShId 0 Slot 10 Prot Grp : 1
Default Load: SPMLoad Prot Role: Spare

- 6 Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

- 7 Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no

is the number (0 to 27) of the module with the alarm.

to_unit_no

is the number (0 to 27) of the inactive module in the same protection group

TRKS 62TG BERSD SPM
minor (continued)

Example of a MAP screen:

SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.

- 8 Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

where

carrier_no

is the number of the carrier (0 to 4)

- 9 Determine whether the alarm has cleared.

If the alarm list shows	Do
BERSD	step 12
None	step 10

- 10 Replace the OC3 module. For detailed instructions, see "SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you complete the card replacement procedure, return to this point.

- 11 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

If the alarm list shows	Do
None	step 15
BERSD	step 14

- 12 Troubleshoot the carrier circuit according to your company procedures. When you complete the troubleshooting procedure, return to this point.

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits.

- 13 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

If the alarm list shows	Do
None	step 15

TRKS 62TG BERSD SPM
minor (end)

If the alarm list shows	Do
BERSD	step 14

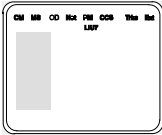
- 14** For further assistance, contact the personnel responsible for the next level of support.
- 15** You have completed this procedure. Return to the CI level of the MAP screen by typing

>QUIT ALL

and pressing the Enter key.

TRKS 62TG LOP SPM
minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks 62TG.	Ext	APPL
	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.

Indication

At the carrier level of the MAP display, a TG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a loss of pointer (LOP). The SPM generates the LOP alarm when an unbroken sequence of frames with invalid pointers is detected for a duration of 2.5 s. The SPM clears the alarm when valid pointers are detected for 10 s.

Logs CARR300 and CARR310 relate to the LOP alarm. Table MNHSCARR contains datafill related to the LOP alarm.

Impact

Service is not affected.

The LOF alarm generates for the STS-1P and VT1.5P carrier types.

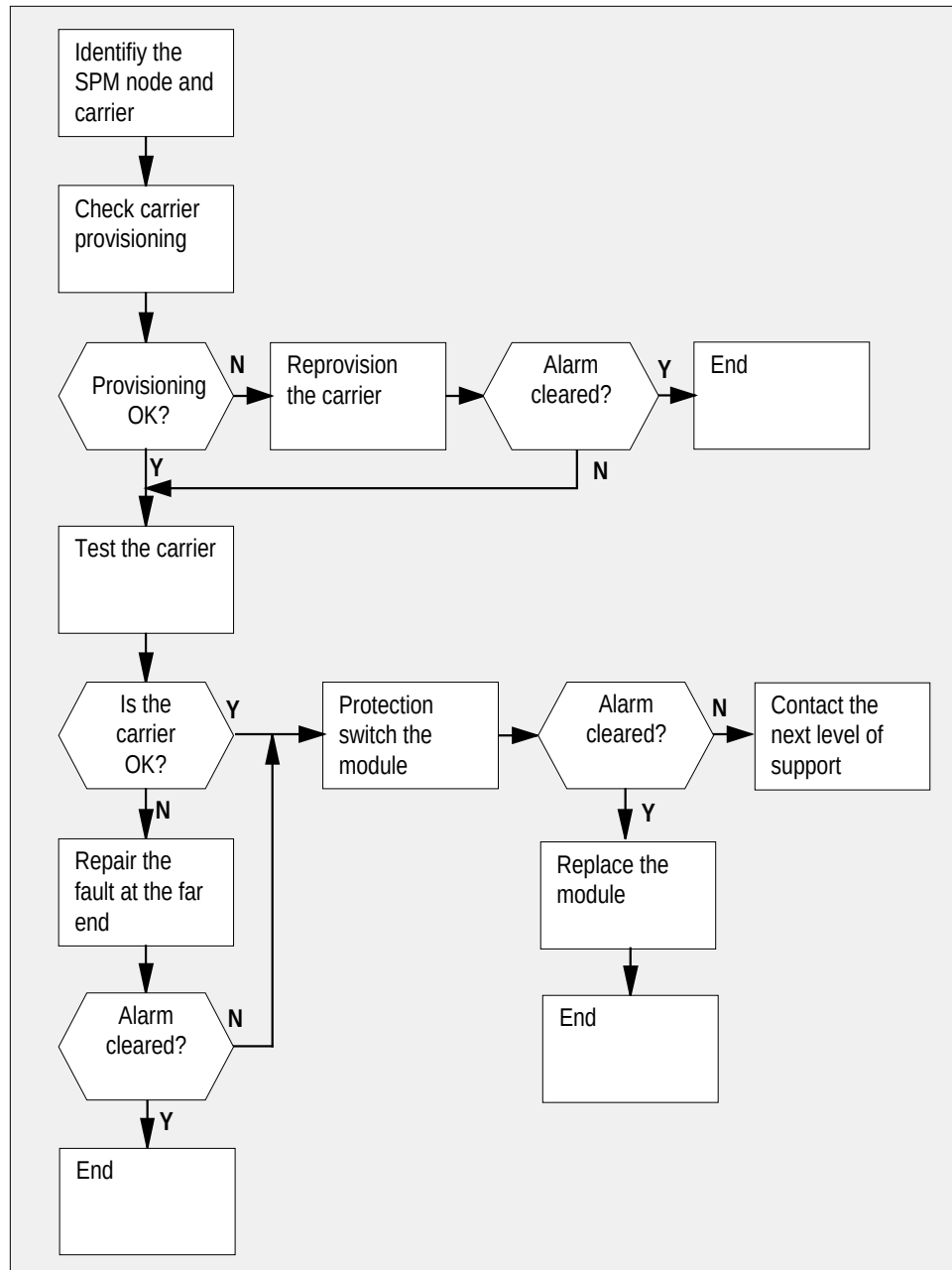
Common procedures

See “Accessing SPM alarms.”

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing an LOP alarm

**TRKS 62TG LOP SPM
minor (continued)**

TRKS 62TG LOP SPM

minor (continued)

Clearing an LOP alarm

At the MAP terminal

- 1 Access the carrier level of the MAP screen by typing

> MAPCI;MTC;TRKS;CARRIER

and pressing the Enter key.

Example of a MAP screen:

CLASS	ML	OS	ALRM	SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	1	0	28	28	0	0	0	0	0	50
TIMING	0	0	0	0	0	0	0	0	0	2
HSCARR	0	0	0	1	3	0	1	0	0	180

MTC:

TRKS:

CARRIER:

- 2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

PM	NO	CKT	PM	NO	CKT	PM	NO	CKT	PM	NO	CKT
DTC	0	13	DTC	0	14	DTC	0	15	DTC	0	18
SPM	20	29	SPM	20	30	SPM	20	31	SPM	20	32

DISPLAYED BY CONDITION : ALARM

DISP:

MORE...

- 3 Record the SPM number (NO) and circuit (CKT) number combinations.
- 4 Determine whether the carrier provisioning is correct. Confirm that the carrier has been provisioned with STS-1P or VT15P signal types by verifying the datafill for the carrier in table MNHSCARR and related tables. For more information about table MNHSCARR, refer to the *Data Schema Reference Manual* or the data schema section of the *Translation Guide*, as appropriate.

If the signal type is	Do
STS-1P or VT15P	step 8

TRKS 62TG LOP SPM minor (continued)

If the signal type is	Do
not STS-1P or VT15P	step 5

- 5 Datafill the correct carrier signal types in table MNHSCARR. For datafill information, refer to the *Data Schema Reference Manual* or the data schema section of the *Translation Guide*, as appropriate.

- 6 Post each SPM carrier circuit with an alarm by typing

>POST SPM spm_no ckt_no

and pressing the Enter key.

where

spm_no

is the number of the SPM (0 to 63)

ckt_no

is the number of the circuit (0 to 181)

Example of a MAP screen:

```

STS1P
N  CLASS  SITE SPM STS1P  DS3P VT15P  DS1P CKT STATE  MA
0  HSCARR HOST 20      2    -    -    -   33 InSv  --

```

SIZE OF POSTED SET : 30

MORE...

- 7 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

where

carrier_no

is the number of the carrier (0 to 4)

If the alarm list shows	Do
None	step 21
LOF	step 8

- 8 Test the carrier by typing

>TST carrier_no

and pressing the Enter key.

where

TRKS 62TG LOP SPM**minor** (continued)**carrier_no**

is the number of the carrier (0 to 4)

- 9 Determine whether the carrier signal is valid.

If the test result is	Do
OK	step 12
Test failed.	step 10

- 10 Troubleshoot the carrier circuit according to your company procedures. When you have completed the procedure, return to this point.

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits.

- 11 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

where

carrier_no

is the number of the carrier (0 to 4)

If the alarm list shows	Do
None	step 21
LOF	step 12

- 12 Type

> MAPCI;MTC;PM

and press the Enter key.

Example of a MAP screen:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	1	1	1	3	2	12

- 13 Post the SPMs by typing

> POST SPm spm_no

and pressing the Enter key.

where

spm_no

refers to number of the SPM (0 to 63)

Example of a MAP screen:

TRKS 62TG LOP SPM minor (continued)

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	7	2	2	2	9	16
SPM	0	2	1	0	0	0

SPM 20 **InSv** Loc: Site HOST Floor 1 Row A FrPos 13

Shlf0	SL	A	Stat	Shlf0	SL	A	Stat	Shlf1	SL	A	Stat	Shlf1	SL	A	Stat
-----	1	-	----	CEM 1	8	I	InSv	-----	1	-	----	-----	8	-	----
-----	2	-	----	OC3 0	9	A	InSv	-----	2	-	----	-----	9	-	----
DSP 3	3	I	InSv	OC3 1	10	I	InSv	-----	3	-	----	-----	10	-	----
-----	4	-	----	-----	11	-	----	-----	4	-	----	-----	11	-	----
-----	5	-	----	DSP12	12	A	InSv	-----	5	-	----	-----	12	-	----
-----	6	-	----	DSP13	13	A	InSv	-----	6	-	----	-----	13	-	----
CEM 0	7	A	InSv	-----	14	A	InSv	-----	7	-	----	-----	14	-	----

- 14 Select the active OC3 module by typing

> **SELECT OC3 module_no**

and pressing the Enter key.

where

module_no

is the number of the OC3 module (0 to 27)

Example of a MAP screen:

```
SPM 20      OC3 1      Act InSv

Loc : Row E  FrPos 8 ShPos 24 ShId 0 Slot 10  Prot Grp : 1
Default Load: SPMLoad                      Prot Role: Spare
```

- 15 Access the protection level of the MAP screen by typing

> **PROT**

and pressing the Enter key.

- 16 Do a manual protection switch with a module in the same protection group by typing

> **MANUAL from_unit_no to_unit_no**

and pressing the Enter key.

where

from_unit_no

is the number (0 to 27) of the module with the alarm.

to_unit_no

is the number (0 to 27) of the inactive module in the same protection group

TRKS 62TG LOP SPM

minor (end)

Example of a MAP screen:

SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.

- 17** Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

> LISTALM carrier_no

and pressing the Enter key.

- 18** Determine whether the alarm has cleared.

If the alarm list shows	Do
LOF	step 20
None	step 19

- 19** Replace the OC3 module. For detailed instructions, see "SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you have completed the procedure, go to Step 21.

- 20** For further assistance, contact the personnel responsible for the next level of support.

- 21** You have completed this procedure. Return to the CI level of the MAP screen by typing

> QUIT ALL

and pressing the Enter key.

TRKS 62TG RAI SPM
minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	62TG	.	.
	.	.	.	.	.	.	.		.	.

Indication

At the carrier level of the MAP display, a TG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a remote alarm indication (RAI). The SPM generates the RAI alarm when an unbroken sequence of frames with RAI signals is detected for a duration of 2.5 s. The SPM clears the alarm when an RAI is not detected for 10 s.

Logs CARR300 and CARR310 relate to the RAI alarm. Table MNHSCARR contains datafill related to the RAI alarm.

Impact

- Service is not affected.
- The RAI alarm applies to DS-1P and DS-3P carrier types.

Common procedures

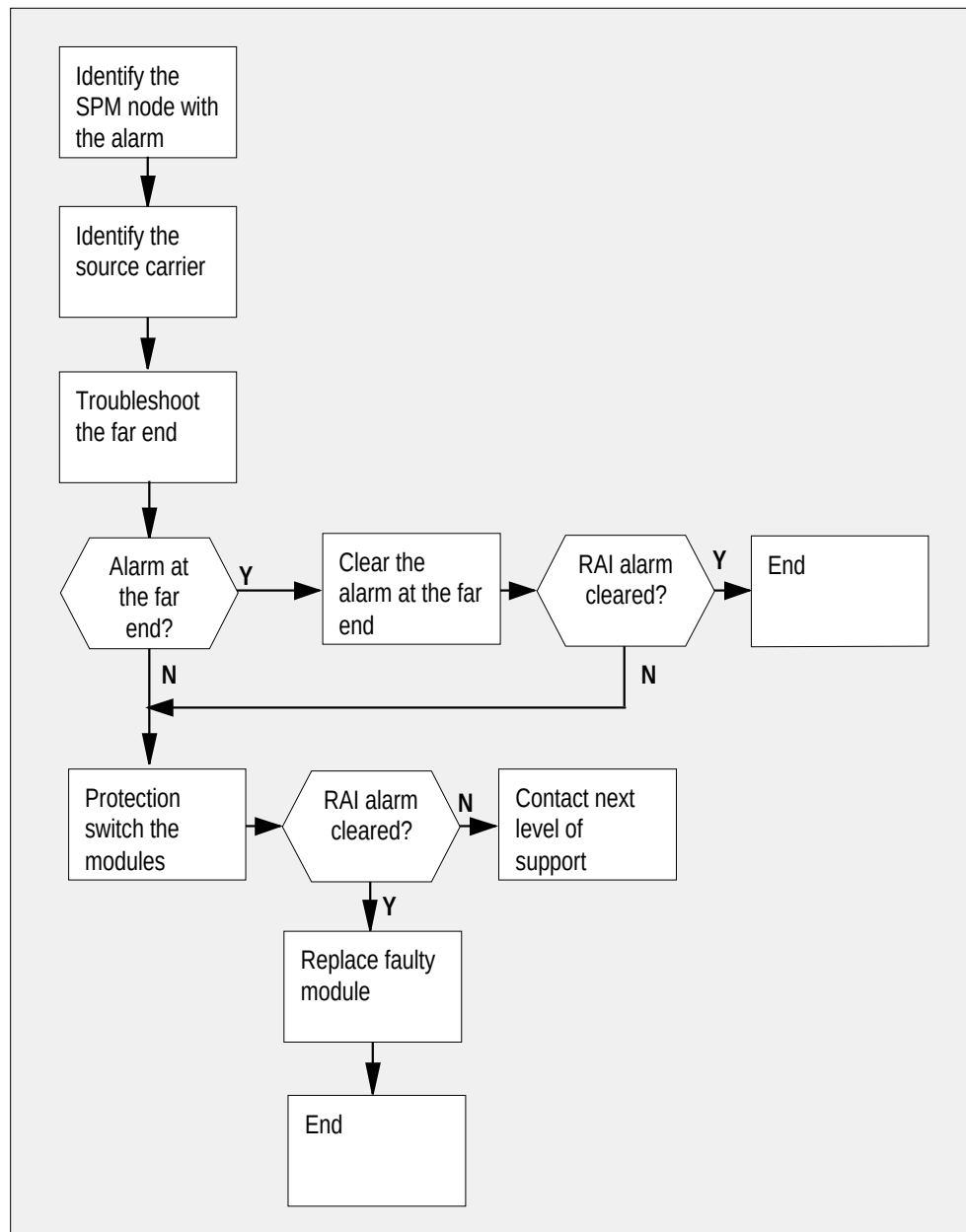
See “Accessing SPM alarms.”

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing an RAI alarm

TRKS 62TG RAI SPM minor (continued)



TRKS 62TG RAI SPM minor (continued)

Clearing an RAI alarm

At the MAP terminal

- 1 Access the carrier level of the MAP screen by typing

> MAPCI;MTC;TRKS;CARRIER

and pressing the Enter key.

Example of a MAP screen:

CLASS	ML	OS	ALRM	SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	1	0	28	28	0	0	0	0	0	50
TIMING	0	0	0	0	0	0	0	0	0	2
HSCARR	0	0	0	1	3	0	1	0	0	180

MTC:

TRKS:

CARRIER:

- 2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

PM	NO	CKT	PM	NO	CKT	PM	NO	CKT	PM	NO	CKT
DTC	0	13	DTC	0	14	DTC	0	15	DTC	0	18
SPM	20	29	SPM	20	30	SPM	20	31	SPM	20	32

DISPLAYED BY CONDITION : ALARM

DISP:

MORE...

- 3 Record the SPM number (NO) and circuit (CKT) number combinations.
- 4 Post each SPM carrier circuit with an alarm by typing

>POST SPM spm_no ckt_no

and pressing the Enter key.

where

TRKS 62TG RAI SPM minor (continued)

spm_no
is the number of the SPM (0 to 63)

ckt_no
is the number of the circuit (0 to 181)

Example of a MAP screen:

```
STS1P
N  CLASS  SITE  SPM  STS1P  DS3P  VT15P  DS1P  CKT  STATE  MA
0  HSCARR  HOST  20    2      -    -      -   33  InSv  --
```

SIZE OF POSTED SET : 30

MORE...

- 5 Troubleshoot the carrier circuit according to your company procedures.
Determine whether there is an alarm on the far-end device.

If there is an alarm on the far-end device?	Do
YES	Clear the alarm according to your company's procedures. When you have completed the procedure, return to this point.
NO	step 7

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits and clear alarms at the far end.

At the MAP terminal

- 6 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

where

carrier_no
is the number of the carrier (0 to 4)

If the alarm list shows	Do
None	step 16
RAI	step 7

TRKS 62TG RAI SPM minor (continued)

- 7 Access the PM level of the MAP screen by typing

>MAPCI;MTC;PM

and pressing the Enter key.

Example of a MAP screen:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	1	1	1	3	2	12

- 8 Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no

refers to number of the SPM (0 to 63)

Example of a MAP screen:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	7	2	2	2	9	16
SPM	0	2	1	0	0	0

SPM 20 InSv Loc: Site HOST Floor 1 Row A FrPos 13

Shlf0	SL	A	Stat	Shlf0	SL	A	Stat	Shlf1	SL	A	Stat	Shlf1	SL	A	Stat
----	1	-	----	CEM 1	8	I	InSv	----	1	-	----	----	8	-	----
----	2	-	----	OC3 0	9	A	InSv	----	2	-	----	----	9	-	----
DSP 3	3	I	InSv	OC3 1	10	I	InSv	----	3	-	----	----	10	-	----
----	4	-	----	----	11	-	----	----	4	-	----	----	11	-	----
----	5	-	----	DSP12	12	A	InSv	----	5	-	----	----	12	-	----
----	6	-	----	DSP13	13	A	InSv	----	6	-	----	----	13	-	----
CEM 0	7	A	InSv	----	14	A	InSv	----	7	-	----	----	14	-	----

- 9 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no

is the number of the OC3 module (0 to 27)

TRKS 62TG RAI SPM minor (continued)

Example of a MAP screen:

```
SPM 20    OC3 1      Act  InSv

Loc : Row E  FrPos  8 ShPos 24 ShId 0 Slot 10  Prot Grp : 1
Default Load: SPMLOAD                      Prot Role: Spare
```

- 10** Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

- 11** Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no

is the number (0 to 27) of the module with the alarm

to_unit_no

is the number (0 to 27) of the inactive module in the same protection group

Example of a MAP screen:

```
SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.
```

- 12** Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

- 13** Determine whether the alarm has cleared.

If the alarm list shows	Do
RAI	step 15
None	step 14

TRKS 62TG RAI SPM
minor (end)

- 14** Replace the OC3 module. For detailed instructions, see "SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you have completed the procedure, go to Step 16.
- 15** For further assistance, contact the personnel responsible for the next level of support.
- 16** You have completed this procedure. Return to the CI level of the MAP screen by typing

>QUIT ALL

and pressing the Enter key.

TRKS 62TG RFI SPM
minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks 62TG.	Ext	APPL
	.	.	.	.		.	.	.	.	.
	.		.	.		.	.	.	.	.

Indication

At the carrier level of the MAP display, a TG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a remote failure indication (RFI). The SPM system generates the RFI alarm when an unbroken sequence of frames with RFI signals is detected for a duration of 2.5 s. The SPM system clears the alarm when an RFI is not detected for 10 s.

Logs CARR300 and CARR310 relate to the RFI alarm. Table MNHSCARR contains datafill related to the RFI alarm.

Impact

Service is not affected.

The RFI alarm applies to the following carrier types:

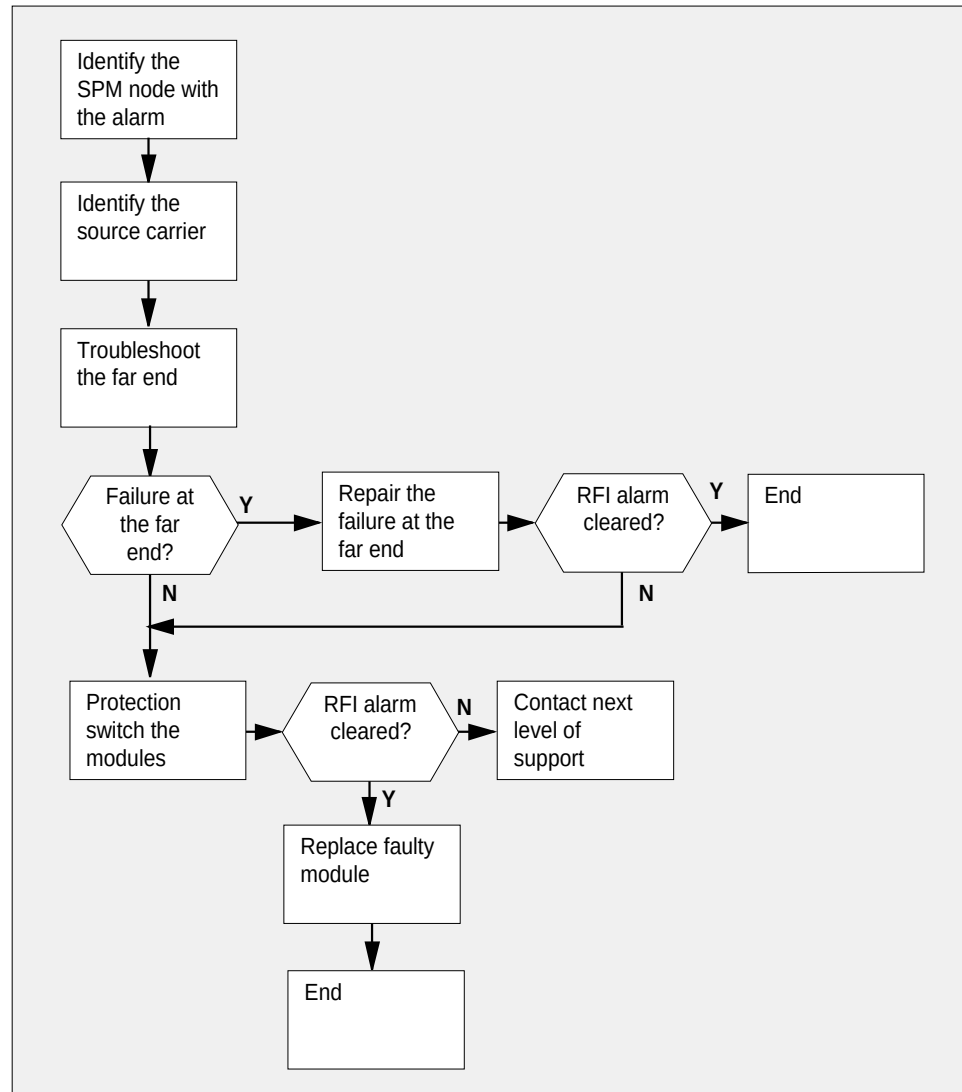
- STS-3P
- STS-1P
- VT-1.5P

Common procedures

See “Accessing SPM alarms.”

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

TRKS 62TG RFI SPM
minor (continued)

TRKS 62TG RFI SPM

minor (continued)

Clearing an RFI alarm

At the MAP terminal

- 1 Access the carrier level of the MAP screen by typing

> MAPCI;MTC;TRKS;CARRIER

and pressing the Enter key.

Example of a MAP screen:

CLASS	ML	OS	ALRM	SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	1	0	28	28	0	0	0	0	0	50
TIMING	0	0	0	0	0	0	0	0	0	2
HSCARR	0	0	0	1	3	0	1	0	0	180

MTC:

TRKS:

CARRIER:

- 2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

PM	NO	CKT	PM	NO	CKT	PM	NO	CKT	PM	NO	CKT
DTC	0	13	DTC	0	14	DTC	0	15	DTC	0	18
SPM	20	29	SPM	20	30	SPM	20	31	SPM	20	32

DISPLAYED BY CONDITION : ALARM

DISP:

MORE...

- 3 Record the SPM number (NO) and circuit (CKT) number combinations.
- 4 Post each SPM carrier circuit with an alarm by typing

>POST SPM spm_no ckt_no

and pressing the Enter key.

where

spm_no

is the number of the SPM (0 to 63)

TRKS 62TG RFI SPM minor (continued)

ckt_no

is the number of the circuit (0 to 181)

Example of a MAP screen:

```
STS1P
N  CLASS  SITE  SPM  STS1P  DS3P  VT15P  DS1P  CKT  STATE  MA
0  HSCARR  HOST  20    2    -    -    -   33  InSv  --
```

SIZE OF POSTED SET : 30

MORE...

- 5 Troubleshoot the carrier circuit according to your company procedures.
Determine if there is a failure of the far-end device.

If there is a failure at the far-end	Do
YES	Repair the failure of the far-end device according to your company procedures. When you have completed the procedure, return to this point.
NO	step 7

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits and repair the far-end devices.

- 6 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

where

carrier_no

is the number of the carrier (0 to 4)

If the alarm list shows	Do
None	step
RFI	step 7

- 7 Access the PM level of the MAP screen by typing

>MAPCI ; MTC ; PM

and pressing the Enter key.

TRKS 62TG RFI SPM minor (continued)

Example of a MAP screen:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	1	1	1	3	2	12

- 8 Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no

refers to number of the SPM (0 to 63)

Example of a MAP screen:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	7	2	2	2	9	16
SPM	0	2	1	0	0	0

SPM 20 **InSv** Loc: Site HOST Floor 1 Row A FrPos 13

Shlf0	SL	A	Stat	Shlf0	SL	A	Stat	Shlf1	SL	A	Stat	Shlf1	SL	A	Stat
-----	1	-	----	CEM 1	8	I	InSv	-----	1	-	----	-----	8	-	----
-----	2	-	----	OC3 0	9	A	InSv	-----	2	-	----	-----	9	-	----
DSP 3	3	I	InSv	OC3 1	10	I	InSv	-----	3	-	----	-----	10	-	----
-----	4	-	----	-----	11	-	----	-----	4	-	----	-----	11	-	----
-----	5	-	----	DSP12	12	A	InSv	-----	5	-	----	-----	12	-	----
-----	6	-	----	DSP13	13	A	InSv	-----	6	-	----	-----	13	-	----
CEM 0	7	A	InSv	-----	14	A	InSv	-----	7	-	----	-----	14	-	----

- 9 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no

is the number of the OC3 module (0 to 27)

Example of a MAP screen:

SPM 20	OC3 1	Act	InSv

Loc :	Row E	FrPos 8	ShPos 24	ShId 0	Slot 10	Prot Grp : 1
Default Load:	SPMLoad					Prot Role: Spare

TRKS 62TG RFI SPM minor (continued)

- 10** Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

- 11** Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no

is the number (0 to 27) of the module with the alarm

to_unit_no

is the number (0 to 27) of the inactive module in the same protection group

Example of a MAP screen:

SPM 20 OC3 1 Manual: Request has been submitted.

SPM 20 OC3 0 Manual: Command completed.

- 12** Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

- 13** Determine whether the alarm has cleared.

If the alarm list shows	Do
RFI	step 15
None	step 14

- 14** Replace the OC3 module. For detailed instructions, see "SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you have completed the procedure, go to Step 16.

- 15** For further assistance, contact the personnel responsible for the next level of support.

TRKS 62TG RFI SPM

minor (end)

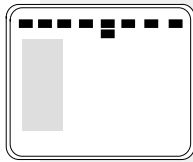
- 16** You have completed this procedure. Return to the CI level of the MAP screen by typing

>QUIT ALL

and pressing the Enter key.

Trks C minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	.	.	.	C	.	.

Indication

At the MTC level of the MAP display, C appears under the Trks header of the alarm banner. The C indicates a carrier (C) alarm.

Meaning

A minimum of one carrier is system busy and trunk group alarms are not present. The system busy carriers are out of service.

Carrier alarms include the following alarm types:

- AIS, AIS16
- BER, BPVTX, BPVRX
- CARD, CLKTX, CLKRX, CRC4, CRE
- DIAG
- LOS (see Note)
- LLFA, LLMA, LLCMA, RFAI, RMAI
- SLIPTX, SLIPRX

Note: The Loss Of Signal (LOS) alarm detection, as required by ITU-T Recommendation G.775, is supported by PMs DTCO2 and DTCO2i. These PMs have NTMX82CA cards which are designed to generate both LOS and RFAI alarms when a carrier is disconnected or is physically broken.

Result

The result of a C alarm depends on the following:

- the type of carrier
- the amount of traffic
- the alarm threshold set in Table TRKMTCE

Trks C

minor (continued)

Common procedures

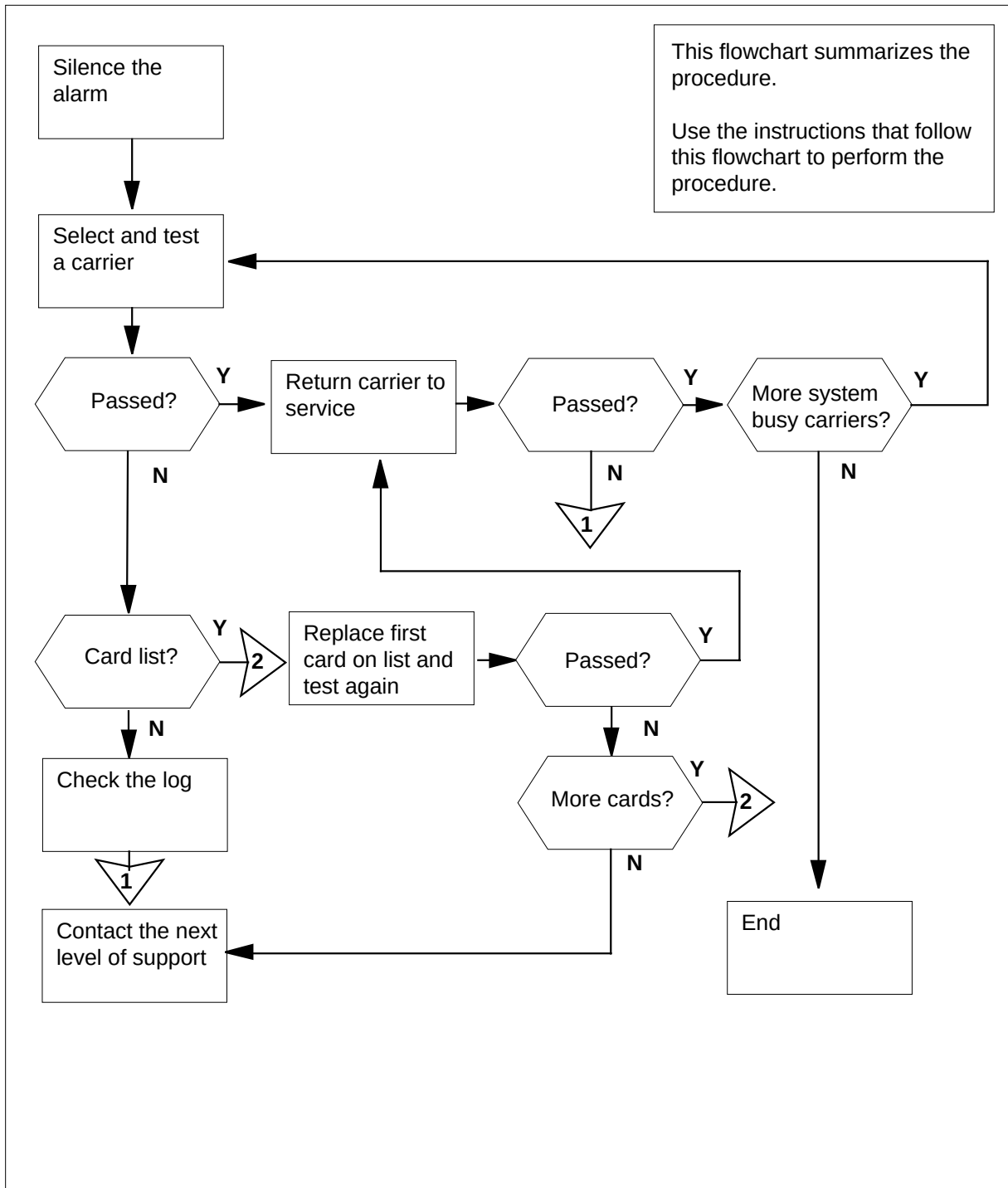
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks C minor (continued)

Summary of clearing a Trks C minor alarm



Trks C minor (continued)

Clearing a Trks C minor alarm

At the MAP terminal

- 1 To access the CARRIER level of the MAP display and silence the alarm, type
>MAPCI;MTC;TRKS;CARRIER;SIL
and press the Enter key.

Example of a MAP response:

CLASS	ML	OS	ALARM	SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	0	3	7	5	0	0	0	58	0	8
REMOTE	0	0	0	0	0	0	0	6	6	0
TIMING	0	1	1	0	0	0	0	1	0	1

- 2 To post all system busy carriers, type
>POST SYSB
and press the Enter key.

Example of a MAP response:

CLASS	ML	OS	ALARM	SYSB	MANB	UNEQ	OFFL	CBSY	PBSY	INSV
TRUNKS	21	7	28	5	2	0	28	11	0	45
REMOTE	0	0	0	0	0	0	0	4	16	4
TIMING	1	0	1	0	0	0	1	0	0	1

DS1

N	CLASS	SITE	LTC	CK	D	ALRM	SLIP	FRME	BER	ES	SES	STATE
0	TRUNKS	HOST	4	1	C	LCGA	0	0-6.3	0	0	SYSB-T	
1	TRUNKS	HOST	4	2	C	LCGA	0	0-6.3	0	0	SYSB-T	
2	TRUNKS	HOST	4	4	C	LCGA	0	0-6.3	0	0	SYSB-T	
3	TRUNKS	HOST	4	5	C	LCGA	0	0-6.3	0	0	SYSB-T	
4	TRUNKS	HOST	4	6	C	LCGA	0	0-6.3	0	0	SYSB-T	

- 3 Record the carriers that appear under the N column from the MAP display example in step 2.
- 4 Select a carrier from the posted set.
- 5 To manually busy the first carrier in the posted set, type
>BSY carrier_no
and press the Enter key.

where

carrier_no

is the carrier number (0 to 4) selected from the posted set

MAP response:

OK

- 6 To test the carrier, type
>TST carrier_no

Trks C minor (continued)

and press the Enter key.

where

carrier_no

is the carrier number (0 to 4) selected from the posted set

Example of a MAP response:

```
Carrier test failed.
MLNR35AT***+ TRK109 May19 11:43:19 3400 FAIL
PM:LTC NO 4 CCT 1
ERROR:ALARM:C-SIDE
ACTION:CHEK ALARMS
CARD:NIL
```

If the TST command	Do
passed	step 10
failed, and the system generated a card list	step 8
fails, and the system did not generate a card list	step 7

- 7 The system generated a log. Record the information in the log and go to step 13.
- 8 Record the location, description, slot number, product engineering code (PEC) and PEC suffix of all the cards on the list.
- 9 Perform the correct procedure in *Card Replacement Procedures* to replace the first card on the list. Complete the procedure and go to step 11.
- 10 To return the carrier to service, type
>RTS

and press the Enter key.

Example of a MAP response:

```
FAILED TO DO
```

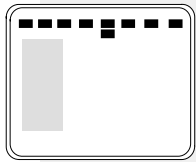
If the RTS command	Do
passed	step 11
failed	step 13

Trks C minor (end)

11	Determine from the list that you recorded in step 3 if more system busy (SysB) carriers are present.
If more SysB carriers	Do
are present	step 4
are not present	step 12
12	Check the status of the alarm banner under TRKS to determine if the C alarm cleared.
If the C alarm	Do
cleared	step 14
did not clear	step 13
13	For additional help, contact the next level of support.
14	The procedure is complete.

Trks CB critical, major, or minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	9CB	.	.

Indication

At the MTC level of the MAP display, CB (preceded by a number) appears under the Trks header of the alarm banner. The CB indicates a carrier busy (CB) critical, major, or minor alarm.

Meaning

One or more trunks in a trunk group is manual busy. One or more carriers is system busy. The system busy carriers and the manual-busy trunks are removed from service.

The number under the Trks header in the alarm banner indicates the number of affected CB trunks.

- For a critical alarm, *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, the area under the alarm indicator is blank.

Arrival at the critical alarm threshold set in Table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in Table TRKMTCE raises a major alarm. Arrival at the minor alarm threshold set in Table TRKMTCE raises a minor alarm.

Result

The result of a CB alarm depends on the following:

- the type of carrier
- the type of trunk
- the type and size of the trunk group
- the amount of traffic at the time
- the correct critical, major, and minor alarm thresholds in Table TRKMTCE for the trunk group(s)

Trks CB
critical, major, or minor (continued)

Common procedures

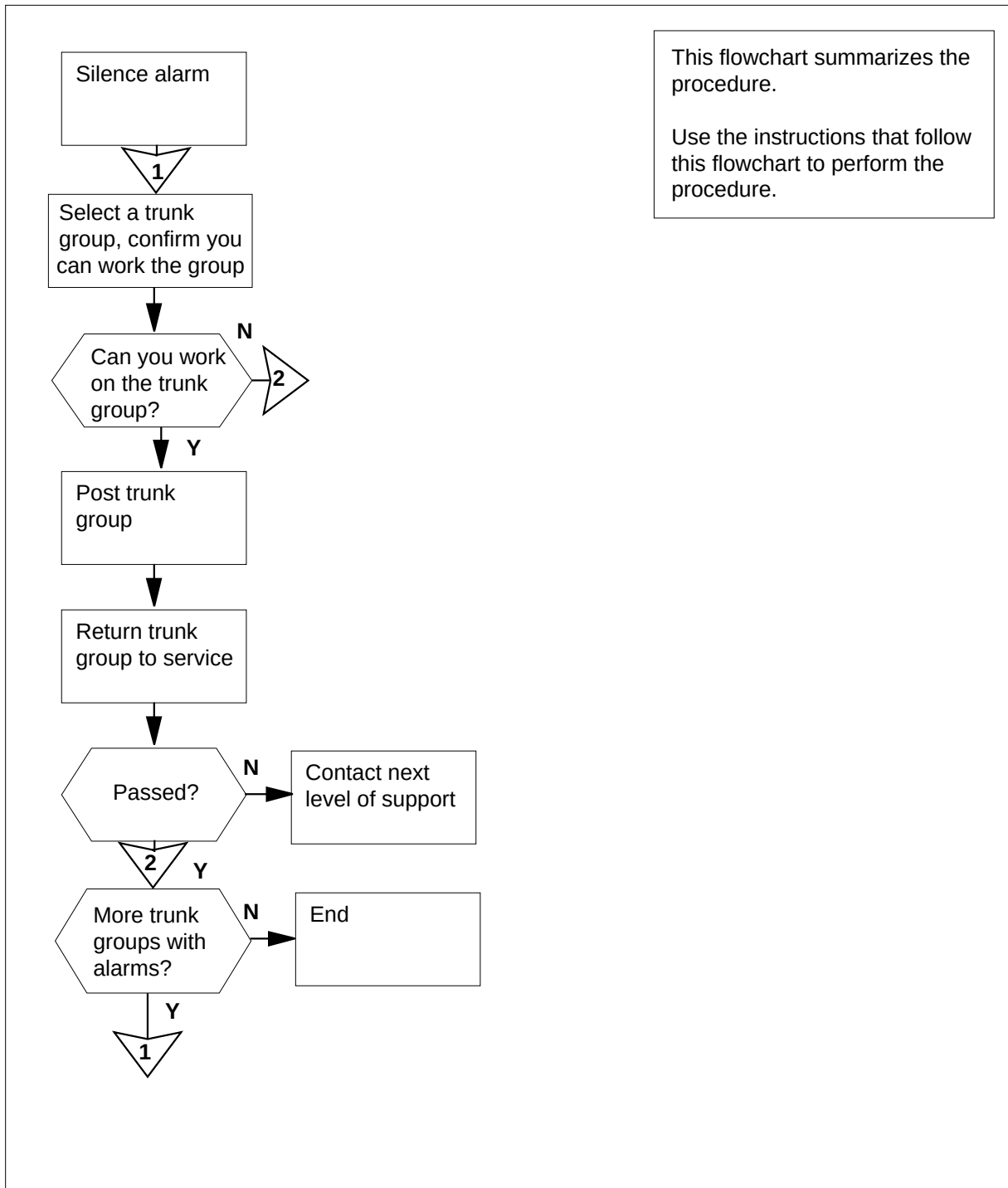
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CB critical, major, or minor (continued)

Summary of clearing a Trks CB critical, major, or minor alarm



Trks CB critical, major, or minor (continued)

Clearing a Trks CB critical, major, or minor alarm

At the MAP terminal

- 1 To access the STAT level of the MAP terminal and silence the alarm, type
>MAPCI;MTC;TRKS;STAT;SIL
and press the Enter key.

Example of a MAP response:

	TWOWY		ITG		OTG		MISC	
	36GC		49GC		62GC		19GC	
ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
TRKS:								
STAT:								

- 2 To display details of all trunk groups with manual-busy circuits, type
>DISPGRP ALL MB
and press the Enter key.

Example of a MAP response:

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
0	MISC MB	DMODEMC	8 8	0	0	100		
1	IC MB	RSCITDP1	1	0	1	0	100	
2	OG MB	PDXP_RSC	1	0	1	0	100	

- 3 Record the trunk groups that appear under the TYPE heading in step 2.

- 4 To select the first trunk group on the list, type

>ITEM item_no

and press the Enter key.

where

item_no

is the item number of the trunk you want to work on, as

indicated in the far-left column of the MAP display in step 2

- 5 To display details of the trunk circuit in the selected group, type

>DISALM MB

and press the Enter key.

Example of a MAP response:

IC	MB	RSCITDP1	1	0	1	0	100		
PM	NO	TRMNL	CKTNO	STATE	PM	NO	TRMNL	CKTNO	STATE
RCC	0	9 11	0	MB					

Trks CB

critical, major, or minor (continued)

- 6 Maintenance personnel in your office can perform maintenance on the trunk or PMs related to the trunk at any time. Determine from other maintenance personnel in your office if you can return the trunk group to service.

If you**Do**

have permission to return the trunk group to service step 7

do not have permission to return the trunk group to service step 12

- 7 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP response:

```

POST          DELQ          BUSYQ          DIG
TTP  6-030
CKT TYPE      PM NO.        COM LANG      STA S R DOT TE  RESULT

```

```

TTP ID IS:  6-030
NO CKT, SET IS EMPTY

```

- 8 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name

is the name of the circuit that you must post, as indicated in the

MAP display in step 5. Circuit RSCITDP1 is an example of a

circuit.

Example of a MAP response:

```

LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK, CKT POSTED

```

- 9 To return this trunk group to service, type

>RTS ALL

and press the Enter key.

Example of a MAP response:

Trks CB

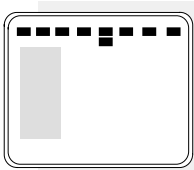
critical, major, or minor (end)

STATE CHANGED

		If the RTS command	Do
		passed	step 10
		failed	step 11
10	Determine from the list recorded in step 3 if you must return more trunk groups to service.		
		If more trunk groups to return to service	Do
		are present	step 8
		are not present	step 12
11	For additional help, contact the next level of support.		
12	The procedure is complete.		

**Trks CC
critical**

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks 2CC *C*	Ext	APPL
	.	.	.	.	.	.	.		.	.

Indication

At the MTC level of the MAP display, CC (preceded by a number) appears under the Trks header of the alarm banner. The CC indicates a carrier critical (CC) alarm.

Meaning

One or more trunk groups has a critical alarm. A minimum of one carrier is system busy.

The number under the Trks header in the alarm banner indicates the number of affected CC cards.

Result

The result of a CC alarm depends on the following:

- the type of carrier
- the type of trunk
- the type and size of the trunk group
- the amount of traffic at the time
- the alarm threshold set in Table TRKMTCE for the trunk group(s)

Common procedures

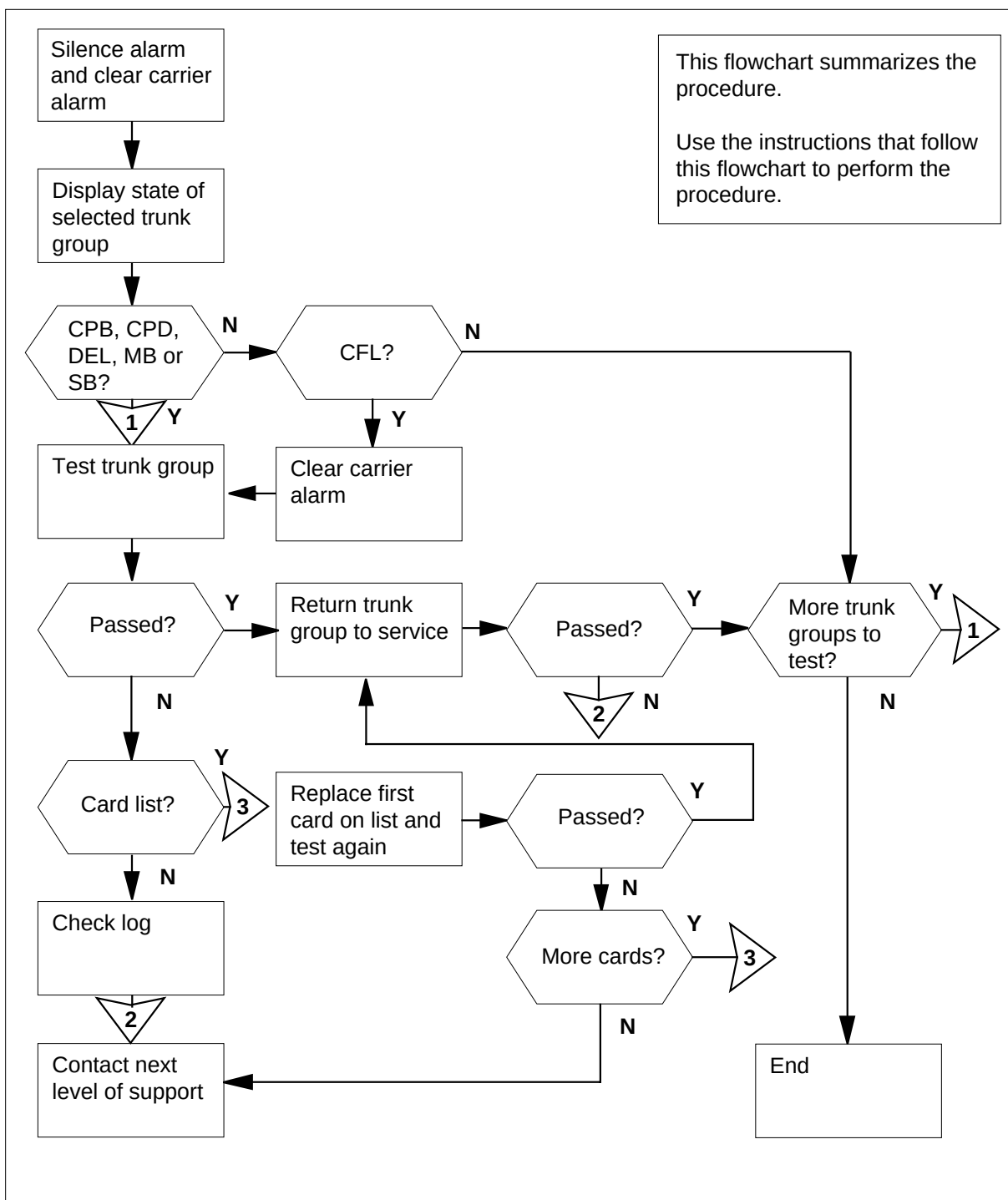
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CC critical (continued)

Summary of clearing a Trks CC critical alarm



Trks CC critical (continued)

Clearing a Trks CC critical alarm

At the MAP terminal

- 1 To access the STAT level of the MAP display and silence the alarm, type
>MAPCI;MTC;TRKS;STAT;SIL
and press the Enter key.

Example of a MAP response:

TWOWY	ITG	OTG	MISC					
36GC	49GC	62GC	19GC					

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
TRKS:								
STAT:								

- 2 To display details of all trunk groups with a critical alarm, type
>DISPGRP ALL GC
and press the Enter key.

Example of a MAP response:

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
0	MISC	GC	DMODEMC		8	8	0	0 100
1	IC GC		RSCITDP1	1	0	1	0	100
2	OG GC		PDXP_RSC	1	0	1	0	100

- 3 Record the trunk groups displayed in step 2.
- 4 To select a trunk group on which to work, type
>ITEM item _no
and press the Enter key.

where

item_no

is the item number of the trunk group on which you want to begin

work. The item number appears in the far-left column of the MAP

display in step 2

- 5 To display details of trunk circuits in the trunk group, type
>DISALM GC
and press the Enter key.

Example of a MAP response:

Trks CC critical (continued)

```

          IC    MB      RSCITDP1    1    0    1          0    100
PM NO   TRMNL   CKTNO STATE PM   NO   TRMNL   CKTNO   STATE
RCC 0    9 11      0    CFL

```

- 6 Record the name of the trunk group.

Note: The name of the trunk group appears in the top row of the display. An example of a trunk group name is RSCITCP1.

- 7 Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do
is CFL (carrier fail)	step 24
is CPD (call process deload)	step 11
is DEL (deload)	step 11
is IDL (idle)	step 21
is INB (installation busy)	step 21
is INI (initializing)	step 21
is LO (locked out)	step 8
is MB (manual busy)	step 11
is NEQ (not equipped)	step 21
is NMB (network management busy)	step 21
is PMB (peripheral module busy)	step 9
is RES (restricted)	step 21
is RMB (remote make busy)	step 10
is SB (system busy)	step 11
is SZD (seized)	step 21

- 8 The circuit is in a locked out state. Contact the far-end office to determine the cause of the circuit lock out. Make sure that the circuit returns to service. Go to step 21.

Trks CC critical (continued)

- 9** Perform the correct PM alarm clearing procedure in this document. Complete the procedure and return to this point.
Go to step 21.

- 10** Contact the far-end office to determine why the circuit is busy and to make sure that the circuit returns to service.
Go to step 21.

- 11** To access the TTP level of the MAP display, type
>TTP
and press the Enter key.

Example of a MAP response:

```
POST          DELQ          BUSYQ          DIG
TTP  6-030
CKT TYPE      PM NO.      COM LANG      STA S R  DOT TE  RESULT
```

```
TTP ID IS:  6-030
12 NEXT      NO CKT,SET IS EMPTY
```

- 12** To post the trunk group, type
>POST G trunk_name
and press the Enter key.

where

trunk_name

is the name of the circuit to post, as indicated in the MAP display in step 5. RSCITDP1 is an example of a circuit name

Example of a MAP response:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK,CKT POSTED
```

- 13** To manually busy the first trunk in the posted group, type
>BSY
and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

- 14** To test the trunk, type
>TST
and press the Enter key.

Trks CC critical (continued)

Example of a MAP response:

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
  CKT   RSCITDP1   1
  DIAGNOSTIC RESULT CONNECTION FAILURE
  ACTION REQUIRED TRY AGAIN
  CARD TYPE
  ERROR DETAILS:  NO MORE DETAILS
```

	If the TST command	Do
	passed	step 19
	failed, and the system generated a card list	step 16
	failed, and the system did not generate a card list	step 15
	failed, connection failure, refer to TRK107 log	step 14
15	The system generated a trunk 101 log. Record the information in the log. Go to step 25.	
16	Record the location, description, slot number, product engineering code (PEC) and PEC suffix of all the cards on the list.	
17	Perform the correct procedure in <i>Card Replacement Procedures</i> to replace the first card on the list. Complete the procedure and return to this point.	
18	To test the trunk, type >TST and press the Enter key.	

Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
  CKT   RSCITDP1   1
```

	If the TST command	Do
	passed	step 19
	failed, and cards remain on the list	step 17

Trks CC critical (continued)

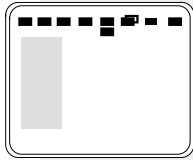
	If the TST command	Do
	failed, and cards do not remain on the list	step 25
19	To return the trunk to service, type >RTS and press the Enter key. <i>Example of a MAP response:</i> FAILED TO DO	
	If the RTS command	Do
	passed	step 20
	failed	step 25
20	To determine if more trunks in the posted trunk group that continue to have an alarm are present, type >NEXT and press the Enter key.	
	If more trunks that continue to have an alarm	Do
	are present	step 13
	are not present	step 21
21	Determine from the list you recorded in step 3 if more trunk groups with a critical alarm are present.	
	If more trunk groups with a critical alarm	Do
	are present	step 22
	are not present	step 26
22	To select the next trunk group, type >STAT and press the Enter key.	
23	Go to step 3.	
24	Clear the <i>Trks C Minor alarm</i> . Perform the correct procedure to clear the alarm.	

Trks CC
critical (end)

- 25 For additional help, contact the next level of support.
- 26 The procedure is complete.

Trks CE critical, major, or minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	2CE	.	.

Indication

At the MTC level of the MAP display, CE (preceded by a number) appears under the Trks header of the alarm banner. The CE indicates a carrier external (CE) critical, major, or minor alarm.

Meaning

One or more trunks in a trunk group is external busy. A minimum of one carrier is system busy. The external trunks and system busy carriers were removed from service.

The number under the Trks header in the alarm banner indicates the number of affected CE trunks.

- For a critical alarm, *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, the area under the alarm indicator is blank.

Arrival at the critical alarm threshold set in Table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in Table TRKMTCE raises a major alarm. Arrival at the minor alarm threshold set in Table TRKMTCE raises a minor alarm.

Result

The result of a CE alarm depends on the following:

- the type of carrier
- the type of trunk
- the amount of traffic at the time
- the correct critical, major, and minor alarm thresholds set in Table TRKMTCE for the trunk group(s)

Common procedures

There are no common procedures.

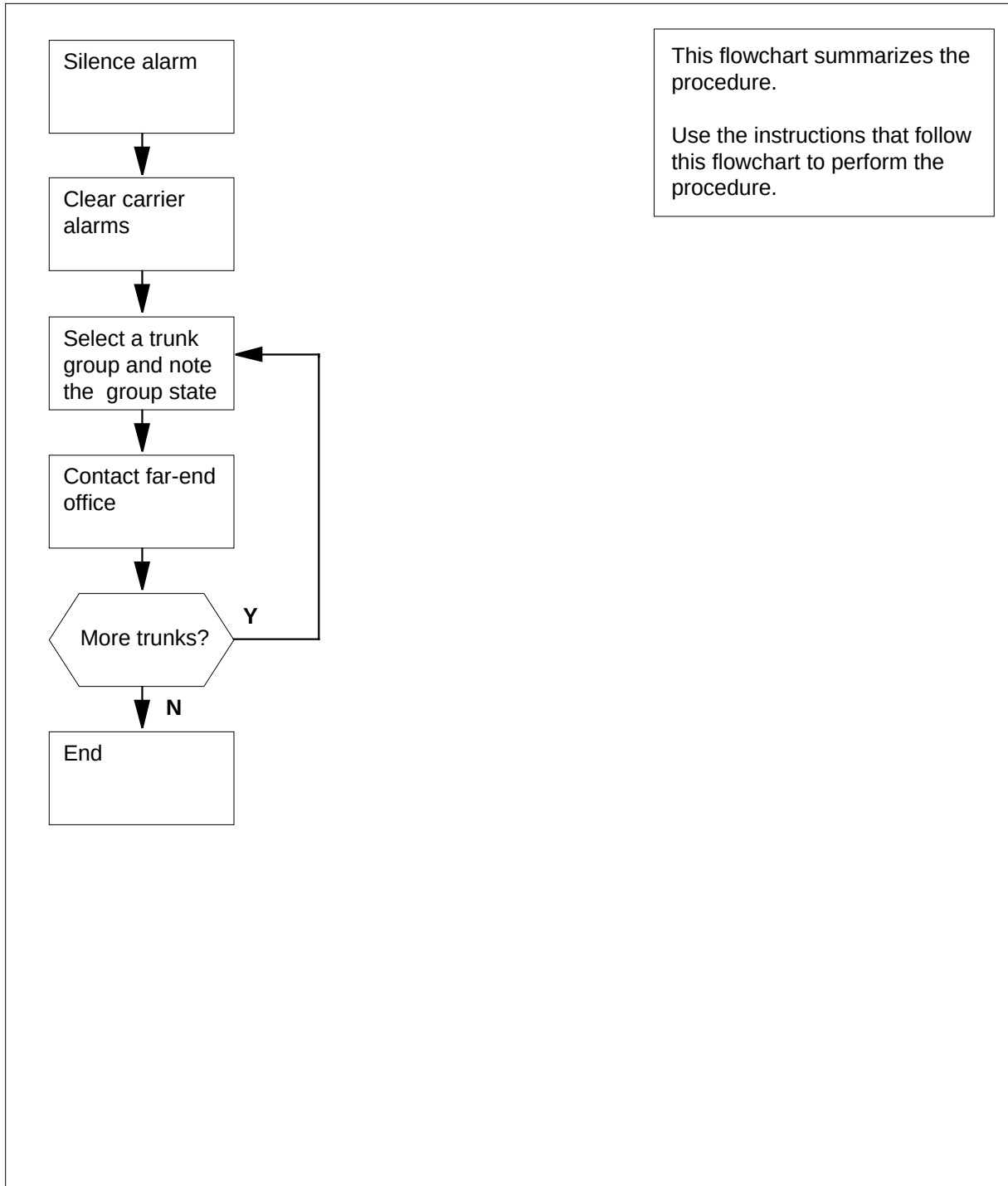
Trks CE
critical, major, or minor (continued)

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CE critical, major, or minor (continued)

Summary of clearing a Trks CE critical, major, or minor alarm



Trks CE critical, major, or minor (continued)

Clearing a Trks CE critical, major, or minor alarm

At the MAP terminal

- 1 To access the STAT level of the MAP display and silence the alarm, type
>MAPCI;MTC;TRKS;STAT;SIL
and press the Enter key.

Example of a MAP display:

TWOWY	ITG	OTG	MISC						
36GC	49GC	62GC	19GC						
ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS	
TRKS:									
STAT:									

- 2 To display details of all trunk groups with external busy circuits, type
>DISPGRP ALL EX
and press the Enter key.

Example of a MAP display:

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
0	MISC	EX	DMODEMC 8	8	0	0	100	
1	IC	EX	RSCITDP1	1	0	1	0	100
2	OG	EX	PDXP_RSC	1	0	1	0	100

- 3 Record the trunk groups displayed in step 2.
- 4 To select a trunk group on which to work and record the item number on the MAP display, type
>ITEM item_no
and press the Enter key.

where

item_no

is the item number of the trunk group on which you want to work.

The trunk group appears in the far-left column of the MAP display in

step 2

- 5 To display details of trunk circuits in the selected group, type
>DISALM EX
and press the Enter key.

Example of a MAP display:

Trks CE
critical, major, or minor (end)

```

      IC      MB      RSCITDP1      1      0      1      0      100
PM NO  TRMNL  CKTNO  STATE  PM  NO  TRMNL  CKTNO  STATE
RCC 0    9 11    0    LO

```

- 6** Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do

is RMB (remote make busy)	step 8

is LO (locked out)	step 7

- 7** The circuit is in a locked out state. Contact the far-end office to determine the cause of the circuit lock out. Make sure that the circuit returns to service.
Go to step 9.

- 8** Contact the far-end office to determine why the circuit is in a remote make busy state. Make sure that the circuit returns to service.

- 9** Determine from the list recorded in step 3 if more trunks with external busy circuits are present.

If more trunks with external busy circuits	Do

are present	step 4

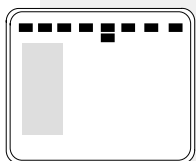
are not present	step 11

- 10** For additional help, contact the next level of support.

- 11** The procedure is complete.

Trks CG minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks 7CG	Ext	APPL
	.	.	.	.	.	.	.	.	.	.

Indication

At the MTC level of the MAP display, CG (preceded by a number) appears under the Trks header of the alarm banner. The CG indicates a carrier trunk group (CG) minor alarm.

Meaning

One or more trunk groups has a minor alarm. A minimum of one carrier is system busy.

The number under the Trks header in the alarm banner indicates the number of affected CG trunk groups.

Result

The result of a CG alarm depends on the following:

- the application and size of the trunk group
- the amount of traffic at the time
- the minor alarm threshold set in Table TRKMTCE

Common procedures

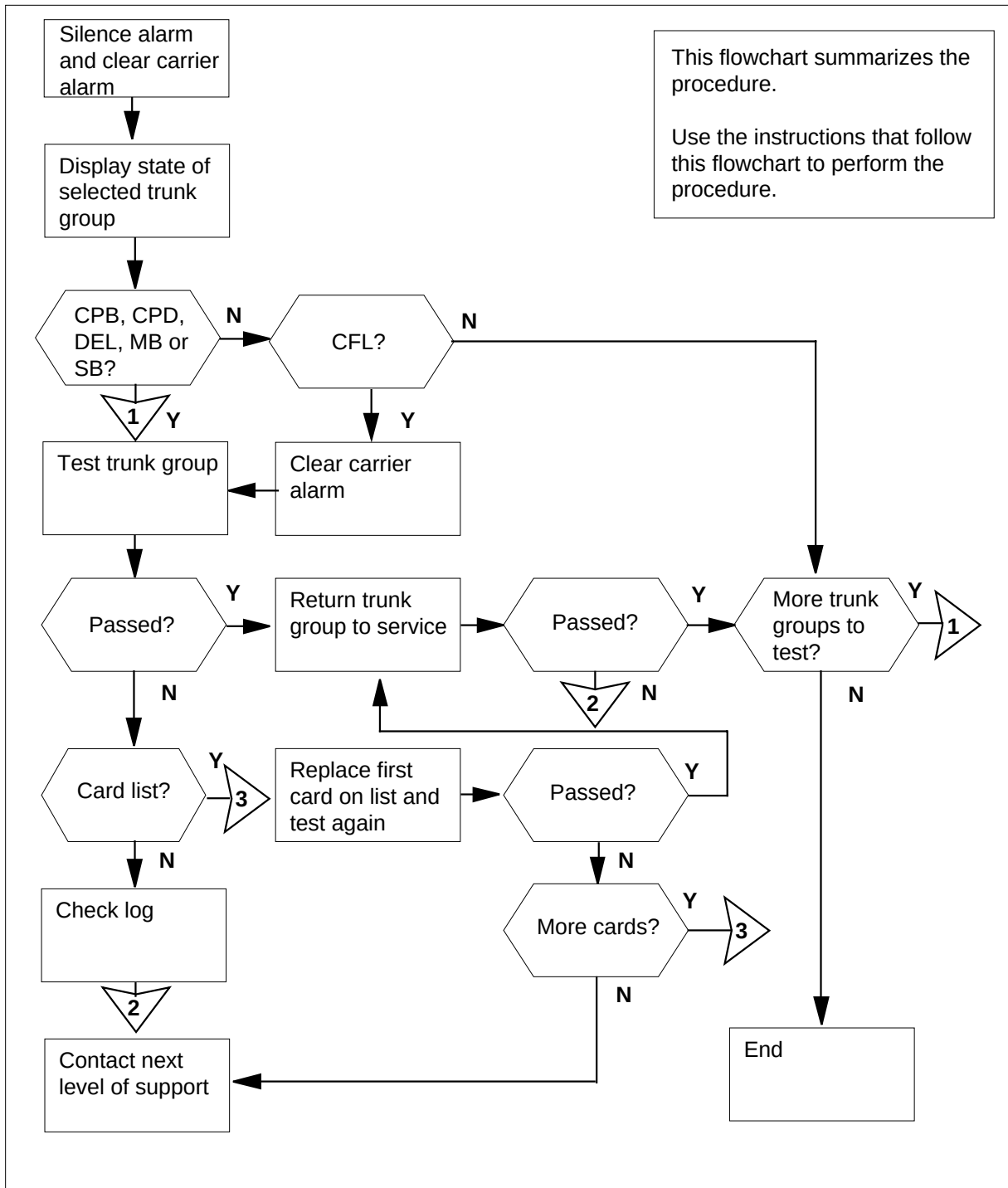
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CG minor (continued)

Summary of clearing a Trks CG minor alarm



Trks CG minor (continued)

Clearing a Trks CG minor alarm

At the MAP terminal

- 1 To access the STAT level of the MAP display and silence the alarm, type
>MAPCI;MTC;TRKS;STAT;SIL
and press the Enter key.

Example of a MAP display:

TWOWY	ITG	OTG	MISC
36GC	49GC	62GC	19GC

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
TRKS:								
STAT:								

- 2 To display details of all trunk groups with a minor alarm, type
>DISPGRP ALL G
and press the Enter key.

Example of a MAP display:

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
0	2W	G	XPMODD3	32	0	0	8	25
1	IC	G	RSCITDP1	1	0	1	0	100
2	OG	G	PDXP_RSC	1	0	1	0	100

- 3 Record the trunk groups displayed in step 2.
- 4 To select a trunk group on which you want to work, type

>ITEM item_no
and press the Enter key.

where

item_no

is the item number of the trunk group on which you want to work. The item number appears in the far-left column of the MAP display in step 2

- 5 To display details of trunk circuits in the trunk group, type
>DISALM G
and press the Enter key.

Example of a MAP display:

OG	G	XPMODD1	33	0	0	8	24

PM NO	TRMNL	CKTNO	STATE	PM NO	TRMNL	CKTNO	STATE
LTC 0	18 1	7	DEL				

Trks CG minor (continued)

- 6 Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do
is CFL (carrier fail)	step 23
is CPD (call process deload)	step 10
is DEL (deload)	step 10
is IDL (idle)	step 20
is INB (installation busy)	step 20
is INI (initializing)	step 20
is LO (locked out)	step 7
is MB (manual busy)	step 10
is NEQ (not equipped)	step 20
is NMB (network management busy)	step 20
is PMB (peripheral module busy)	step 8
is RES (restricted)	step 20
is RMB (remote make busy)	step 7
is SB (system busy)	step 10
is SZD (seized)	step 20

- 7 Contact the far-end office to determine the cause of the circuit lock out. Make sure that the circuit returns to to service.

Go to step 20.

- 8 Perform the correct procedure in this document to clear the alarm. Complete the procedure and return to this point.

- 9 Go to step 20.

- 10 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

Trks CG

minor (continued)

```
POST      DELQ      BUSYQ      DIG
TTP  6-052
CKT TYPE      PM NO.      COM LANG STA S R  DOT TE  RESULT
```

```
TTP ID IS:  6-052
NO CKT, SET IS EMPTY
```

- 11** To post the trunk group, type

```
>POST G trunk_name
```

and press the Enter key.

where

trunk_name

is the name of the circuit to post, as indicated in the MAP

display in step 5. An example of a circuit is XPMODD1

- 12** To manually busy the first trunk in the posted group, type

```
>BSY
```

and press the Enter key.

- 13** To test the trunk, type

```
>TST
```

and press the Enter key.

Example of a MAP display:

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
CKT  XPMODD1  1
DIAGNOSTIC RESULT CONNECTION FAILURE
ACTION REQUIRED TRY AGAIN
CARD TYPE
ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 19
failed, and the system generated a card list	step 15
fails, and the system did not generate a card list	step 14

Trks CG minor (continued)

	If the TST command	Do
	failed, connection failure, see TRK107 log	step 13
14	The system generated a trunk 101 log. Record the information in the log. Go to step 23.	
15	Record the location, description, slot number, product engineering code (PEC), and PEC of all the cards on the list.	
16	Perform the correct procedure in <i>Card Replacement Procedures</i> to replace the first card on the list. Complete the procedure and return to this point.	
17	To test the trunk, type >TST and press the Enter key. <i>Example of a MAP display:</i>	

TEST OK

MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
CKT XPMODD1 1

	If the TST command	Do
	passed	step 18
	failed, and more cards remain on the list	step 16
	failed, and more cards do not remain on the list	step 23
18	To return the trunk to service, type >RTS and press the Enter key. <i>Example of a MAP response:</i>	

STATE CHANGED

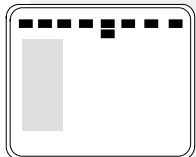
	If the RTS command	Do
	passed	step 19
	failed	step 20

Trks CG minor (end)

- 19** To determine if more trunks in the posted trunk group that continue to have an alarm are present, type
>NEXT
and press the Enter key.
- | If more trunks that continue to have an alarm | Do |
|--|-----------|
| are present | step 12 |
| are not present | step 20 |
- 20** Check the list recorded in step 3. Determine if more trunk groups with a critical alarm are present.
- | If more trunk groups with a critical alarm | Do |
|---|-----------|
| are present | step 21 |
| are not present | step 24 |
- 21** To select the next trunk group, type
>STAT
and press the Enter key.
- 22** Go to step 2.
- 23** For additional help, contact the next level of support.
- 24** The procedure is complete.

**Trks CM
major**

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	1CM	.	.
								M		

Indication

At the MTC level of the MAP display, CM (preceded by a number) appears under the Trks header of the alarm banner. The CM indicates a carrier major (CM) alarm.

Meaning

At least one trunk group has a major alarm and at least one carrier is system busy.

The number that precedes CM indicates the number of trunk groups with a major alarm.

Result

The result of a trunk group major alarm on subscriber service depends on the following:

- the application and the size of the trunk group
- the amount of traffic at the time
- the major alarm threshold set in table TRKMTCE

Common procedures

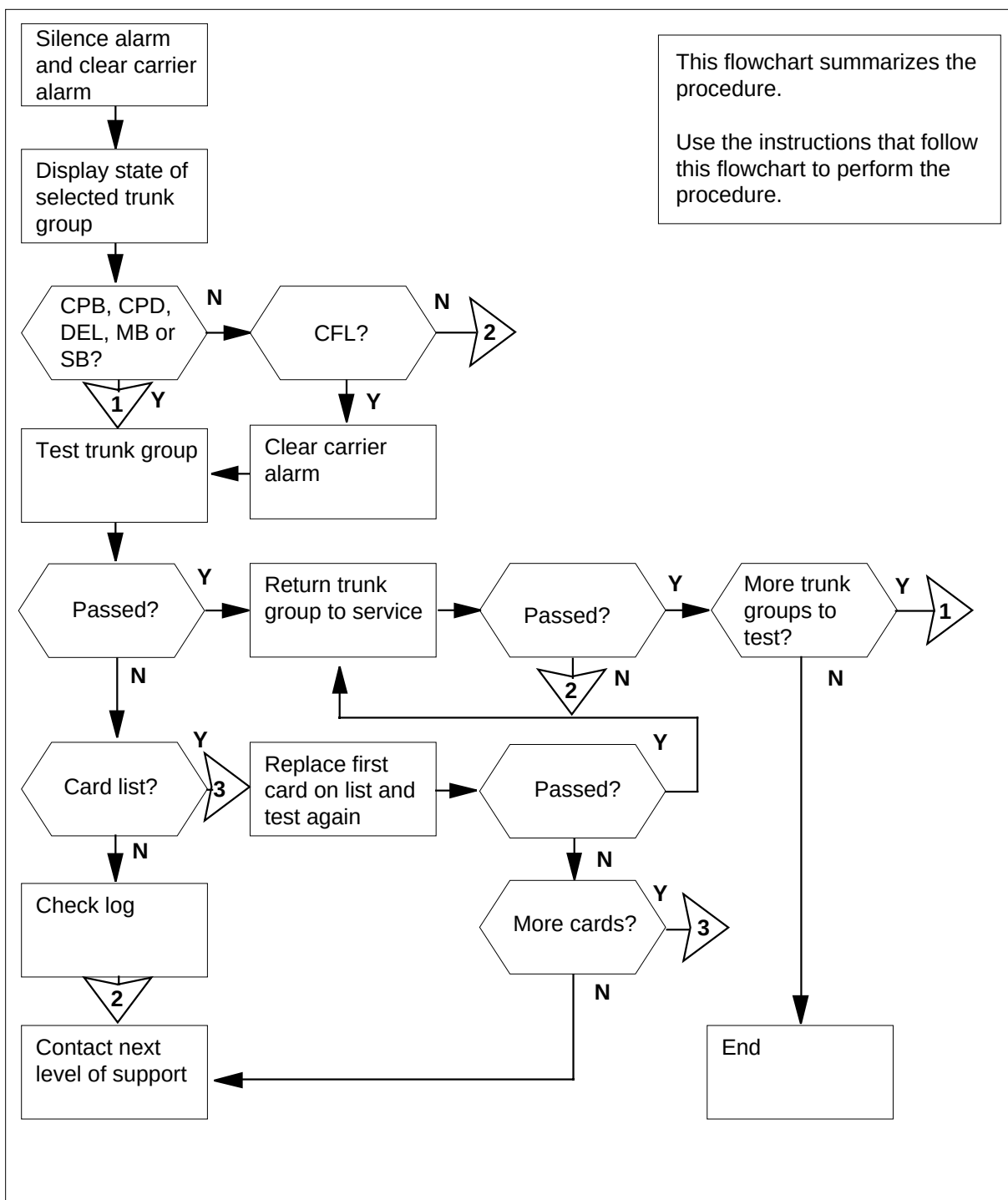
There are no common procedures.

Action

This flowchart contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CM major (continued)

Summary of clearing a Trks CM major alarm



Trks CM major (continued)

Clearing a Trks CM major alarm

At the MAP terminal

- 1 To access the STAT level of the MAP display and silence the alarm, type
>MAPCI;MTC;TRKS;STAT;SIL
and press the Enter key.

Example of a MAP display:

TWOWY	ITG	OTG	MISC
36GC	49GC	62GC	19GC

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
TRKS:								
STAT:								

- 2 To display details of all trunk groups with a major alarm, type
>DISPGRP ALL GM
and press the Enter key.

Example of a MAP display:

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
0	OG	GM	OTRAFLD	24	0	0	10	42
1	IC	GM	RSCITDP1	1	0	1	0	100
2	OG	GM	PDXP_RSC	1	0	1	0	100

- 3 Record the trunk groups displayed in step 2.
- 4 To select a trunk group on which to work, type

>ITEM item_no

and press the Enter key.

where

item_no

is the item number of the trunk group on which you want to work.

The trunk group appears in the far left column of the MAP display in

step 2

- 5 To display details of trunk circuits in the trunk group, type
>DISALM GM
and press the Enter key.

Example of a MAP display:

Trks CM major (continued)

```

      IC      GM      OTRAFDD3      1      0      1      0      100

PM  NO  TRMNL  CKTNO  STATE  PM  NO  TRMNL  CKTNO  STATE
RCC 0   9  11    0    CFL

```

- 6** Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do
is CFL (carrier fail)	step 23
is CPD (call process deload)	step 10
is DEL (deload)	step 10
is IDL (idle)	step 20
is INB (installation busy)	step 20
is INI (initializing)	step 7
is LO (locked out)	step 8
is MB (manual busy)	step 10
is NEQ (not equipped)	step 20
is NMB (network management busy)	step 20
is PMB (peripheral module busy)	step 9
is RES (restricted)	step 20
is RMB (remote make busy)	step 8
is SB (system busy)	step 10
is SZD (seized)	step 20

- 7** The circuit is in an initializing (INI) state. There is no action required.
Go to step 20.

- 8** Contact the far-end office to determine why the circuit is busy. Make sure the circuit returns to service.
Go to step 20.

Trks CM major (continued)

- 9** Perform the appropriate PM procedure in this document to clear the alarm. Complete the procedure and return to this point.
Go to step 20.

- 10** To access the TTP level of the MAP display, type
>TTP
and press the Enter key.

Example of a MAP display:

POST	DELQ	BUSYQ	DIG
TTP 6-030			
CKT TYPE	PM NO.	COM LANG	STA S R DOT TE RESULT

TTP ID IS: 6-030
12 NEXT NO CKT, SET IS EMPTY

- 11** To post the trunk group, type
>POST G trunk_name
and press the Enter key.

where

trunk_name is the name of the circuit to post, as indicated in the MAP display in step 5. An example of a circuit is OTRAFDD3.

Example of a MAP display:

LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK, CKT POSTED

- 12** To manually busy the first trunk in the posted group, type
>BSY
and press the Enter key.

- 13** To test the trunk, type
>TST
and press the Enter key.

Example of a MAP display:

Trks CM
major (continued)

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
CKT   OTRAFDD3   1
DIAGNOSTIC RESULT CONNECTION FAILURE
ACTION REQUIRED TRY AGAIN
CARD TYPE
ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 18
failed, and the system generated a card list	step 15
failed, and the system did not generate a card list	step 14
failed, connection failure, see TRK107 log	step 13

14 The system generated a trunk 101 log. Record the information in the log. Go to step 23.

15 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.

16 Perform the appropriate procedure in *Card Replacement Procedures* to replace the first card on the list. Complete the procedure and return to this point.

17 To test the trunk, type
>TST
and press the Enter key.
Example of a MAP display:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
CKT   OTRAFDD3   1
```

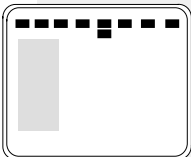
If the TST command	Do
passed	step 18
failed, and you did not replace all the cards on the list from step 15	step 16

Trks CM major (end)

	If the TST command	Do
	failed, and you replaced all the cards on the list from step 15	step 23
18	To return the trunk to service, type >RTS and press the Enter key. <i>Example of a MAP display:</i> STATE CHANGED	
	If the RTS command	Do
	passed	step 19
	failed	step 23
19	To determine if more trunks with an alarm are present in the posted trunk group, type >NEXT and press the Enter key.	
	If more trunks that continue to have an alarm	Do
	are present	step 12
	are not present	step 20
20	Check the list you recorded in step 3. Determine if more trunk groups with a critical alarm are present.	
	If more trunk groups with a critical alarm	Do
	are present	step 21
	are not present	step 24
21	To select the next trunk group, type >STAT and press the Enter key.	
22	Go to step 2.	
23	For additional help, contact the next level of support.	
24	The procedure is complete.	

Trks CR C and CR M critical

Alarm display

	CM	MS	IOD	NET	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	CR C	.	.

Indication

At the MTC level of the MAP display, CR C or CR M appear under the Trks header of the alarm banner. The CR C or the CR M indicates a critical alarm. The alarm changes at 30 s intervals with out-of-service alarms, like a GM.

Meaning

A CR C alarm indicates the Focused Trunks Maintenance system detected a critical number of failed call attempts. The attempts occurred through a trunk group.

A CR M alarm means the Focused Trunks Maintenance system detected a critical number of trouble reports against a trunk group.

Result

The result of a CR C alarm or a CR M alarm depends on the following:

- the type and the size of the trunk group
- the amount of traffic at the time
- the critical threshold for failed call attempts through a trunk group (table TRKMTCE)

Common procedures

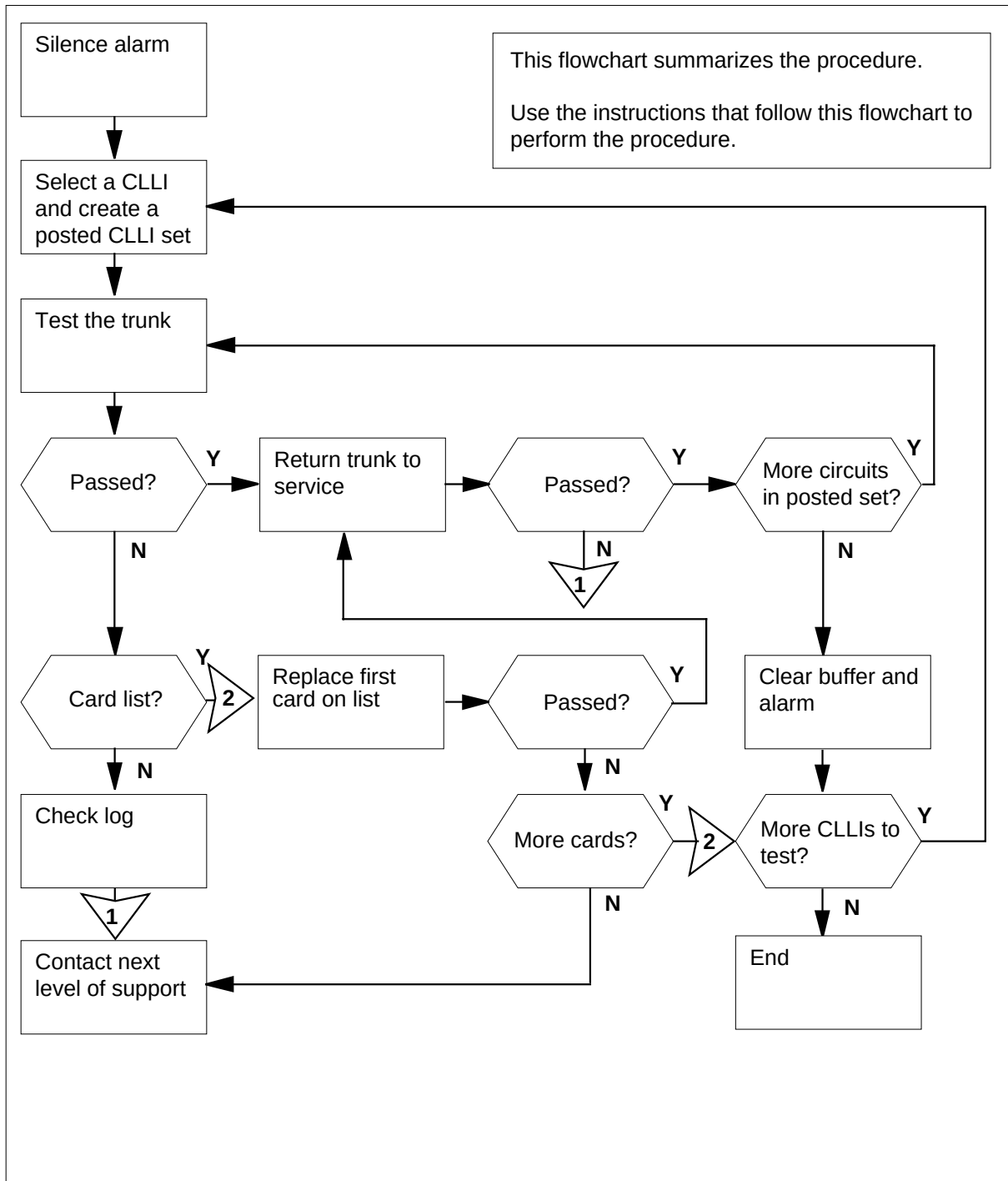
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CR C and CR M critical (continued)

Summary of clearing a Trks CR C and CR M critical alarm



Trks CR C and CR M critical (continued)

Clearing a Trks CR C and CR M critical alarm

At the MAP terminal

- 1 To access the TRKSTRBL level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;TRKSTRBL;SIL

and press the Enter key.

Example of a MAP display:

	MN	MJ	CR	CLLI:	BT:
M	0	0	0		
CP	0	0	0		

E# ID COUNT LAST TROUBLE TIME...TROUBLE
DESCRIPTION...

0
1
2
3
4
5
6
7
8
9

- 2 To record the common-language location identifiers (CLLIs) of all the trunk groups in the maintenance buffer with critical alarms, type

>LISTALM alarm_type CR

and press the Enter key.

where

alarm_type

is CP if the alarm is CR C, or M if the alarm is CR M

XPMIDD3	CR
XPMIDD2	CR
XPMIDD1	CR

- 3 Select a trunk group on which to work.
- 4 Record the CLLI of the trunk group you selected. An example of a CLLI is XPMIDD3 in the MAP display example in step 2.

Trks CR C and CR M critical (continued)

- 5 To display the contents of the maintenance buffer for the selected trunk group, type

>DISP clli alarm_type

and press the Enter key.

where

cli

is the CLLI of the trunk group that you selected.

(XPMIDD3 is an example of a CLLI)

alarm_type

is CP if the alarm is CR C, or M if the alarm is CR M

Example of a MAP display:

	MN	MJ	CR	CLLI:XPMIDD3BT:CP
M	0	0	0	
CP	1	3	10	

E#	ID	COUNT	LAST TROUBLE TIME	..TROUBLE DESCRIPTION..
0	34	109	92/05/19 11:08:11	64.Lockout on
1	36	109	92/05/19 11:08:11	64.Lockout on
2				

- 6 To create a posted set on which to work, type

>CREATSET clli CP format

and press the Enter key.

where

cli

is the CLLI of the trunk group that you selected

format

is the way trunks appear in the posted set (HC, MR, HC ALL, or 4

MR ALL)

- 7 Record all trunk groups that appear in the posted set.

- 8 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP response:

Trks CR C and CR M critical (continued)

```

POST          DELQ          BUSYQ          DIG
TTP  6-030
CKT TYPE      PM NO.      COM LANG      STA S R DOT TE RESULT

```

```

TTP ID IS:  6-030
12 NEXT      NO CKT,SET IS EMPTY

```

- 9 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name

is the name of the circuit to post, as indicated in the MAP

display in step 2. An example of a circuit to post is XPMIDD3.

Example of a MAP response:

```

LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS:
XIDD3
OK, CKT POSTED

```

- 10 To manually busy the trunk in the control position, type

>BSY

and press the Enter key.

Example of a MAP response:

```

STATE CHANGED

```

- 11 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

Trks CR C and CR M critical (continued)

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
    CKT   XPMIDD3   1
    DIAGNOSTIC RESULT CONNECTION FAILURE
    ACTION REQUIRED TRY AGAIN
    CARD TYPE
    ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 16
failed, and the system generated a card list	step 13
failed, and the system did not generate a card list	step 12
failed, connection failure, refer to TRK107 log	step 11

- 12** The system generated a trunk 101 log. Record the information in the log. Go to step 25.
- 13** Record the location, description, slot number, PEC, and PEC suffix of all the cards on the list.
- 14** Perform the correct procedure in *Card Replacement Procedures* to replace the first card on the list. Complete the procedure and return to this point.
- 15** To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
    CKT   XPMIDD3   1
```

If the TST command	Do
passed	step 16
fails, and more cards remain on the list	step 14
failed, and more cards do not remain on the list	step 25

- 16** To return the trunk to service, type

>RTS

and press the Enter key.

Example of a MAP response:

Trks CR C and CR M critical (continued)

STATE CHANGED							
	STATE CHANGED						
	<table border="1"> <thead> <tr> <th>If the RTS command</th> <th>Do</th> </tr> </thead> <tbody> <tr> <td>passed</td> <td>step 9</td> </tr> <tr> <td>failed</td> <td>step 25</td> </tr> </tbody> </table>	If the RTS command	Do	passed	step 9	failed	step 25
If the RTS command	Do						
passed	step 9						
failed	step 25						
17	To determine if any more trunks with an alarm are present in the posted trunk group, type >NEXT and press the Enter key. <table border="1"> <thead> <tr> <th>If more trunks that continue to have an alarm</th> <th>Do</th> </tr> </thead> <tbody> <tr> <td>are present</td> <td>step 10</td> </tr> <tr> <td>are not present</td> <td>step 18</td> </tr> </tbody> </table>	If more trunks that continue to have an alarm	Do	are present	step 10	are not present	step 18
If more trunks that continue to have an alarm	Do						
are present	step 10						
are not present	step 18						
18	To return to the TRKSTRBL level of the MAP display, type >TRKSTRB and press the Enter key.						
19	Clear a trunk group from the maintenance buffer. The trunk group returned to service earlier. To clear the trunk group, type >CLRBUF clli alarm_type and press the Enter key. where cli is the CLLI of the trunk group that you selected in step 3. An example of a CLLI is XPMIDD3 alarm_type is CP if the alarm is CR C, or M if the alarm is CR M <i>Example of a MAP response:</i> Will clear entire CP upper buffer for XPMIDD3. Please confirm ("YES" or "NO"):						
20	To confirm the command, type >YES and press the Enter key.						

Trks CR C and CR M critical (end)

- 21** To clear the alarm, type
>CLRALM clli alarm_type
 and press the Enter key.
where
cli
 is the CLLI of the trunk group that you selected in step 3.

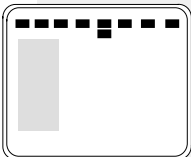
 An example of a CLLI is XPMIDD3
alarm_type
 is CP if the alarm is CR C, or M if the alarm is CR M
Example of a MAP response:

 Will clear CP alarm, reset attempt and failure counters
 Please confirm ("YES" or "NO"):
- 22** To confirm the command, type
>YES
 and press the Enter key.
Example of a MAP response:

 CP alarm cleared, attempt and failure counters reset.
- 23** Determine if the alarm cleared.
Note: The status of the alarm appears in the MAP response, like the example in step 22.
- | If the alarm | Do |
|---------------|---------|
| cleared | step 26 |
| did not clear | step 24 |
- 24** Check the list that you recorded in step 2 to determine if there are more trunk groups to test.
- | If more trunk groups to test | Do |
|------------------------------|---------|
| are present | step 3 |
| are not present | step 25 |
- 25** For additional help, contact the next level of support.
- 26** The procedure is complete.

Trks CS critical, major, or minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks 3CS	Ext	APPL
	.	.	.	.	.	.	.		.	.

Indication

At the MTC level of the MAP display, CS preceded by a number appears under the Trks header of the alarm banner. The CS indicates a carrier system busy (CS) critical, major, or minor alarm.

Meaning

One or more trunk groups have system busy trunks and at least one carrier is system busy.

The number under the Trks header in the alarm banner indicates the number of CS trunks affected.

- For a critical alarm, *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, there is no display under the alarm indicator.

When the critical alarm reaches the threshold set in table TRKMTCE, a critical alarm is raised. When the major alarm reaches the threshold set in table TRKMTCE, a major alarm is raised. When the minor alarm reaches the threshold set in table TRKMTCE, a minor alarm is raised.

Result

The result of a CS alarm depends on the following factors:

- the type and size of the trunk group(s)
- the amount of traffic at the time
- the correct critical, major, or minor alarm threshold set in table TRKMTCE for the trunk group(s)

Common procedures

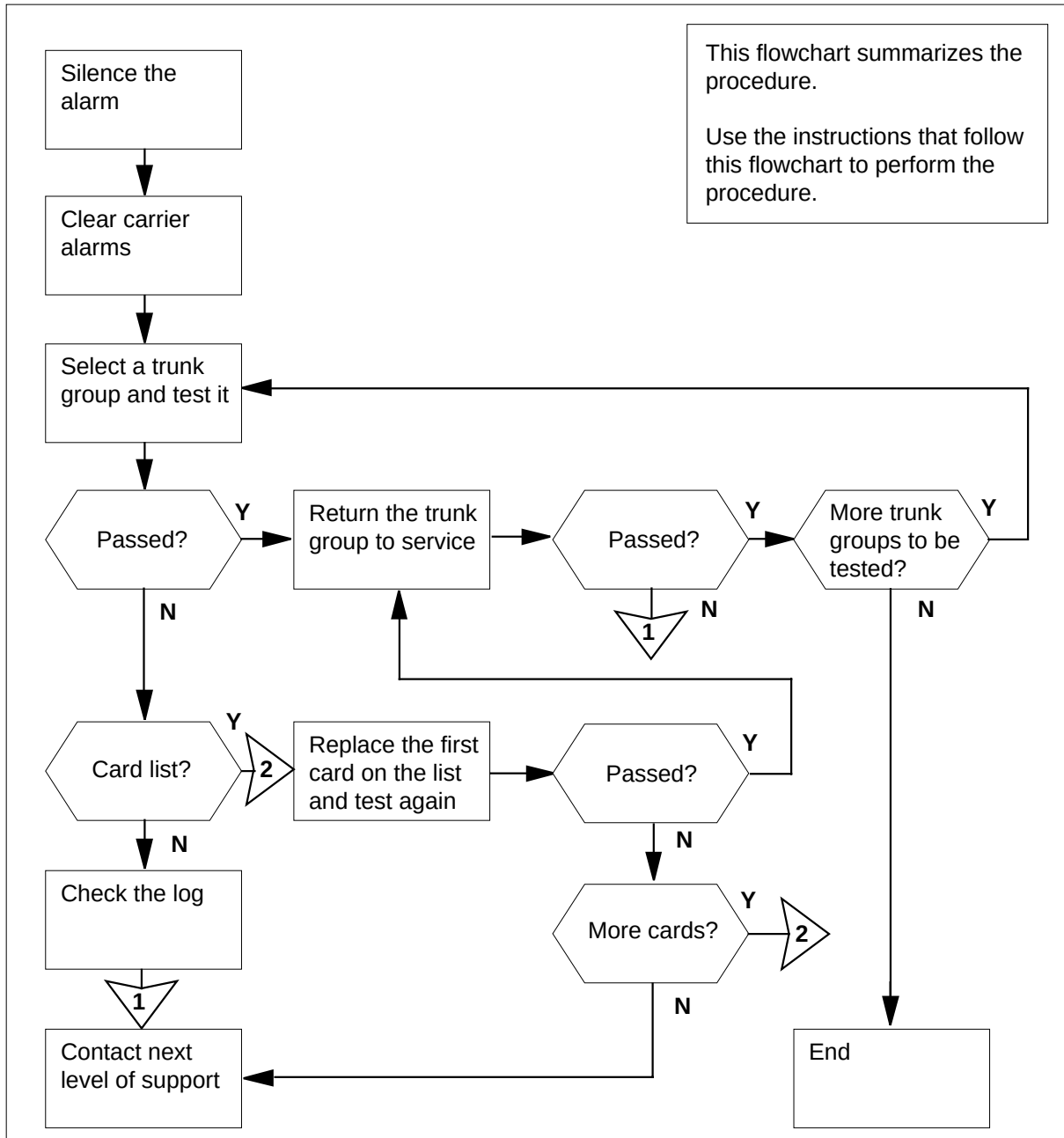
There are no common procedures.

Trks CS critical, major, or minor (continued)

Action

The procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Summary of clearing a Trks CS critical, major, or minor alarm



Trks CS critical, major, or minor (continued)

Clearing a Trks CS critical, major, or minor alarm

At the MAP terminal

- 1 Determine if an audible alarm is present.

If an audible alarm	Do
is present	step 2
is not present	step 3

- 2 To silence the alarm, type

>SIL

and press the Enter key.

- 3 Perform the procedure *Clearing a C. alarm* in this document. Complete the procedure and return to this point.

- 4 To access the STAT level of the MAP display, type

>MAPCI;MTC;TRKS;STAT

and press the Enter key.

Example of a MAP display:

TWOWY	ITG	OTG	MISC
36GC	49GC	62GC	19GC

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
TRKS:								
STAT:								

- 5 To display details of all alarm trunk groups, type

>DISPGRP ALL SB

and press the Enter key.

Example of a MAP display:

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
0	MISC	SB	DMODEMC	8	8	0	0	100
1	IC	SB	RSCITDP1	1	0	1	0	100
2	OG	SB	PDXP_RSC	1	0	1	0	100

- 6 Record the trunk groups that appear in step 5.

- 7 To select a trunk group on which to work, type

>ITEM item_no

and press the Enter key.

Trks CS

critical, major, or minor (continued)

where

item_no

is the item number of the trunk group you want work on, as

indicated in the left-most column of the MAP display in step 5

- 8** To display details of trunk circuits in the trunk group, type

>DISALM SB

and press the Enter key.

- 9** To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

```

POST      DELQ      BUSYQ      DIG
TTP  6-030
CKT TYPE      PM NO.      COM LANG      STA S R  DOT TE  RESULT

```

```

TTP ID IS:  6-030
12 NEXT      NO CKT,SET IS EMPTY

```

- 10** To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name

is the name of the circuit to be posted, as indicated in the MAP

display in step 5, for example, RSCITDP1

Example of a MAP display:

```

LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK, CKT POSTED

```

- 11** To manually busy the first trunk in the posted group, type

>BSY

and press the Enter key.

Example of a MAP response:

```

STATE CHANGED

```

Trks CS

critical, major, or minor (continued)

- 12** To test the trunk, type
>TST
 and press the Enter key.
Example of a MAP response:

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
    CKT    RSCITDP1    1
    DIAGNOSTIC RESULT CONNECTION FAILURE
    ACTION REQUIRED TRY AGAIN
    CARD TYPE
    ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 17
failed, and the system generated a card list	step 14
failed, and the system did not generate a card list	step 13

- 13** The system generates a trunk 101 log. Record the information in the log, and go to step 22.
- 14** Record the location, description, slot number, and product engineering code (PEC), and the PEC suffix of all the cards on the list.
- 15** To replace the first card on the list, perform the correct card replacement procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.
- 16** To test the trunk, type
>TST
 and press the Enter key.
Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
    CKT    RSCITDP1    1
```

If the TST command	Do
passed	step 17
failed, and more cards remain on the list	step 15
failed, and more cards do not remain on the list	step 22

Trks CS critical, major, or minor (end)

- 17** To return the trunk group to service, type

>RTS

and press the Enter key.

Example of a MAP response:

STATE CHANGED

If the RTS command	Do
passed	step 18
failed	step 22

- 18** To determine if more trunks are present in the posted trunk group that continue to have an alarm, type

>NEXT

and press the Enter key.

If	Do
more trunks that still have an alarm are present	step 11
more trunks that still have an alarm are not present	step 19

- 19** Determine from the list that you recorded in step 6 more trunk groups with a critical alarm are present.

If	Do
more trunk groups with a critical alarm are present	step 20
more trunk groups with a critical alarm are not present	step 23

- 20** To select the next trunk group, type

>STAT

and press the Enter key.

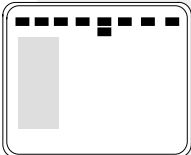
- 21** Go to step 5.

- 22** For additional help, contact the next level of support.

- 23** The procedure is complete.

Trks EX critical, major, or minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	1EX	.	.

Indication

At the MTC level of the MAP, EX (preceded by a number) appears under the Trks header of the alarm banner. The EX indicates a external busy (EX) critical, major, or minor alarm.

Meaning

One or more trunk groups have external busy trunks. Removal of these trunks from service occurred at the far end.

The number under the Trks header in the alarm banner indicates the number of external trunks affected.

- For a critical alarm, a *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, a number does not appear under the alarm indicator.

Arrival at the critical alarm threshold set in table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in table TRKMTCE raises a major alarm. Arrival at the minor alarm threshold set in table TRKMTCE raises a minor alarm.

Result

The affect of an EX alarm depends on the following causes:

- the type and the size of the trunk group(s)
- the amount of traffic at the time
- the correct critical, major, or minor alarm threshold set in table TRKMTCE for the trunk group(s)

Common procedures

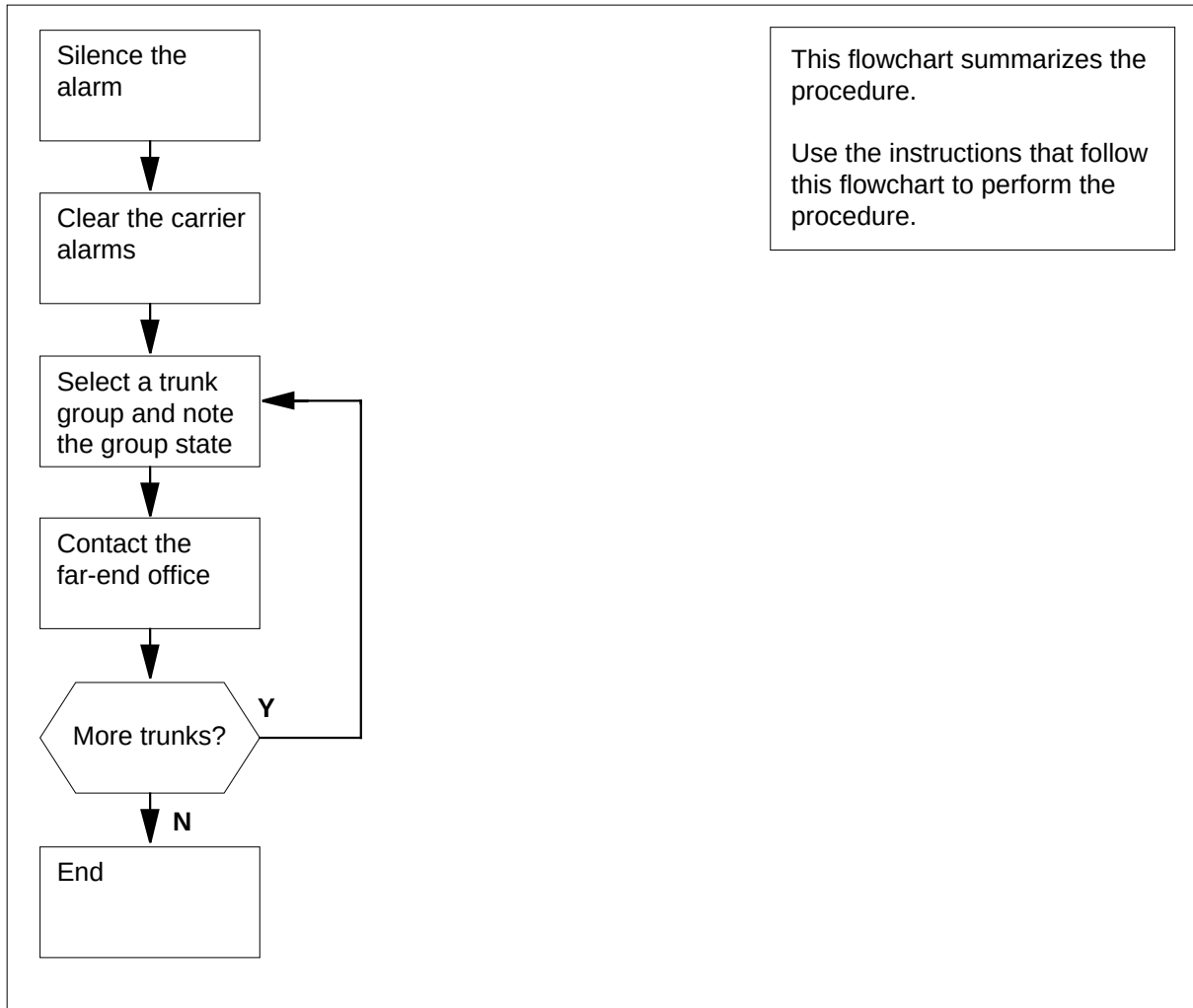
There are no common procedures.

Trks EX critical, major, or minor (continued)

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Summary of clearing an Trks EX critical, major, or minor alarm



Trks EX critical, major, or minor (continued)

Clearing an Trks EX critical, major, or minor alarm

At the MAP terminal

- 1 To access the STAT level of the MAP display and silence the alarm, type
>MAPCI;MTC;TRKS;STAT;SIL
and press the Enter key.

Example of a MAP display:

TWOWY	ITG	OTG	MISC
36GC	49GC	62GC	19GC

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
TRKS:								
STAT:								

- 2 To display details of all trunk groups with external busy circuits, type
>DISPGRP ALL EX
and press the Enter key.

Example of a MAP display:

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
0	MISC	ECX	DMODEMC	8	8	0	0	42
1	IC	EX	RSCITDP1	1	0	1	0	100
2	OG	EX	PDXP_RSC	1	0	1	0	100

- 3 Record the trunk groups that appear in step 2.
- 4 To select a trunk group on which to work and record the item number on the display, type

>ITEM item_no

and press the Enter key.

where

item_no

is the item number of the trunk group on which you want to work. The trunk group appears in the far left column of the MAP display in step 2.

- 5 To display details of trunk circuits in the selected group, type
>DISALM EX
and press the Enter key.

Example of a MAP display:

Trks EX critical, major, or minor (end)

```

      IC      EX  RSCITDP1      1      0      1      0      100
PM NO      TRMNL  \ CKTNO      STATE      PM      NO      TRMNL
CKTNO      STATE
RCC 0      9 11      0  RMB

```

- 6** Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do

is LO (locked out)	step 7

is RMB (remote make busy)	step 8

- 7** The circuit is in a locked out state. Contact the far-end office to determine the cause of the locked out circuit. Make sure that the circuit returns to service. Go to step 9.

- 8** Contact the far-end office to determine why the circuit is remote make busy. Contact the far-end office to make sure that the circuit returns to service.

- 9** Check the list recorded in step 3. Determine if more trunk groups with external busy circuits are present.

If more trunk groups with external busy circuits	Do

are present	step 4

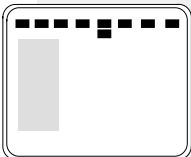
are not present	step 11

- 10** For additional help, contact the next level of support.

- 11** The procedure is complete.

Trks GC, GM, and G critical, major, or minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	2GC	.	.

Indication

At the MTC level of the MAP display, GC, GM, or G (preceded by a number) appears under the Trks header of the alarm banner. The GC, GM or G indicates a trunk group critical, major, or minor alarm.

Meaning

A minimum of one trunk group has a critical alarm. A GM alarm indicates that a minimum of one trunk group has a major alarm. A G alarm indicates that a minimum of one trunk group has a minor alarm.

The number under the Trks header in the alarm banner indicates the number of affected GC, GM and G trunks.

- For a critical alarm, a *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, the area under the alarm indicator is blank.

Arrival at the critical alarm threshold set in table CLLIMTCE raises a critical alarm. Arrival at the major alarm threshold set in table CLLIMTCE raises a major alarm. Arrival at the minor alarm threshold set in table CLLIMTCE raises a minor alarm.

Result

The result of a trunk group alarm depends on the following causes:

- the type and the size of the trunk group
- the amount of traffic at the time
- the correct critical, major, or minor alarm threshold set in table CLLIMTCE

Common procedures

There are no common procedures.

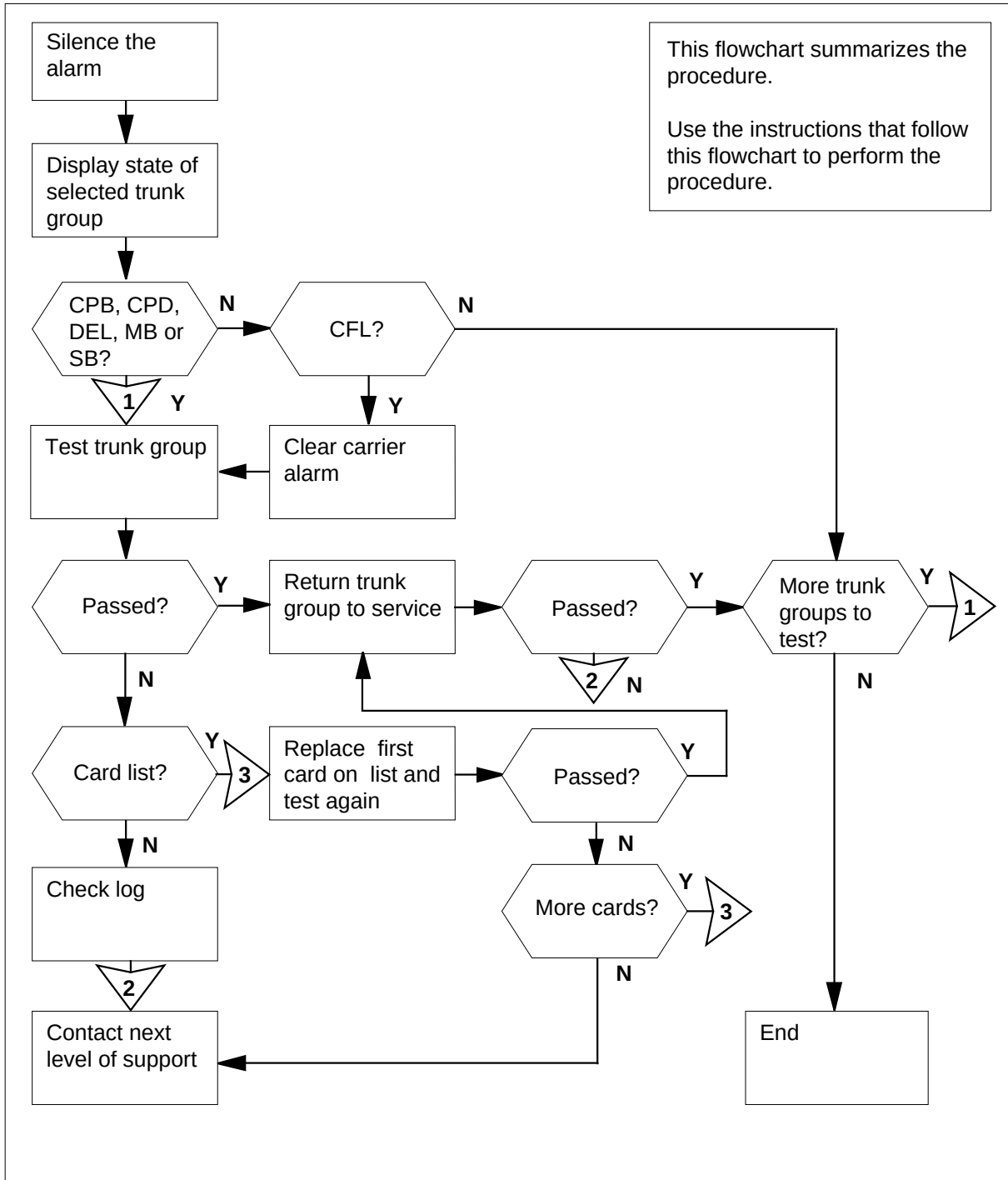
**Trks GC, GM, and G
critical, major, or minor (continued)**

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks GC, GM, and G critical, major, or minor (continued)

Summary of clearing a Trks GC, GM, and G critical, major, or minor alarm



Trks GC, GM, and G critical, major, or minor (continued)

Clearing a Trks GC, GM, and G critical, major, or minor alarm

At the MAP terminal

- 1 To access the STAT level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP display:

TWOWY	ITG	OTG	MISC					
36GC	49GC	62GC	19GC					
ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
TRKS:								
STAT:								

- 2 To display details of all trunk groups with a critical, major, or minor alarm, type

>DISPGRP ALL type

and press the Enter key.

where

type

is GC for critical alarms, GM for major alarms, or G for minor alarms

Example of a MAP display:

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
0	MISC	GC	DMODEMC	8	8	0	0	100
1	IC	GC	RSCITDP1	1	0	1	0	100
2	OG	GC	PDXP_RSC	1	0	1	0	100

- 3 Record the trunk groups displayed in step 2.

- 4 To select a trunk group on which to work, type

>ITEM item_no

and press the Enter key.

where

item_no

is the item number of the trunk group on which you want to work.

The trunk group appears in the far left column of the MAP display in

step 2.

Trks GC, GM, and G critical, major, or minor (continued)

- 5 To display details of trunk circuits in the trunk group, type

>DISALM type

and press the Enter key.

where

type

is GC for critical alarms, GM for major alarms, or G for minor alarms

Example of a MAP display:

```

IC      MB  RSCITDP1      1   0   1   0      100

PM NO    TRMNL   CKTNO   STATE  PM NO    TRMNL   CKTNO   STATE
RCC 0     9 11      0     CFL

```

- 6 Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do
is CFL (carrier fail)	step 10
is CPD (call process deload)	step 11
is DEL (deload)	step 11
is IDL (idle)	step 21
is INB (installation busy)	step 21
is INI (initializing)	step 21
is LO (locked out)	step 7
is MB (manually busy)	step 11
is NEQ (not equipped)	step 21
is NMB (network management busy)	step 21
is PMB (peripheral module busy)	step 8
is RES (restricted)	step 21
is RMB (remote make busy)	step 7
is SB (system busy)	step 11

Trks GC, GM, and G critical, major, or minor (continued)

	If the state of the trunk group	Do
	is SZD (seized)	step 21
7	Contact the far-end office to determine the cause of the locked out circuit. Make sure that the circuit returns to service. Go to step 21.	
8	Perform the correct alarm clearing procedure in this document. Complete the procedure and return to this point.	
9	Go to step 21.	
10	Perform the procedure <i>Clearing a Trks C Minor alarm</i> in this document. Complete the procedure and return to this point.	
11	To access the TTP level of the MAP display, type >TTP and press the Enter key. <i>Example of a MAP display:</i>	
	<pre> POST DELQ BUSYQ DIG TTP 6-030 CKT TYPE PM NO. COM LANG STA S R DOT TE RESULT TTP ID IS: 6-030 12 NEXT NO CKT,SET IS EMPTY </pre>	
12	To post the trunk group, type >POST G trunk_name and press the Enter key. <i>where</i> trunk_name is the name of the circuit to post. The circuit appears in the MAP display in step 5. An example of a circuit is RSCITDP1. <i>Example of a MAP display:</i>	
	<pre> LAST CKTN=24 POSTED CKT IDLED SHORT CLLI IS: RSCIT OK,CKT POSTED </pre>	
13	To manually busy the first trunk in the posted group, type >BSY and press the Enter key. <i>Example of a MAP display:</i>	

Trks GC, GM, and G critical, major, or minor (continued)

STATE CHANGED											
14	To test the trunk, type >TST and press the Enter key. <i>Example of a MAP display :</i> <pre> TEST FL MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL CKT RSCITDP1 1 DIAGNOSTIC RESULT CONNECTION FAILURE ACTION REQUIRED TRY AGAIN CARD TYPE ERROR DETAILS: NO MORE DETAILS </pre> <table> <tr> <th>If the TST command</th><th>Do</th></tr> <tr> <td>passed</td><td>step 19</td></tr> <tr> <td>failed, and the system generated a card list</td><td>step 16</td></tr> <tr> <td>failed, and the system did not generate a card list</td><td>step 15</td></tr> <tr> <td>failed, connection failure, refer to TRK107 log</td><td>step 14</td></tr> </table>	If the TST command	Do	passed	step 19	failed, and the system generated a card list	step 16	failed, and the system did not generate a card list	step 15	failed, connection failure, refer to TRK107 log	step 14
If the TST command	Do										
passed	step 19										
failed, and the system generated a card list	step 16										
failed, and the system did not generate a card list	step 15										
failed, connection failure, refer to TRK107 log	step 14										
15	The system generated a trunk 101 log. Record the information in the log. Go to step 24.										
16	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.										
17	To replace the first card on the list, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.										
18	To test the trunk, type >TST and press the Enter key. <i>Example of a MAP display:</i> <pre> TEST OK MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS CKT RSCITDP1 1 </pre> <table> <tr> <th>If the TST command</th><th>Do</th></tr> <tr> <td>passed</td><td>step 19</td></tr> </table>	If the TST command	Do	passed	step 19						
If the TST command	Do										
passed	step 19										

Trks GC, GM, and G critical, major, or minor (continued)

	If the TST command	Do
	failed, and you did not replace all the cards on the list recorded in step 16	step 17
	failed, and you replaced all the cards on the list recorded in step 16	step 24
19	To return the trunk group to service, type >RTS and press the Enter key. <i>Example of a MAP display:</i> STATE CHANGED	
	If the RTS command	Do
	passed	step 20
	failed	step 24
20	To determine if more trunks in the posted trunk group that continue to have an alarm are present, type >NEXT and press the Enter key.	
	If more trunk groups that continue to have an alarm	Do
	are present	step 13
	are not present	step 21
21	Check the list recorded in step 3. Determine if more trunk groups with a critical, major, or minor alarm are present.	
	If more trunk groups with alarms	Do
	are present	step 22
	are not present	step 25
22	To go to the next trunk group, type >STAT and press the Enter key. <i>Example of a MAP display:</i>	

Trks GC, GM, and G critical, major, or minor (end)

TWOWY	ITG	OTG	MISC					
36GC	49GC	62GC	19GC					
ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
TRKS:								
STAT:								

- 23** Go to step 2.
- 24** For additional help, contact the next level of support.
- 25** The procedure is complete.

Trks MB
critical, major, or minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	4MB	.	.

Indication

At the MTC level of the MAP display, MB (preceded by a number) appears under the Trks header of the alarm banner. The MB indicates a manually-busy (MB) critical, major, or minor alarm.

Meaning

A minimum of one trunk in a trunk group is manual busy and removed from service.

The number under the Trks header in the alarm banner indicates the number of affected manual-busy trunk groups.

- For a critical alarm, *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, the space under the alarm indicator is blank.

Result

The impact of an MB alarm depends on the following factors:

- the type of trunk
- the size of the trunk group(s)
- the amount of traffic at the time
- the correct critical, major, or minor alarm threshold set in table TRKMTCE for the affected trunk group

Common procedures

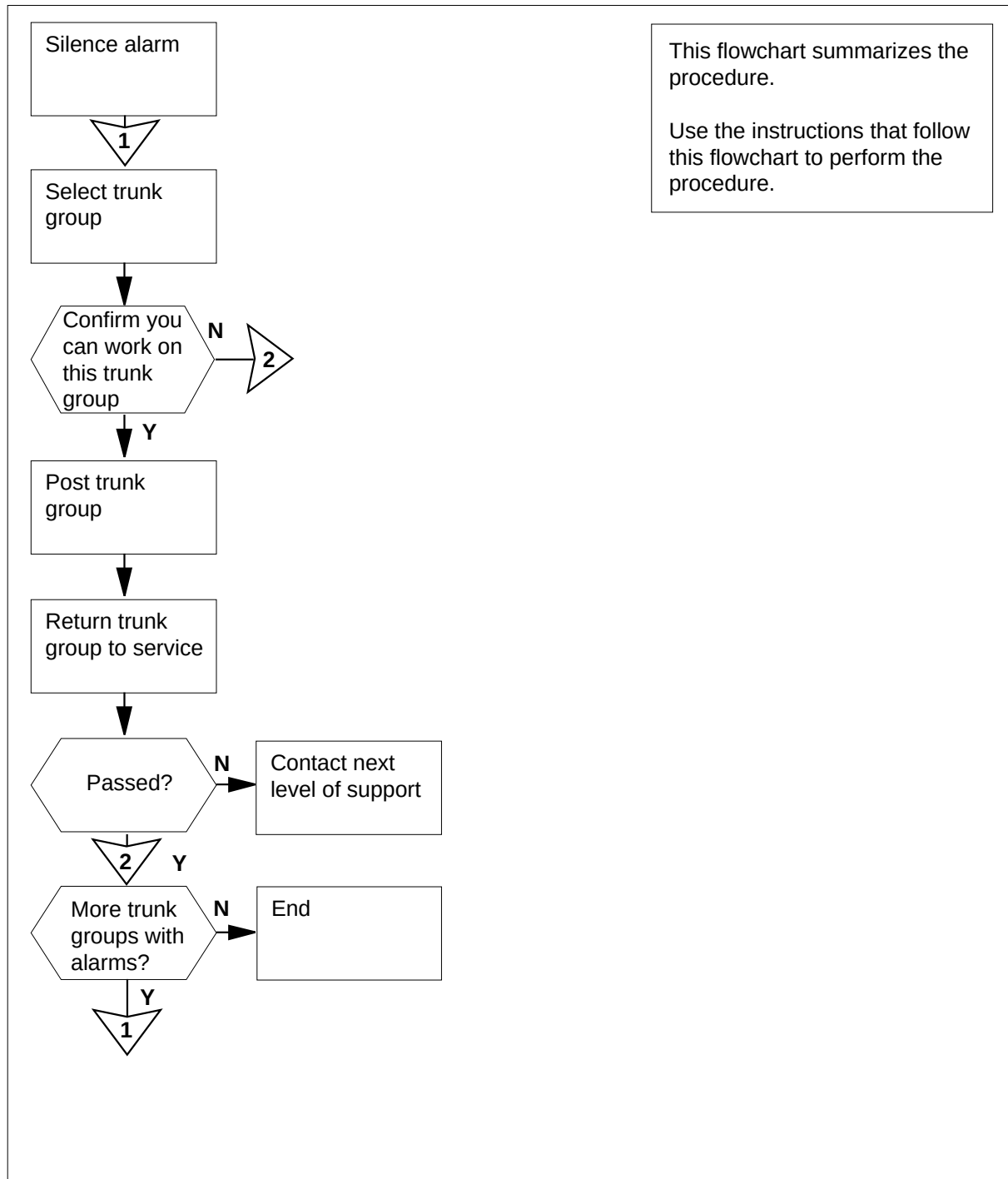
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks MB critical, major, or minor (continued)

Summary of clearing a Trks MB critical, major, or minor alarm



Trks MB critical, major, or minor (continued)

Clearing a Trks MB critical, major, or minor alarm

At the MAP terminal

- 1 To access the STAT level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP display:

TWOY	ITG	OTG	MISC
36GC	49GC	62GC	19GC

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
TRKS:								
STAT:								

- 2 To display details of all trunk groups with a major alarm, type

>DISPGRP ALL MB

and press the Enter key.

Example of a MAP display:

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
0	MISC	MB	DMODEMC 8	8	0	0	24	
1	IC	MB	RSCITDP1	1	0	1	0	36
2	OGC	MB	PDXP_RSC	1	0	1	0	100

- 3 Record the trunk groups displayed in step 2.

- 4 To select a trunk group to work on and record its item number on the display, type

>ITEM item_no

and press the Enter key.

where

item_no

is the item number of the trunk group you want to work on. The item

number appears in the far left column of the MAP display in step 2.

- 5 To display details of trunk circuits in the trunk group, type

>DISALM MB

and press the Enter key.

Trks MB**critical, major, or minor** (continued)

- 6 Maintenance personnel in your office can perform maintenance on this trunk or on PMs related to this trunk. Determine from other maintenance personnel if you can return this trunk group to service.

If you**Do**

are permitted to return the trunk group to service step 7

are not permitted to return the trunk group to service step 10

- 7 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

```

POST          DELQ          BUSYQ          DIG
TTP  6-030
CKT TYPE  PM NO.    COM LANG  STA S R  DOT TE  RESULT

```

```

TTP ID IS:  6-030
12 NEXT      NO CKT,SET IS EMPTY

```

- 8 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name

is the name of the circuit to post. The name appears in the

MAP display in step 5. The name RSCITDP1 is an example of

a circuit.

Example of a MAP display:

```

LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK,CKT POSTED

```

- 9 To return the trunk group to service, type

>RTS ALL

and press the Enter key.

Trks MB
critical, major, or minor (end)

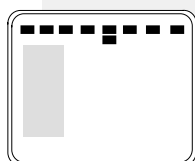
Example of a MAP response:

STATE CHANGED

	If the RTS command	Do
	passed	step 10
	failed	step 13
10	Check the list recorded in step 3. Determine if more trunk groups have a critical, major, or minor alarm.	
	If more trunk groups	Do
	have alarms	step 11
	do not have alarms	step 14
11	To select the next trunk group, type >NEXT and press the Enter key.	
12	Go to step 4.	
13	For additional help, contact the next level of support.	
14	The procedure is complete.	

Trks MJ C and MJ M critical or major

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	.	.	.	MJC	.	.

Indication

At the MTC level of the MAP display, MJ C or MJ M appear under the Trks header of the alarm banner. The MJ C or MJ M indicates a trunk group critical or major alarm. The alarm changes at 30 s intervals with out-of-service alarms, like a GM.

Meaning

An MJ C alarm indicates that the Focused Trunks Maintenance system detected a critical number of failed call attempts. The attempts occurred through a trunk group.

An MJ M alarm indicates that the Focused Trunks Maintenance system detected a major number of failed call attempts. The attempts occurred through a trunk group.

Arrival at the critical alarm threshold set in table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in table TRKMTCE raises a major alarm.

Result

The result of an MJ C or an MJ M alarm depends on the following:

- the type and the size of the trunk group
- the amount of traffic at the time
- the critical or major threshold for failed call attempts by way of a trunk group set in table TRKMTCE

Common procedures

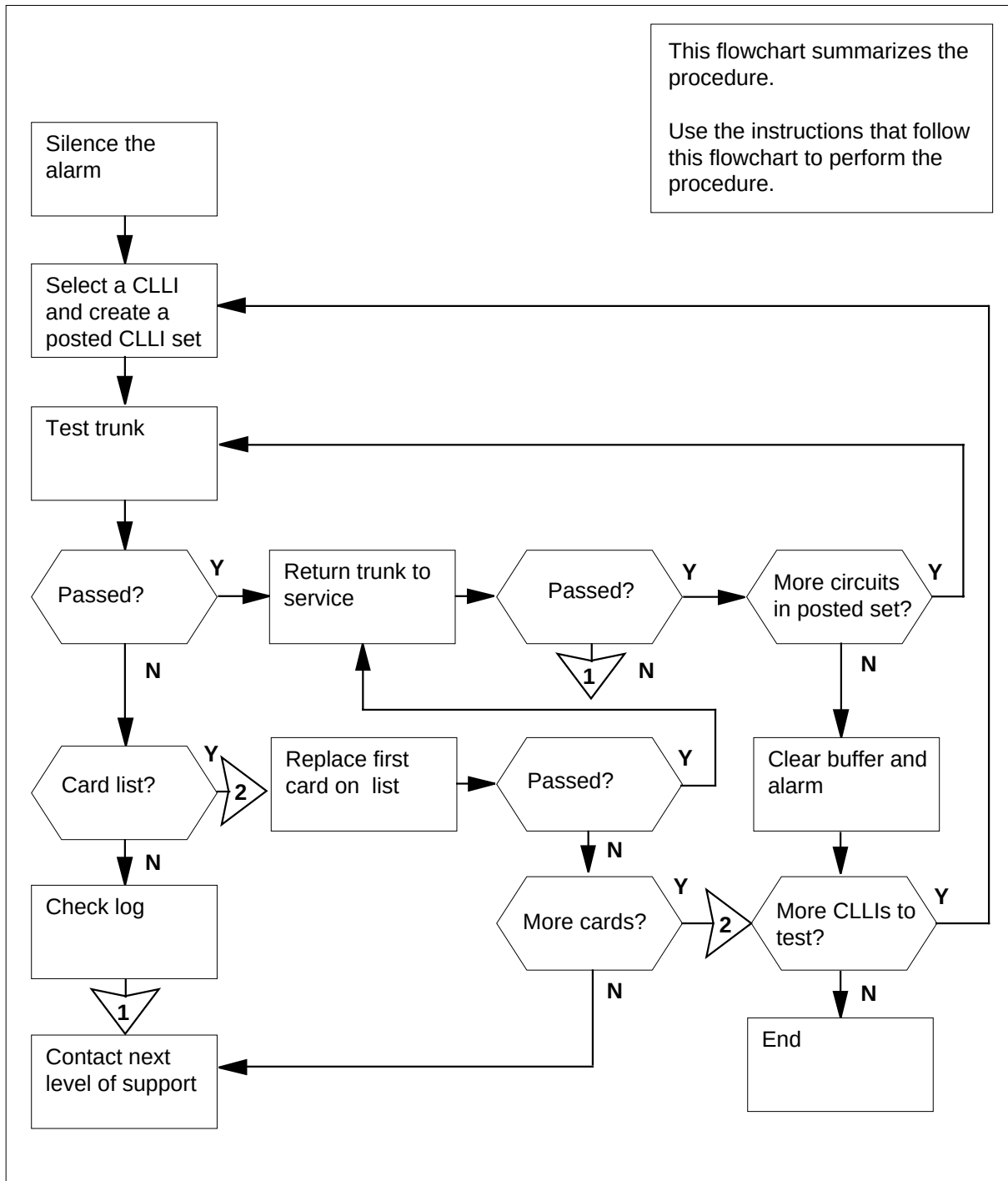
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks MJ C and MJ M critical or major (continued)

Summary of clearing a Trks MJ C and MJ M critical or major alarm



Trks MJ C and MJ M critical or major (continued)

Clearing a Trks MJ C and MJ M critical or major alarm

At the MAP terminal

- 1 To access the TRKSTRBL level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;TRKSTRB;SIL

and press the Enter key.

Example of a MAP display:

	MN	MJ	CR	CLLI:	BT:
M	0	0	0		
CP	0	0	0		

E#	ID	COUNT	LAST TROUBLE TIME	.. TROUBLE DESCRIPTION
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				

- 2 To record the common language location identifiers (CLLIs) of all the trunk groups in the maintenance buffer that have critical alarms, type

>LISTALM alarm_type MJ

and press the Enter key.

where

alarm_type

is CP if the alarm is critical, or M if the alarm is major

Example of a MAP display:

OTRAFDD3	MJ
OTRAFDD2	MJ
OTRAFDD1	MJ

- 3 Select a trunk group on which to work.
- 4 Record the CLLI of the trunk group that you selected. In the MAP display example in step 2, OTRAFDD3 is an example of a CLLI.

Trks MJ C and MJ M critical or major (continued)

- 5 To display the contents of the maintenance buffer for the selected trunk group, type

>DISP clli alarm_type

and press the Enter key.

where

cli

is the CLLI of the trunk group that you selected. An example of a CLLI is OTRAFDD3.

alarm_type

is CP if the alarm is critical, or M if the alarm is major

Example of a MAP display:

```

      MN    MJ    CR    CLLI:OTRAFDD3    BT:CP
M   0      0      0
CP  1      3      9
E# ID    COUNT    LAST TROUBLE TIME..TROUBLE DESCRIPTION..
0  34     109     92/05/19   11:08:11       64.Lockout on
1  36     109     92/05/19   11:08:11       64.Lockout on
2

```

- 6 To create a posted set on which to work, type

>CREATSET clli MJ format

and press the Enter key.

where

cli

is the CLLI of the trunk group that you selected

format

is the way trunks in the posted set appear (HC, MR, HC ALL, MR ALL)

- 7 Record all trunk groups that appear in the posted set.

- 8 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

```

POST          DELQ          BUSYQ          DIG
TTP  6-030
CKT TYPE      PM NO.    COM LANG    STA S R  DOT TE  RESULT

TTP ID IS:    6-030
12 NEXT      NO CKT,SET IS EMPTY

```

- 9 To post the trunk group, type

>POST G trunk_name

Trks MJ C and MJ M
critical or major (continued)

and press the Enter key.

where

trunk_name

is the name of the circuit to post. The circuit appears in the MAP display in step 2. An example of the circuit to post is OTRAFDD3.

Example of a MAP display:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: 0FDD3
OK,CKT POSTED
```

- 10** To manually busy the trunk in the control position, type

>BSY

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

- 11** To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
  CKT  OTRAFDD3  1
  DIAGNOSTIC RESULT CONNECTION FAILURE
  ACTION REQUIRED TRY AGAIN
  CARD TYPE
  ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do

passed	step 16
failed, and the system generated a card list	step 13
failed, and the system did not generate a card list	step 12
failed, connection failure, refer to TRK107 log	step 11

- 12** The system generated a trunk101 log. Record the information in the log. Go to step 28.

Trks MJ C and MJ M critical or major (continued)

- 13** Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.
- 14** To replace the first card on the list, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 15** To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
      CKT   OTRAFDD3   1
```

If the TST command	Do
passed	step 16
failed, and you did not replace all the cards on the list recorded in step 13	step 14
failed, and you replaced all the cards on the list recorded in step 13	step 28

- 16** To return the trunk to service, type

>RTS

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

If the RTS command	Do
passed	step 17
failed	step 28

- 17** To determine if more trunks in the posted trunk group that continue to have an alarm are present, type

>NEXT

and press the Enter key.

If more trunks that continue to have an alarm	Do
are present	step 10

Trks MJ C and MJ M critical or major (continued)

	If more trunks that continue to have an alarm	Do
	are not present	step 18
18	Check the list recorded in step 7. Determine if any more trunk groups with an alarm are present.	
	If more trunk groups with an alarm	Do
	are present	step 19
	are not present	step 21
19	To select the next trunk group, type >STAT and press the Enter key.	
20	Go to step 9.	
21	To access the TRKSTRBL level of the MAP display, type >TRKSTRBL and press the Enter key.	
22	Clear a trunk group from the maintenance buffer. This trunk group returned to service earlier. To clear this trunk group, type >CLRBUF clli alarm_type and press the Enter key. <i>where</i> cli is the CLLI of the trunk group that you selected in step 3. An example of a CLLI is OTRAFIDD3. alarm_type is CP if the alarm is critical, or M if the alarm is major <i>Example of a MAP response:</i> Will clear entire CP upper buffer for OTRAFDD3. Please confirm ("YES" or "NO"):	
23	To confirm the command, type >YES and press the Enter key.	
24	To clear the alarm, type >CLRALM clli alarm_type	

**Trks MJ C and MJ M
critical or major (end)**

and press the Enter key.

where

cli

is the CLI of the trunk group that you selected in step 3. An example of a CLI is OTRAFIDD3.

alarm_type

is CP if the alarm is critical, or M if the alarm is major

Example of a MAP response:

Will clear CP alarm, reset attempt and failure counters.
Please confirm ("YES" or "NO"):

25 To confirm the command, type

>YES

and press the Enter key.

Example of a MAP response:

CP alarm cleared, attempt and failure counters reset.

26 Determine if the alarm cleared.

Note: The status of the alarm appears in the MAP response, like in step 24.

If the alarm	Do
cleared	step 29
did not clear	step 27

27 Check the list recorded in step 2. Determine if you must test more trunk groups.

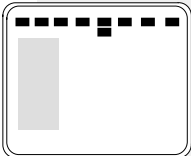
If more trunk groups to test	Do
are present	step 3
are not present	step 29

28 For additional help, contact the next level of support.

29 The procedure is complete.

Trks MN C and MN M critical or major

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	MN C	.	.
								C		

Indication

At the MTC level of the MAP display, MN C or MN M appears under the Trks header of the alarm banner. The MN C or MN M indicates a trunk group critical or major alarm. The alarm changes at 30 s intervals with out-of-service alarms, like a GM.

Meaning

An MN C alarm indicates that the Focused Trunks Maintenance system detected a critical number of failed call attempts. The attempts occurred through a trunk group.

An MN M alarm indicates that the Focused Trunks Maintenance system detected a major number of failed call attempts. The attempts occurred through a trunk group.

Arrival at the critical alarm threshold set in table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in table TRKMTCE raises a major alarm.

Result

The result of a MN C or MN M alarm depends on the following:

- the type and the size of the trunk group
- the amount of traffic at the time
- the critical or major threshold for failed call attempts by way of a trunk group set in table TRKMTCE

Common procedures

There are no common procedures.

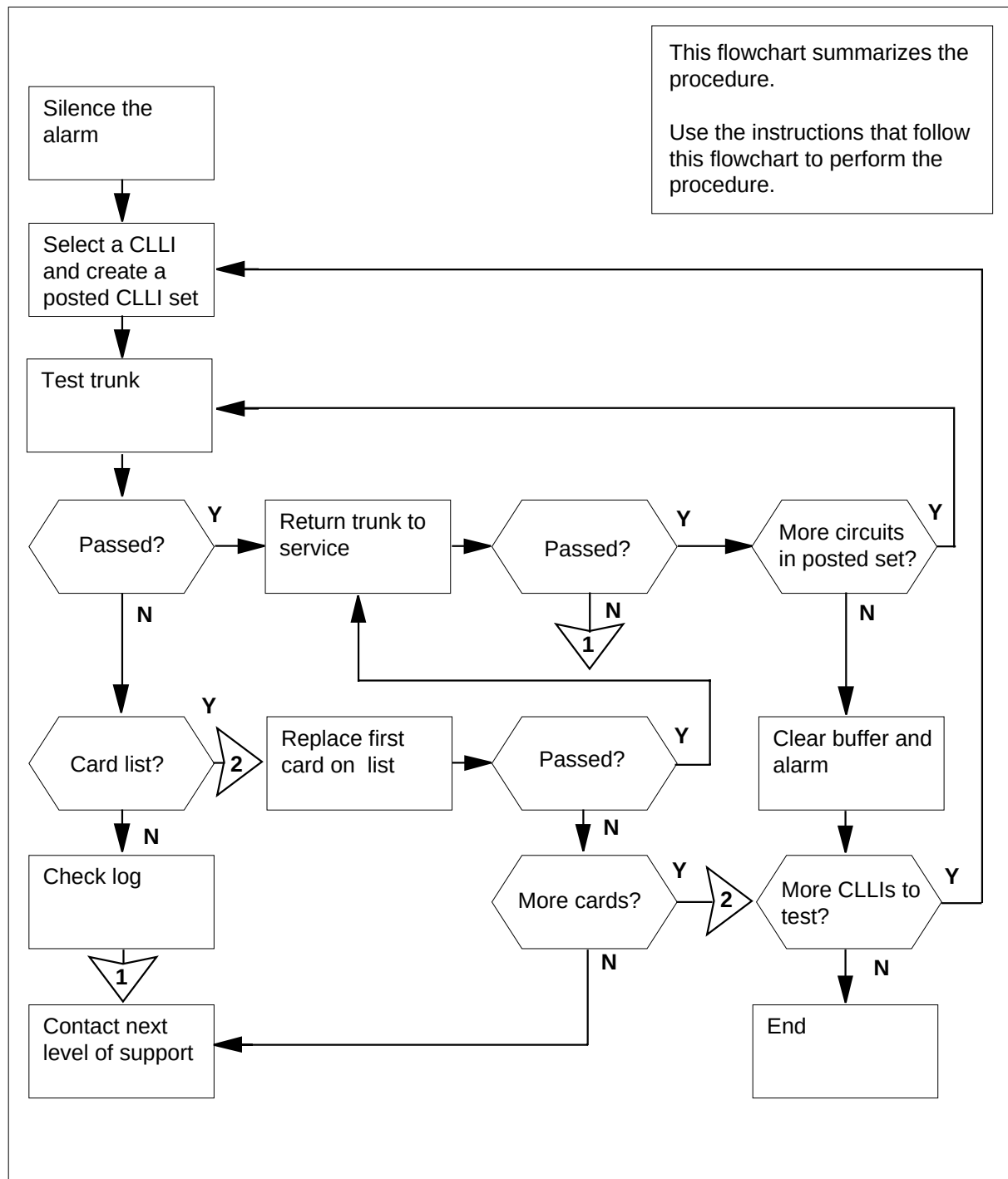
Trks MN C and MN M
critical or major (continued)

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks MN C and MN M critical or major (continued)

Summary of clearing a Trks MN C and MN M critical or major alarm



Trks MN C and MN M critical or major (continued)

Clearing a Trks MN C and MN M critical or major alarm

At the MAP terminal

- 1 To access the TRKSTRBL level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;TRKSTRBL;SIL

and press the Enter key.

Example of a MAP display:

	MN	MJ	CR	CLLI :	BT :
M	0	0	0		
CP	0	0	0		

E#	ID	COUNT	LAST TROUBLE TIME	. TROUBLE DESCRIPTION
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				

- 2 To record the common language location identifiers (CLLIs) of all the trunk groups in the maintenance buffer with critical alarms, type

>LISTALM alarm_type CR

and press the Enter key.

where

alarm_type

is CP if the alarm is critical, or M if the alarm is major

Example of a MAP display:

OTRAFLD MN

- 3 Select a trunk group on which to work.
 - 4 Record the CLLI of the trunk group that you selected. In the MAP display example in step 2, OTRAFLD is an example of a CLLI.
 - 5 To display the contents of the maintenance buffer for the selected trunk group, type
- >DISP clli alarm_type**

Trks MN C and MN M critical or major (continued)

and press the Enter key.

where

cli

is the CLLI of the trunk group that you selected. An example of

a CLLI is OTRAFLD.

alarm_type

is CP if the alarm is critical, or M if the alarm is major

Example of a MAP display:

	MN	MJ	CR	CLLI:OTRAFLD	BT:CP
M	0	0	0		
CP	1	3	10		

E#	ID	COUNT	LAST TROUBLE TIME	DESCRIPTION
0	34	109	92/05/19 11:08:11	64.Lockout on
1	36	109	92/05/19 11:08:11	64.Lockout on
2				

- 6 To create a posted set for maintenance action, type

>CREATSET cli CP format

and press the Enter key.

where

cli

is the CLLI of the trunk group that you selected

format

is the way trunks in the posted set appear (HC, MR, HC ALL,

MR ALL)

- 7 Record all trunk groups that appear in the posted set.

- 8 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

POST	DELQ	BUSYQ	DIG
TTP 6-030			
CKT TYPE	PM NO.	COM LANG	STA S R DOT TE RESULT

TTP ID IS: 6-030
12 NEXT NO CKT,SET IS EMPTY

Trks MN C and MN M critical or major (continued)

- 9 To post the trunk group, type
>POST G trunk_name
 and press the Enter key.
where
trunk_name
 is the name of the circuit to post. The name appears in the
 MAP display in step 2. An example of a circuit is OTRAFLD.
Example of a MAP display:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: XIDD3
OK, CKT POSTED
```

- 10 To manually busy the trunk in the control position, type
>BSY
 and press the Enter key.
Example of a MAP response:

```
STATE CHANGED
```

- 11 To test the trunk, type
>TST
 and press the Enter key.
Example of a MAP response:

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
  CKT  OTRAFLD  1
  DIAGNOSTIC RESULT CONNECTION FAILURE
  ACTION REQUIRED TRY AGAIN
  CARD TYPE
  ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 16
failed, and the system generated a card list	step 13
failed, and the system did not generate a card list	step 12

Trks MN C and MN M critical or major (continued)

	If the TST command	Do
	failed, connection failure, refer to TRK107 log	step 11
12	The system generated a trunk101 log. Record the information in the log. Go to step 28.	
13	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.	
14	To replace the first card on the list, perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
15	To test the trunk, type >TST and press the Enter key. <i>Example of a MAP response:</i> TEST OK MLNR35AT****+TRK107 MAY 19 11:10:11 2400 PASS CKT OTRAFD 1	
	If the TST command	Do
	passed	step 16
	failed, and you did not replace all the cards on the list recorded in step 13	step 14
	failed, and you replaced all the cards on the list recorded in step 13	step 28
16	To return the trunk group to service, type >RTS and press the Enter key. <i>Example of a MAP response:</i> FAILED TO DO	
	If the RTS command	Do
	passed	step 17
	failed	step 28

Trks MN C and MN M critical or major (continued)

- 17** To determine if more trunks in the posted trunk group that continue to have an alarm are present, type
>NEXT
 and press the Enter key.
- | If more trunks that continue to have an alarm | Do |
|--|-----------|
| are present | step 10 |
| are not present | step 18 |
- 18** Check the list that you recorded in step 7. Determine if more trunk groups with alarms are present.
- | If more trunk groups with alarms | Do |
|---|-----------|
| are present | step 19 |
| are not present | step 21 |
- 19** To go to the next trunk group, type
>STAT
 and press the Enter key.
- 20** Go to step 9.
- 21** To access the TRKSTRBL level of the MAP display, type
>TRKSTRBL
 and press the Enter key.
- 22** Clear a trunk group from the maintenance buffer. This trunk group returned to service earlier. To clear this trunk group, type
>CLRBUF clli alarm_type
 and press the Enter key.
where
 cli
 is the CLLI of the trunk group that you selected in step 3.

 An example of a CLLI is OTRAFLD.
 alarm_type
 is CP if the alarm is critical, or M if the alarm is major
Example of a MAP response:

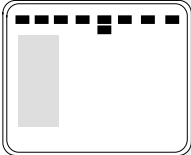
 Will clear entire CP upper buffer for OTRAFLD.
 Please confirm ("YES" or "NO"):

Trks MN C and MN M critical or major (end)

- 23** To confirm the command, type
>YES
 and press the Enter key.
- 24** To clear the alarm, type
>CLRALM clli alarm_type
 and press the Enter key.
where
cli
 is the CLLI of the trunk group that you selected
alarm_type
 is CP if the alarm is critical, or M if the alarm is major
Example of a MAP response:
 Will clear CP alarm, reset attempt and failure counters.
 Please confirm ("YES" or "NO"):
- 25** To confirm the command, type
>YES
 and press the Enter key.
Example of a MAP response:
 CP alarm cleared, attempt and failure counters reset.
- 26** Determine if the alarm cleared.
Note: The status of the alarm is in the MAP response, like step 25.
- | If the alarm | Do |
|---------------|---------|
| cleared | step 29 |
| did not clear | step 27 |
- 27** Check the list recorded in step 2. Determine if you must test more trunk groups to test are present.
- | If more trunk groups to test | Do |
|------------------------------|---------|
| are present | step 3 |
| are not present | step 28 |
- 28** For additional help, contact the next level of support.
- 29** The procedure is complete.

Trks SB critical, major, or minor

Alarm display

	CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
	.	.	.	.	.	.	.	3SB	.	.

Indication

At the MTC level of the MAP display, SB (preceded by a number) appears under the Trks header of the alarm banner. The SB indicates a system busy (SB) alarm.

Meaning

A minimum of one trunk group has a system busy trunk. The system removed these trunks from service.

The number that precedes SB indicates the number of system busy trunks.

- For a critical alarm, a *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, a letter does not appear under the alarm indicator.

Arrival at the critical alarm threshold set in table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in table TRKMTCE raises a major alarm. Arrival at the minor alarm threshold set in table TRKMTCE raises a minor alarm.

Result

The result of an SB alarm depends on the following:

- the type and the size of the trunk group(s)
- the amount of traffic at the time
- the correct critical, major, or minor alarm threshold set in table TRKMTCE for the affected trunk groups

Common procedures

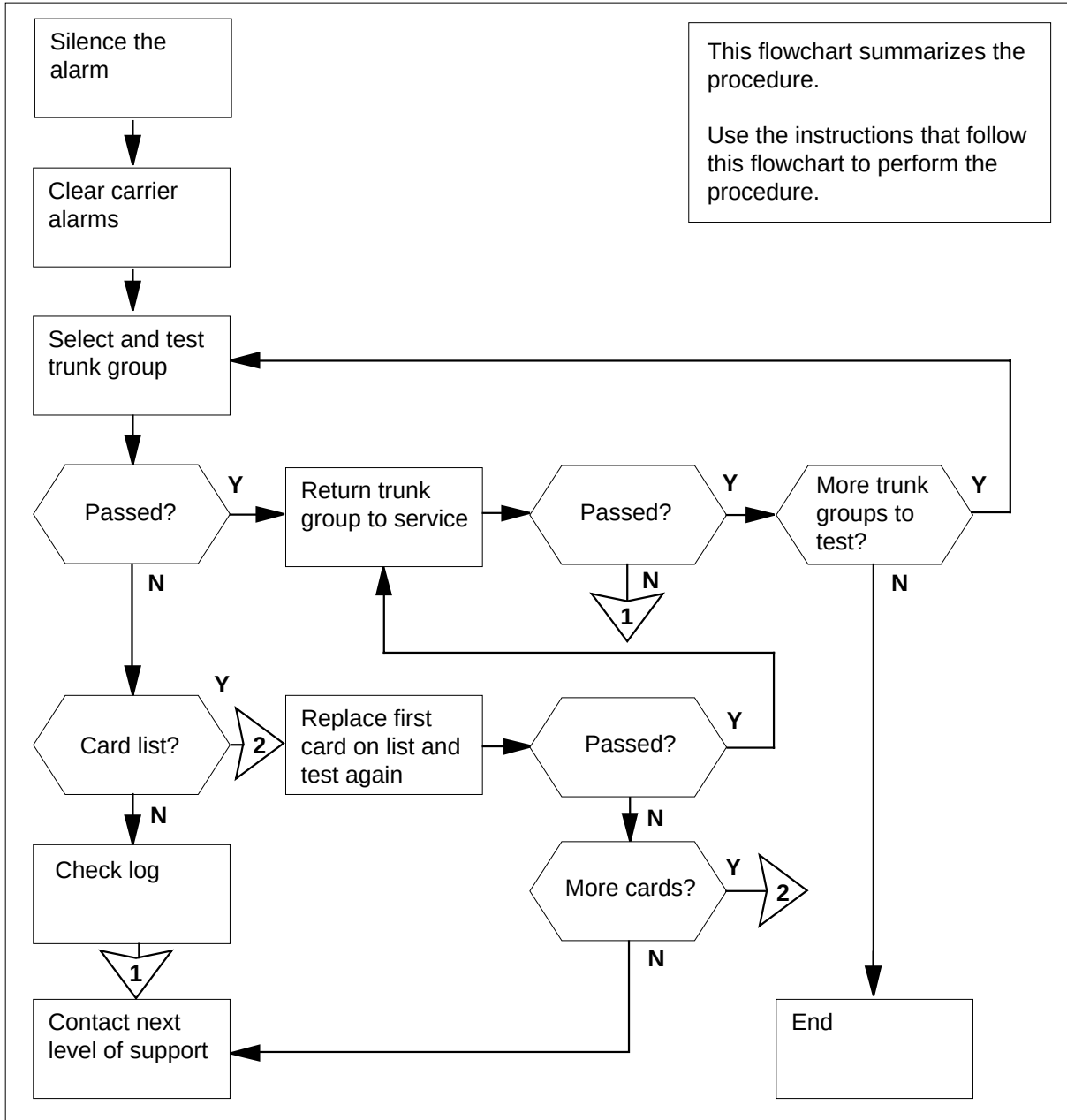
There are no common procedures.

Trks SB critical, major, or minor (continued)

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Summary of clearing a Trks SB critical, major, or minor alarm



Trks SB critical, major, or minor (continued)

Clearing a Trks SB critical, major, or minor alarm

At the MAP terminal

- 1 Perform the procedure *Clearing a C. alarm* in this document. Complete the procedure and return to this point.
- 2 To access the STAT level of the MAP display and silence the alarm, type
>MAPCI;MTC;TRKS;STAT;SIL
and press the Enter key.

Example of a MAP display:

TWOY	ITG	OTG	MISC
36GC	49GC	62GC	19GC

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX
%OS							
TRKS:							
STAT:							

- 3 To display details of all trunk groups with the alarm, type
>DISPGRP ALL SB
and press the Enter key.

Example of a MAP display:

ITEM	TYPE	A	COMLANG	TOT	SB	MB	EX	%OS
0	MISC	SB	DMODEMC 8	8	0	0	100	
1	IC	SB	RSCITDP1	1	0	1	0	100
2	OG	SB	PDXP_RSC	1	0	1	0	100

- 4 Record the trunk groups displayed in step 3.
- 5 To select a trunk group on which to work, type
>ITEM item_no
and press the Enter key.

where

item_no

is the item number of the trunk group on which you want to work.

The item number appears in the far left column of the MAP display in

step 3.

- 6 To display details of trunk circuits in the trunk group, type
>DISALM SB

Trks SB

critical, major, or minor (continued)

and press the Enter key.

- 7 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

POST	DELQ	BUSYQ	DIG
TTP 6-030			
CKT TYPE	PM NO.	COM LANG	STA S R DOT TE RESULT

TTP ID IS: 6-030
12 NEXT NO CKT, SET IS EMPTY

- 8 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name

is the name of the circuit you want to post. The circuit appears

in the MAP display in step 6. An example of a circuit is RSCITDP1.

Example of a MAP display:

LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK, CKT POSTED

- 9 To manually busy the first trunk in the posted trunk group, type

>BSY

and press the Enter key.

Example of a MAP response:

STATE CHANGED

- 10 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

Trks SB

critical, major, or minor (continued)

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
  CKT   RSCITDP1   1
  DIAGNOSTIC RESULT CONNECTION FAILURE
  ACTION REQUIRED TRY AGAIN
  CARD TYPE
  ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 15
failed, and the system generated a card list	step 12
failed, and the system did not generate a card list	step 11
failed, connection failure, refer to TRK107 log	step 10

- 11** The system generated a trunk 101 log. Record the information in the log. Go to step 20.
- 12** Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.
- 13** To replace the first card on the list, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.
- 14** To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
  CKT   RSCITDP1   1
```

If the TST command	Do
passed	step 15
failed, and more cards remain on the list	step 13
failed, and more cards do not remain on the list	step 20

Trks SB
critical, major, or minor (end)

- 15** To return the trunk group to service, type

>RTS

and press the Enter key.

Example of a MAP response:

STATE CHANGED

If the RTS command	Do
passed	step 16
failed	step 20

- 16** To determine if more trunks in the posted trunk group that continue to have an alarm are present, type

>NEXT

and press the Enter key.

If more trunks that continue to have an alarm	Do
are present	step 9
are not present	step 17

- 17** Check the list that you recorded in step 4. Determine if more trunk groups with alarms are present.

If more trunk groups with alarms	Do
are present	step 18
are not present	step 21

- 18** To select the next trunk group, type

>STAT

and press the Enter key.

- 19** Go to step 3.

- 20** For additional help, contact the next level of support.

- 21** The procedure is complete.

3 XAC alarm clearing procedures

Introduction

This chapter provides alarm clearing procedures for the XAC. XAC module alarms appear under the XAC header of the alarm banner in the MAP display. All procedures contain the following sections:

- Alarm display
- Indication
- Meaning
- Result
- Common procedures
- Action

Alarm display

This section indicates how the alarm appears at the MAP terminal.

Indication

This section indicates the location of the alarm indication, the design of the alarm, the affected subsystem, and the alarm severity.

Meaning

This section indicates the cause of the alarm.

Result

This section describes the results of the alarm condition.

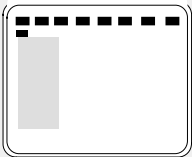
Common procedures

This section lists common procedures that you follow during the alarm clearing procedure. A common procedure is a series of steps that repeats in maintenance procedures. The removal and replacement of a card are examples of a common procedure. The common procedures are in the common procedures chapter in this NTP.

Do not use common procedures unless the stepaction procedure directs you.

Action

This section provides a summary flowchart of the alarm clearing procedure. A detailed step-action procedure follows the flowchart.

**FWsoak
minor****Alarm display**

XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
FWsoak	.	.	.	.	.	.	.	.	.

Indication

The FWsoak alarm appears in the alarm banner of all MTC map levels under the XAC header. The command ALARM FWSOAK lists the field replaceable units (FRU) currently soaking firmware. The system raises the FWsoak alarm when the FRU is returned to service after loading new firmware. The system does not raise the alarm if the soak time for an FRU is set to zero in table XAFWLOAD.

Meaning

The FWsoak alarm indicates the firmware is being soaked on at least one FRU. The alarm clears when the soaking time expires. This alarm requires no action.

Impact

There is no impact.

Common procedures

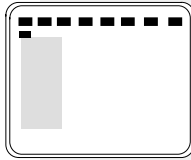
This procedure does not refer to any common procedures.

Action

No action is required. The system automatically clears the alarm when the soak time expires.

FWvers major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
FWvers	.	.	.	.	.	.	.	.	.
M									

Indication

The FWvers alarm appears in the alarm banner of all MTC MAP levels under the XAC header. The FWvers alarm indicates there is a firmware mismatch. The FWvers alarm severity is major.

Meaning

When the system or operating company personnel issues the query card command, the system checks for a firmware mismatch. The system raises the FWvers alarm when the firmware version of the field replaceable unit (FRU) and the firmware version recorded in table XAFWLOAD do not match.

Impact

When the system raises this alarm, it generates log XAC330. When the system clears the alarm, it generates log XAC630. Use the information in these logs when performing this procedure.

Common procedures

This procedure does not refer to any common procedures.

Next level of maintenance

Repeat this procedure if it is not successful when you first perform the procedure.

A problem can occur that requires the help of the local maintenance personnel. Gather all important logs, reports, and system information (that is, product type and current software load) for analysis. The related logs, maintenance notes, and system information help make sure that the next level of maintenance and support can find the problem. More detail about logs appears in the *Log Report Reference Manual*.

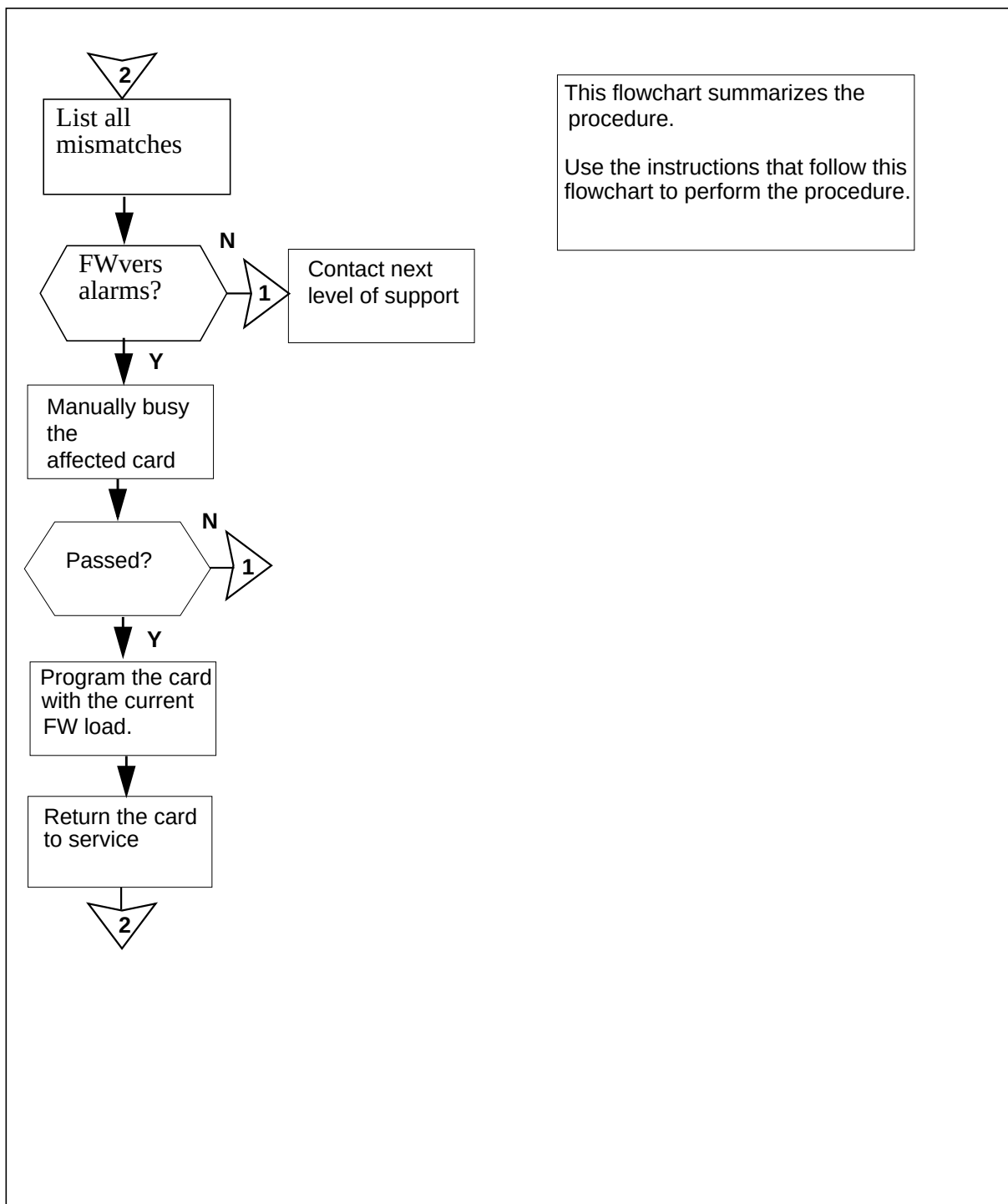
FWvers
major (continued)

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to clear the alarm.

FWvers major (continued)

Summary of clearing alarm FWvers alarm



FWvers major (continued)

Clearing alarm FWvers major

At your current location

- 1** To query FWvers alarms and list all mismatches, type

>ALARM FWVERS

and press the Enter key.

Example of map response

Cause	FRU/device	State	Slot	Side	Packlet
FW version mismatch	PE	InSv	4	front	
FW version mismatch	IOP	InSv	2	front	
FW version mismatch	IOP	InSv	17	front	
FW version mismatch	CMIC	InSv	4	rear	lower

If	Do
any FWvers alarms are listed	step 2
there are no FWvers alarms	step 12

- 2** To access the table XAFWLOAD, type

>TABLE XAFWLOAD

and press the Enter key.

Example of map response

JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: XAFWLOAD

- 3** To review the tuples in the table, type

>LIST ALL

and press the Enter key.

Example of map response

```

INDEX FRU PEC VERSION VOLUME FILE STATUS SOAK
-----
1 PE   NTLX02AA XAPE01AC F02LFWLOADS PEFW413 old 48
2 PE   NTLX02AA XAPE01AG F02LFWLOADS PEFW421 current 48
3 PE   NTLX02AA XAPE01BA F02LFWLOADS PEFW424 old 48
4 IOP  NTLX03AA XAI001AA F02LFWLOADS ISEFW41 old 0
5 IOP  NTLX03AA XAI001AC F02LFWLOADS ISEFW44 current 0
6 CMIC NTLX05AA PK10CU10 F02LFWLOADS 0C3FW75 current 72

BOTTOM

```

- 4** To query the card with an associated FWvers alarm, type

>QUERY CARD slot

and press the Enter key.

FWvers major (continued)

where

slot

is the slot position of the card (for example, 4 Front)

Example of map response

```
query card 4 f
Command Submitted.
Query 4 front completed
PEC       : NTLX02AA
Serial No. : 0000000000000000
Firmware Ver: XAPE01AG
```

Record the information.

- 5 To access the appropriate MAP level to program the FLASH with the current firmware version and clear the alarm, type

>MAPCI;MTC;XAC;map level

and press the Enter key.

where

map level

is the name of the map level (for example, PE, IOP or CMIC)

Example of map response

```
XAC MS IOD          APPL
FWvers . . .
M
```

- 6 To manually busy the card, type

>BSY slot FORCE

or

>BSY slot

Note: If this command reduces redundancy, you must use the Force option.

and press the Enter key.

where

slot

is the slot position of the card (for example, 4 Front)

Example of map response

Warning: Bsy command will take it out of service.

Proceed (Y or N)?

Please confirm ("YES", "Y", "NO", or "N"):

- 7 To confirm the action, type

>Y

FWvers major (continued)

and press the Enter key.

If	Do
the response is Command Submitted. Bsy 4 front completed	step 8
the response is Command Submitted. Bsy 4 front failed	step 11

- 8 To program the card with the current FW load, type

>LOADFW slot FILE CURRENT

and press the Enter key.

where

slot

is the slot position of the card (for example, 4 Front)

If	Do
the response is Command Submitted. LoadFW 4 front completed	step 9
the response is Command Submitted. LoadFW 4 front failed Volume nonexistent.	step 11

- 9 To return the card to service, type

>RTS slot

and press the Enter key.

where

slot

is the slot position of the card (for example, 4 Front)

If	Do
the response is Command Submitted. RTS 4 front passed	step 10
the response is Command Submitted. RTS 4 front failed	step 11

- 10 To query all FWvers alarms and list all mismatches, type

>ALARM FWVERS

FWvers major (end)

and press the Enter key.

Example of map response

Cause	FRU/device	State	Slot	Side	Packlet
FW version mismatch	IOP	InSv	2	front	
FW version mismatch	IOP	InSv	17	front	
FW version mismatch	CMIC	InSv	4	rear	lower

If	Do

any FWvers alarms are listed	step 2

there are no FWvers alarms	step 12

11 Contact your next level of support.

12 The procedure is complete.

4 Alarm clearing common procedures

Introduction to alarm clearing common procedures

This chapter provides alarm clearing common procedures. A common procedure is a series of steps that repeats in maintenance procedures. An example of a common procedure is the removal and replacement of a card. All common procedures contain the following sections:

- Application
- Action

Application

This section describes the purpose of the common procedure.

Action

This procedure provides a summary flowchart of the alarm clearing common procedure. A detailed step-action procedure follows the flowchart.

Note: Do not go to the common procedure unless the step-action procedure directs you to go.

Accessing SPM alarms

DMS-Spectrum Peripheral Module

The DMS-Spectrum Peripheral Module (SPM) includes visual indicators on the frame, on each shelf, and on each module. The visual indicators consist of three colors of light emitting diodes (LED). Visual alarm indications are described in the *DMS-Spectrum Peripheral Module Hardware Maintenance Reference Manual* (297-1771-550).

Causes of SPM alarms

There are three different causes of SPM alarms; these alarms are reported by various devices. These devices can be part of the SPM or part of the DMS alarm reporting system.

SPM alarms can be caused by

- device failures - Physical devices generate alarms when a detectable failure occurs. SYSBNA is an example of this type of alarm.
- network events - Various sources generate network-event alarms when monitored events occur on the network. AIS and LOS are examples of this type of alarm.
- threshold crossings - Alarms generate when monitored parameters or metered parameters exceed their datafilled settings. SPM devices or network events, or both, can cause these alarms. COTLOW and VCXO70 are examples of these types of alarms.

SPM alarms can be reported by

- an SPM network node

An SPM node consists of all the modules on shelves 0 and 1, which connect to the OC3 network through the OC3 modules in slot 9 and slot 10 on shelf 0.

- individual SPM modules

The following SPM modules can generate alarms:

- common equipment module (CEM)
- OC3 interface module (OC3)
- digital signal processor (DSP)
- voice signal processor (VSP)

Accessing SPM alarms

DMS-Spectrum Peripheral Module (continued)

- asynchronous transfer mode (ATM)
- data link controller (DLC)
- the DMS computing module (CM), which reports alarms for
 - input/output devices (IOD)
 - common channel signaling (CCS)
 - trunks (TKRS)
 - carriers (CARR)

SONET carriers

SONET carriers can generate alarms at the following DMS computing CM alarm reporting levels:

- trunks (Trks)
- input/output devices (IOD)
- common channel signaling (CSS)

Threshold-crossing alarms

The SPM CEM and the DMS CM can generate threshold-crossing alarms. Threshold-crossing alarms are one of the following types:

- steady state faults
- performance parameters
- metered performance parameters

High-threshold and low-threshold values for the various alarms can be datafilled in DMS data schema tables. Alarms generate when the high-value threshold is crossed and they clear when the low-value threshold is crossed. See the alarm descriptions for the appropriate DS table references.

Steady state faults

Steady state faults, or soaked defects, occur when a performance parameter crosses an upper threshold and remains above the lower threshold value for an extended period. AIS and RFI are examples of steady-state fault alarms.

Performance parameters

Performance parameters are counts of intermittent defects. Alarms generate when counts exceed threshold values. Performance parameters are collected over 15-minute periods and one-day periods. Performance parameter counts are reset when collection periods end. CV and ES are examples of performance parameter alarms.

Accessing SPM alarms

DMS-Spectrum Peripheral Module (continued)

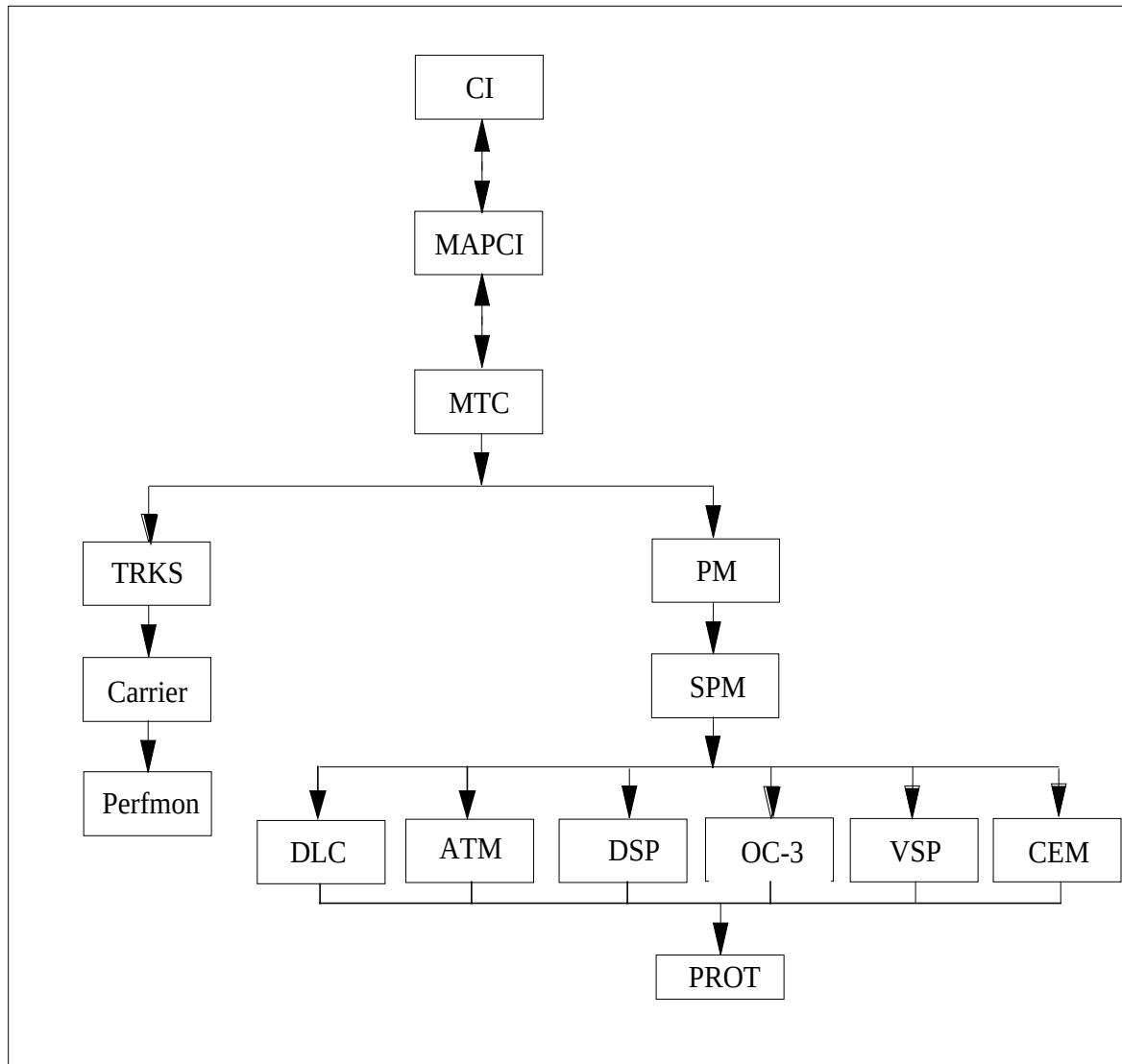
Metered performance parameters

Metered performance parameters are physical measurements. Alarms generate when a measured value exceeds its benchmark setting by the datafilled percentage. Benchmark settings can be reset. LBR and OPT are examples of metered performance parameter alarms.

MAPCI levels for SPM

The following diagram shows the levels of the MAP screen that display information about the SPM.

Accessing SPM alarms DMS-Spectrum Peripheral Module (continued)



Accessing SPM alarms

DMS-Spectrum Peripheral Module (continued)

SPM alarms

The following table lists the alarms for the SPM and indicates the resource or control parameter generating the alarm.

(Sheet 1 of 2)

Alarm name	SPM node	CEM	OC3	DSP	VSP	DLC	DMST RKS	CARR METER	CARR PERF
<i>Alarms appearing under the CCS banner</i>									
LBC								X	
OPT								X	
OPR								X	
<i>Alarms appearing under the IOD banner</i>									
CSS									X
CV									X
CVFE									X
ES									X
ESFE									X
SEFS									X
SES									X
SESFE									X
UAS									X
UASFE									X
<i>Alarms appearing under the PM banner</i>									
CLKOOS		X							
COTLOW	X								
DTMFLOW	X								
ECANLOW	X								
HLDOVR		X							

Accessing SPM alarms DMS-Spectrum Peripheral Module (continued)

(Sheet 2 of 2)

Alarm name	SPM node	CEM	OC3	DSP	VSP	DLC	DMST RKS	CARR METER	CARR PERF
HLDOVR24		X							
MANB	X	X	X	X	X	X			
MANBNA	X	X	X	X	X				
MFLOW	X								
ISTB	X	X				X			
NOSPARE			X	X	X				
PROTFAIL			X	X	X	X			
SYSB	X	X	X	X	X	X			
SYSBNA	X	X	X	X	X				
TONESLOW	X								
VCXO70		X							
VCXO90		X							
<i>Alarms appearing under the TRKS banner</i>									
AIS							X		
BERSD							X		
BERSF							X		
LOF							X		
LOP							X		
LOS							X		
RAI							X		
RFI							X		

The following sections describe the common steps required to access alarms at the unit, module, and protection levels of the SPM. The section also includes typical screen views for each level. The SPM, OC3, and PROT levels of the

Accessing SPM alarms

DMS-Spectrum Peripheral Module (continued)

MAP screen are the examples used. The commands and screen views for the other MAP levels are similar.

Accessing the SPM screen

Follow the steps in this section to access the SPM unit -level screen and list the alarms on a SPM unit.

Note: The screen views are examples. The values that appear in the actual screens you view may be not be the same.

Accessing the SPM screen

At the MAP terminal:

- 1 Access the PM screen level of the MAP display by typing
>MAPCI ; MTC ; PM
and pressing the Enter key.
- 2 Access the SPM screen by typing
>POST SPM spm_no
and pressing the Enter key.

where

spm_no is the number of an SPM (0 to 63)

The following screen view is an example of a PM screen containing SPM information. The example includes the following information about SPM units:

- the NTLX51AA dual-shelf assembly module locations
- the shelf number (Shlf0 and Shlf1)
- the slot number (SL)
- the active state (A)
- the status (Stat)

Accessing SPM alarms

DMS-Spectrum Peripheral Module (continued)

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.      .      .      .      .      .      .      .      .      .
.
SPM
0 Quit
2 Post_
3 ListSet
4 ListRes
5 Trnsl
6
7
8
9
10
11 Disp_
12 Next
13 Select_
14 QueryPM
15 ListAlm
16
17
18

14:12 >

```

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
SPM				SysB	ManB	OffL	CBsy	ISTb	InSv
0 Quit	PM			0	0	0	0	0	1
2 Post_	SPM			0	0	0	0	0	1
3 ListSet									
4 ListRes									
5 Trnsl									
6									
7									
8									
9									
10									
11 Disp_									
12 Next									
13 Select_									
14 QueryPM									
15 ListAlm									
16									
17									
18									

3 List the alarms by typing

>LISTALM

and pressing the Enter key.

Example of the alarm section of an SPM screen:

```

ListAlm
ListAlm: SPM 11  OC3

SEVERITY      ALARM      ACTION
-----
Critical      None
Major         HOLDOVER      RPT
Minor         None
No_Alarm      None

```

The alarm section of the SPM screen lists the alarms according to severity (Critical, Major, Minor, or No_Alarm), the alarm name, and action (RPT = reportable, NRPT = not reportable) for the SPM unit.

Accessing SPM alarms

DMS-Spectrum Peripheral Module (continued)

SPM level alarms

The following table lists the SPM-level alarms and their default values.

Alarm name	Severity	Action
SYSB	Critical (CR)	RPT
MANB	Major (MJ)	RPT
ISTB	Minor (MN)	RPT
INSVNA	Critical (CR)	RPT
ISTBNA	Critical (CR)	RPT
SYSBNA	Critical (CR)	RPT
MANBNA	Major (MJ)	RPT
COTLOW	Minor (MN)	RPT
DTMFLOW	Minor (MN)	RPT
ECANLOW	Minor (MN)	RPT
TONESLOW	Minor (MN)	RPT
MFLOW	Minor (MN)	RPT

Accessing the OC3 screen

Follow the steps in this section to access the OC3 module-level screen and to check the alarms on an SPM OC3 module.

Note: The screen views are examples. The values that appear in the actual screens you view may be not be the same.

Accessing SPM alarms

DMS-Spectrum Peripheral Module (continued)

Accessing the OC3 screen

At the MAP terminal:

- 1 From the SPM screen, access the OC3 card by typing

SELECT oc3_no

and pressing the enter key.

where

oc3_no is the number of an OC3 card (0 or 1)

The following screen view is an example of an OC3 screen. The example contains the following OC3 information:

- the number of the SPM unit containing the OC3 module (SPM 11)
- the number of the OC3 module (OC3 0)
- the active state of the OC3 module (Act INSV)
- the location of the OC3 module in the SPM unit (Row A, FrPos 0, ShPos 6, ShID 0, Slot 9)
- the protection group the OC3 has been assigned to (Prot Grp: 1)
- the name of the default OC3 software load (Default Load: OC3LOAD)
- the protection role played by the OC3 (Prot Role: Working)

Accessing SPM alarms

DMS-Spectrum Peripheral Module (continued)

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.      .      .      .      .      .      .      .      .      .

OC3
0 Quit
2
3 ListSet
4
5
6 Tst
7 Bsy
8 RTS
9 OffL
10 LoadMod
11
12 Next
13 Select_
14 QueryMod
15 ListAlm
16 Prot
17
18

14:12 >

```

CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
0	Quit	PM		SysB	ManB	OffL	CBsy	ISTb	InSv
2		SPM		0	0	0	0	0	1
3	ListSet	OC3		0	0	0	0	0	1
5		SPM 11	OC3 0	Act	INSV				
7	Bsy	Loc : Row A FrPos 0 ShPos 6 ShId 0 Slot 9 Prot Grp : 1							
8	RTS	Default Load: OC3LOAD Prot Role: Working							

- List the alarms on an OC3 module by typing

>LISTALM

and pressing the enter key.

Example of the alarm section of the OC3 screen:

```

ListAlm
ListAlm: SPM 11  OC3

SEVERITY      ALARM      ACTION
-----
Critical      None
Major         PROTFAIL      RPT
Minor         None
No_Alarm      None

```

The alarm section of the OC3 screen lists the alarms according to severity (Critical, Major, Minor, or No_Alarm), the alarm name, and action (RPT = reportable, NRPT = not reportable) for the OC3 module.

Accessing SPM alarms

DMS-Spectrum Peripheral Module (continued)

OC3 level alarms

The following table lists the OC3-level alarms and their default values.

Alarm name	Severity	Action
SYSB	Critical	RPT
MANB	Major	RPT
ISTB	Minor	RPT
PROTFail	Critical	RPT

Accessing the protection screen

Follow the steps in this section to access the protection-level screen and check the protection alarms on an SPM module.

Note: The screen views are examples. The values that appear in the actual screens you view may not be the same.

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

Accessing the protection screen

At the MAP terminal:

- 1 From any module-level screen, access the protection screen by typing
>PROT
and pressing the enter key.

The following screen view is an example of a protection screen. The example contains the following protection information about an OC3 module:

- the number of the SPM unit containing the OC3 module (SPM 11)
- the module protection group (OC3_GRP 1)
- the protection mode (non-revertive)
- the protection schema (one_plus_one)
- the shelf position of the OC3 modules (9 and 10)
- the unit number (0 and 1)
- the protection role (W and S)
- the active state of the module (A or I)
- the status of the module (InSv)

Protectn

0 Quit

2

3

4

5

6

7 Force

8 Manual

9

10

11

12

13 Select_

14

15 ListAlm

16

17

18

CM

MS

IOD

Net

PM

CCS

Lns

Trks

Ext

APPL

.

.

.

.

.

.

.

.

.

.

SysB

ManB

OffL

CBsy

ISTb

InSv

0

0

0

0

0

1

0

0

0

0

0

1

2

SPM

11

InSv

Prot Grp: OC3_GRP 1

Mode: Non-revertive

Schema: one_plus_one

Sh0 U R A Stat

Sh0 U R A Stat

Sh1 U R A Stat

Sh1 U R A Stat

1 -- - - - -

8 -- - - - -

1 -- - - - -

8 -- - - - -

2 -- - - - -

9 0 W A InSv

2 -- - - - -

9 -- - - - -

3 -- - - - -

10 1 S I InSv

3 -- - - - -

10 -- - - - -

4 -- - - - -

11 -- - - - -

4 -- - - - -

11 -- - - - -

5 -- - - - -

12 -- - - - -

5 -- - - - -

12 -- - - - -

6 -- - - - -

13 -- - - - -

6 -- - - - -

13 -- - - - -

7 -- - - - -

14 -- - - - -

7 -- - - - -

14 -- - - - -

PROT:

14:12

>

- 2 List the alarms at the protection level by typing
>LISTALM

Accessing SPM alarms DMS-Spectrum Peripheral Module (end)

and pressing the enter key.

Example of the alarm section of a PROT screen:

```
ListAlm
ListAlm: OC3_GRP 1

SEVERITY    ALARM    ACTION
-----
Critical    None
Major       None
Minor       None
No_Alarm    None
```

The alarm section of the OC3 screen lists the alarms according to severity (Critical, Major, Minor, or No_Alarm), the alarm name, and action (RPT = reportable, NRPT = not reportable) for the OC3 module.

Protection level alarms

The following table lists the protection-level alarms and their default values.

Alarm name	Severity	Action
PROTFail	Critical	RPT
NOSPARE	Major	RPT

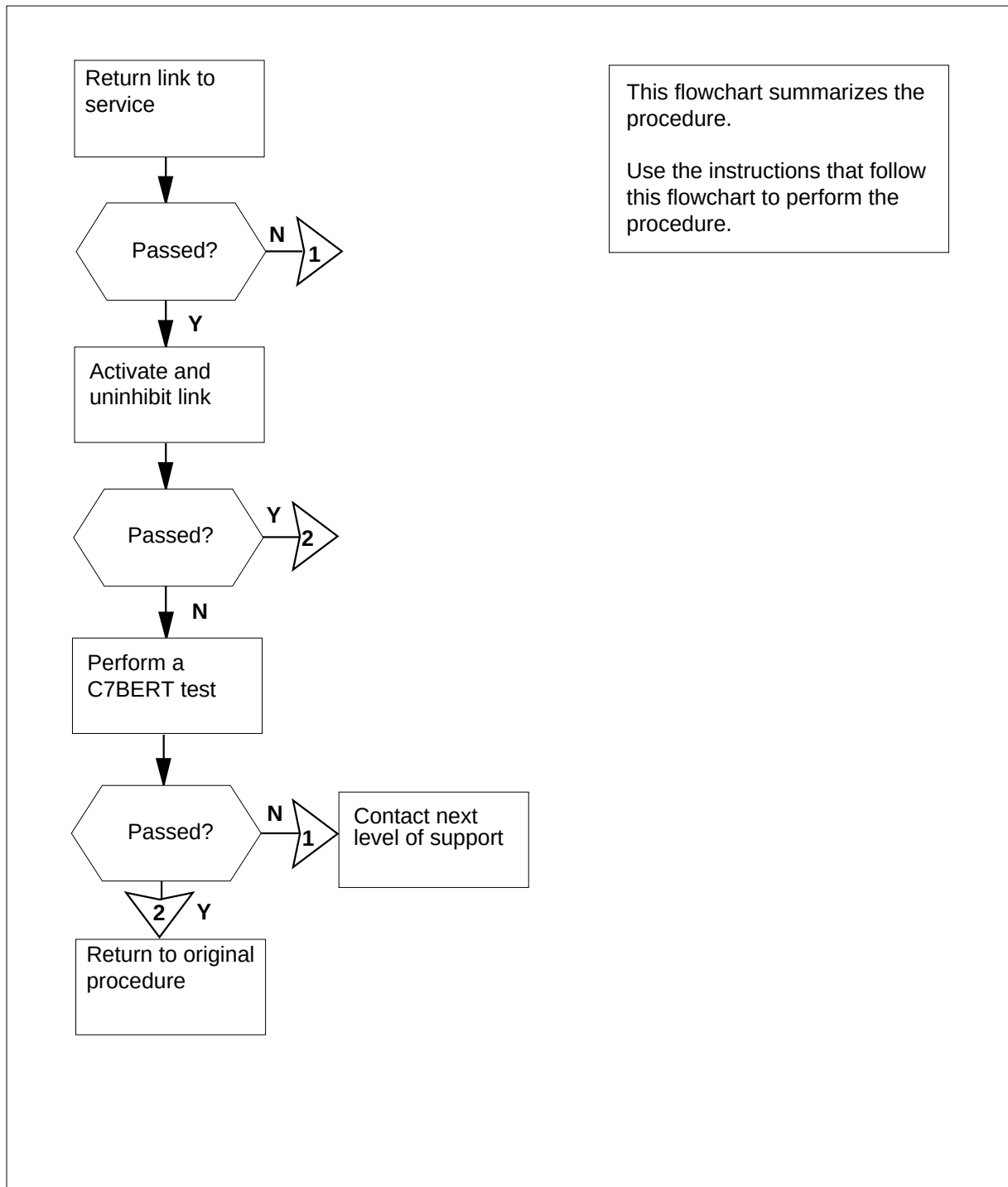
Activating CCS7 links

Application

Use this procedure to activate out-of-service CCS7 links.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Activating CCS7 links (continued)**Summary of Activating CCS7 links**

Activating CCS7 links (continued)

Activating CCS7 links



DANGER

Possible equipment damage or loss of service

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, you can cause equipment damage or loss of service.

At the MAP terminal

- 1 Determine the traffic state of the link.

Note: The link traffic state appears under the Traf Stat header of the MAP display.

If the link traffic state	Do
is RInh	step 2
is LInh	step 5
is ManB	step 11
is ISTb or SysB	step 13

- 2 Determine from office records the far-end office that connects to the posted linkset.
- 3 Contact the far-end office to determine why the link is inhibited from that location.
- 4 Wait until the far-end office restores the link. Determine the traffic state of the remote inhibited link.

Note: The link traffic state appears under the Traf Stat header of the MAP display.

Example of a MAP Display:

Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

```

Linkset   SSP100_LK           ISTb
  Traf Sync
LK Stat   Stat Resource  Stat Physical Access      Link
0  InSv   Sync  LIU7 101  InSv DS0A      Stat Action
1  ISTb   Sync  LIU7 103  InSv DS0A

```

Size of Posted Set = 2

If the traffic link state	Do
is InSv	step 31

Activating CCS7 links (continued)

	If the traffic link state	Do
	is LInh	step 5
	is ManB	step 11
	is ISTb or SysB	step 13
5	Determine from office records or from operating company personnel why the link is locally inhibited.	
6	When you have permission, uninhibit the link. To uninhibit the link, type: >UINH link_no and press the Enter key. <i>where</i> link_no is the number of the inhibited link (0 to 15)	
	If the UINH command	Do
	passed	step 7
	fails, and this time is the first time you attempted to uninhibit the link	step 8
	fails, and this time is the second time you have attempted to uninhibit the link	step 30
7	Determine the link traffic state. Note: The link traffic state appears under the Traf Stat header of the MAP display.	
	If the traffic link state	Do
	is InSv	step 31
	is ManB	step 11
	is RInh	step 2
	is ISTb or SysB	step 13
8	Contact the next level of support to determine if datafill for the link changed at either end of the link.	
	If the datafill	Do
	changed at either end of the link	step 9

Activating CCS7 links (continued)

	If the datafill	Do
	did not change at either end of the link	step 10
9	Consult the next level of support for instructions to correct the problem. When you correct the problem, go to step	
10	Consult the next level of support to determine why the UINH command failed. When you have permission, go to step	
11	Determine from office records or from operating company personnel why the link is manual busy. When you have permission, continue with this procedure.	
12	To return the link to service, type >RTS link_no and press the Enter key. <i>where</i> link_no is the number of the manual busy link (0 to 15)	
	If the RTS command	Do
	failed	step 30
	passed, but the link traffic state is RInh	step 2
	passed, but the link traffic state is LInh	step 5
	passed, and the link traffic state is ISTb or SysB	step 13
	passed, and the link traffic state is InSv	step 31
13	Determine the link synchronization state. Note: The link synchronization state appears under the Sync Stat header of the MAP display. <i>Example of a MAP Display:</i> Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.	

Activating CCS7 links (continued)

```

Linkset  SSP100_LK      ISTb
      Traf Sync
LK Stat   Stat Resource Stat Physical Access  Link
0  SysB DAct LIU7 101  InSv DS0A      Stat Action
1  ISTb Sync LIU7 103  InSv DS0A

```

Size of Posted Set = 2

If the link synchronization state	Do
is Sync or A lnd	step 22
is DAct	step 19
is other than listed here	step 14

- 14** To inhibit the link, type
>INH link_no and press the Enter key.
where
link_no
is the number of the link (0 to 15) you want to synchronize

If the INH command	Do
passed	step 15
failed, and the link traffic state is SysB	step 15
failed, and the link traffic state is ISTb	step 30

- 15** To manually busy the link, type
>BSY link_no
and press the Enter key.
where
link_no
is the number of the link (0 to 15) that you inhibited in step 14

If the response	Do
is Link link_no:Traffic is running on that link Please confirm ("YES", "Y", "NO", or "N"):	step 16

Activating CCS7 links (continued)

	If the response	Do
	is other than listed here, (includes additional messages with previous response)	step 30
16	To confirm the command, type >YES and press the Enter key.	
17	To deactivate the link, type >DEACT link_no and press the Enter key. <i>where</i> link_no is the number of the link (0 to 15) that you manually busied in step 15	
18	To return the link to service, type >RTS link_no and press the Enter key. <i>where</i> link_no is the number of the link (0 to 15) that you deactivated in step 17	
19	To activate the link, type >ACT link_no and press the Enter key. <i>where</i> link_no is the number of the link (0 to 15) that you returned to service in step 18	
	If the ACT command	Do
	passed, and the link synchronization state is Sync or Alnd	step 22
	passed, and the link synchronization state is not Sync or Alnd	step 20
	failed	step 20
20	Wait eight minutes to determine if the link activates.	
	If the link synchronization state	Do
	is Sync or Alnd	step 22

Activating CCS7 links (continued)

		If the link synchronization state	Do
		is other than listed here, and you did not ask the far-end office to activate the link	step 21
		is other than listed here, and you asked the far-end office to activate the link	step 30
21	Contact the far-end office. Tell operating company personnel at the location that:		
	- you must busy, deactivate, return to service and activate the link to realign the link - you must activate the link from both ends when you busy, deactivate and return the link to service		
	After you have checked the link from both ends, check the link synchronization.		
		If the link synchronization state	Do
		is Sync or Alnd	step 22
		is other than listed here	step 20
22	Determine the traffic state of the link.		
	Note: The link traffic state appears under the Traf Stat header on the MAP display.		
	<i>Example of a MAP display:</i>		
	Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.		
	<pre> Linkset SSP100_LK SYSB Traf Sync LK Stat Stat Resource Stat Physical Access Link 0 SysB Sync LIU7 101 InSv DS0A Stat Action 1 ISTb Sync LIU7 103 InSv DS0A </pre>		
	Size of Posted Set = 2		
		If the link traffic state	Do
		is InSv	step 31
		is LInh	step 29
		is other than listed here	step 23

Activating CCS7 links (continued)

- 23 To inhibit the link, type
>INH link_no
and press the Enter key.
where
link_no
is the number of the link (0 to 15)

If the INH command	Do
passed	step 24
failed, and the link traffic state is SysB	step 24
failed, and the link traffic state is ISTb	step 30

- 24 To manually busy the link, type
>BSY link_no
and press the Enter key.
where
link_no
is the number of the link (0 to 15)

If the response	Do
is Link link_no:Traffic is running on that link Please confirm ("YES", "Y", "NO", or "N"):	step 25
is other than listed here, (includes additional messages with previous response)	step 30

- 25 To confirm the command, type
>YES
and press the Enter key.

- 26 To return the link to service, type
>RTS link_no
and press the Enter key.
where

Activating CCS7 links (end)**link_no**

is the number of the link (0 to 15)

		If the RTS command	Do
		passed, and the link is LInh	step 29
		passed, and the link is InSv	step 31
		failed, and this is the first time you attempted the RTS command at this point	step 27
		failed, and this is the second time you attempted the RTS command at this point	step 30
27	Perform the procedure <i>Running a C7BERT</i> in this document. Complete the procedure and return to this point.		
	Note: Perform a CCS7 bit error rate test (C7BERT) on any link in the posted linkset that fails the RTS step in step 26.		
	Go to step 28.		
28	The results of the C7BERT determine your next action.		
		If the C7BERT instructed you	Do
		to return the link to service	step 26
		not to return the link to service	step 30
29	To uninhibit the link, type >UINH link_no and press the Enter key. where link_no is the number of the link (0 to 15)		
		If the UINH command	Do
		passed, and the link is InSv	step 31
		passed, and the link is not InSv	step 30
		failed	step 30
30	For additional help, contact the next level of support.		
31	The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.		

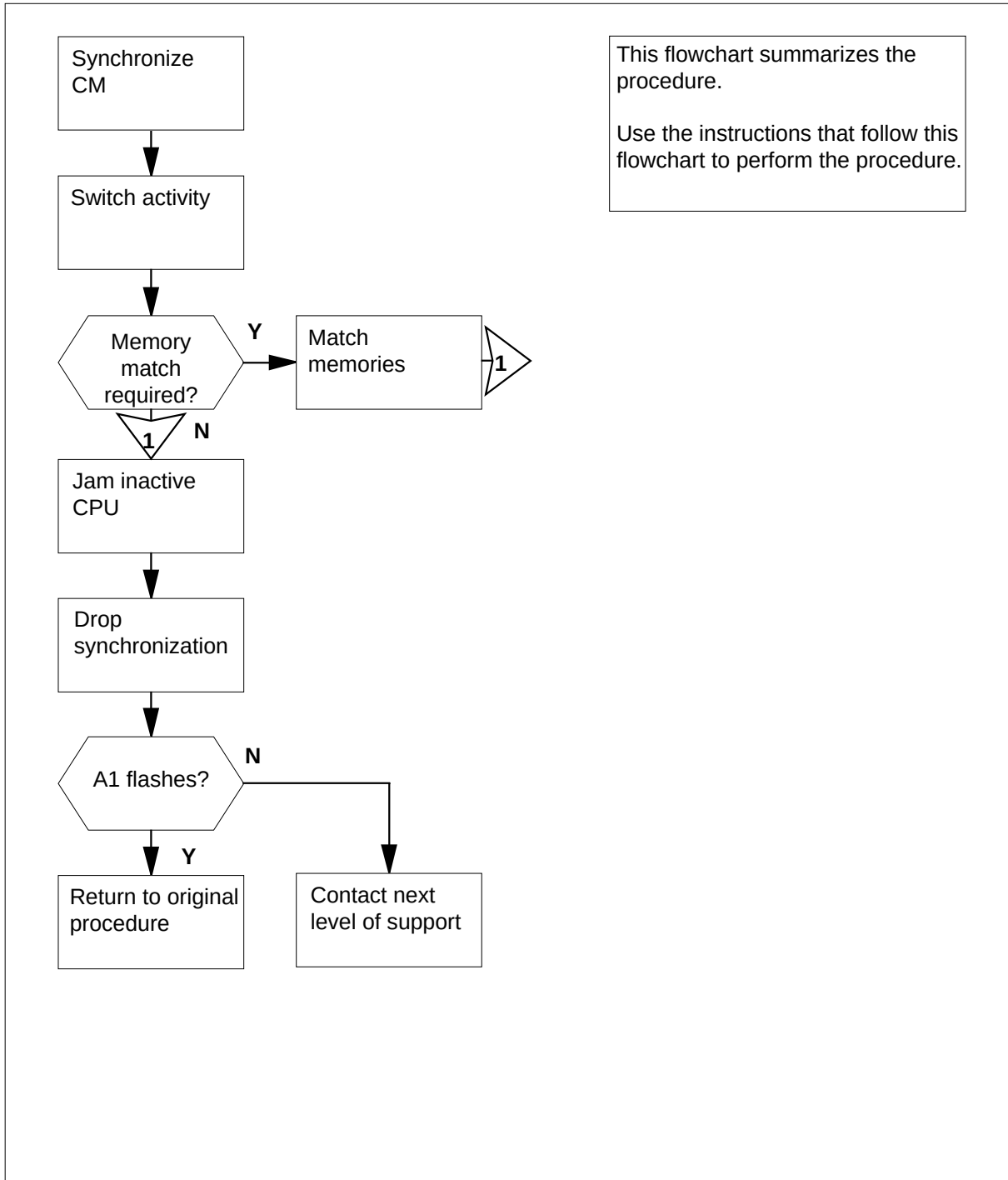
Activity switch with memory match

Application

Use this procedure to switch activity between the active CPU and the inactive CPU.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Activity switch with memory match (continued)**Summary of Activity switch with memory match**

Activity switch with memory match (continued)

Activity switch with memory match

At the MAP terminal

1



CAUTION

Possible equipment damage or loss of service

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

To make sure that you are at the CM level of the MAP display, type

>MAPCI;MTC;CM

and press the Enter key.

Example of a MAP Display:

CM	Sync	Act	CPU0	CPU1	Jam	Memory	CMMnt	MC	PMC
0	no	cpu	1	.	yes	.	.	.	.

2

Determine if the inactive CPU jammed.

Note: The word yes under the Jam header indicates that the CPU is jammed. The area is blank if the CPU is not jammed.

If the inactive CPU	Do
is jammed	step 3
is not jammed	step 4

At the CM reset terminal for the inactive CPU

3

Before you proceed, determine from office records or from operating company personnel why the inactive CPU is jammed. To release the jam on the inactive CPU, when you have permission, type

>\RELEASE JAM

and press the Enter key.

RTIF response:

JAM RELEASE DONE

Activity switch with memory match (continued)

At the MAP Display

- 4 Determine if the CM is in sync.

Note: A dot (.) or EccOn under the Sync header indicates that the CM is in sync. The word no means that the CM is not in sync.

If the CM	Do
is in sync	step 6
is not in sync	step 5

- 5 Before you proceed, determine from office records or from operating company personnel why synchronization was dropped. When you have permission, synchronize the CM. To synchronize the CM, type

>SYNC

and press the Enter key.

If the response	Do
indicates the SYNC command was successful	step 6
indicates other than listed here	step 23

- 6 To switch activity, type

>SWACT

and press the Enter key.

Example of a MAP response:

Switch of activity will cause the CM to be running on the inactive CPU's processor clock. System will drop SYNC and then re-SYNC in order to switch to the active CPU's clock. Do you wish to continue? Please confirm ("YES", "Y", "NO", or "N"):

- 7 To confirm the command, type

>YES

and press the Enter key.

- 8 Determine if the switch of activity was successful.

If the response	Do
is Maintenance action submitted. Switch of Activity successful. Drop Synchronization in progress... Running in simplex mode with active CPU n. Synchronization in progress... Synchronization successful.	step 9

Activity switch with memory match (continued)

	If the response	Do
	is other than listed here	step 23
9	Determine if a memory match between CPUs is necessary.	
	If you	Do
	replace cards in the CM	step 10
	clear a CM Flt alarm	step 10
	clear a CM LowMem alarm	step 10
	perform any other procedure	step 17
10	To access the Memory level of the MAP display, type >MEMORY and press the Enter key. <i>Example of a MAP display for DMS SuperNode:</i> CM 0 Card 123456789 Plane 0 Plane 1 <i>Example of a MAP display for DMS SuperNode SE:</i> CM 0 Card 12345 Plane 0 Plane 1	
11	To match the memories of the CPUs, type >MATCH ALL and press the Enter key. <i>Example of a MAP response:</i> Matching memory between CPUs in SYNC. Match ok.	
	If the response	Do
	Text CharFormat="Mono">is Match ok.Text>	step 12
	is other than listed here	step 23

Activity switch with memory match (continued)

- 12** To access the CI level of the MAP display, type

>QUIT ALL

and press the Enter key.

- 13** To access the log utility, type

>LOGUTIL

and press the Enter key.

- 14** To determine if the memory match generated MM100 log report, type

>OPEN MM 100

and press the Enter key.

Note: If the memory match did not generate a report, the response is Log empty.

If the response	Do
is Log empty	step 15
is other than listed here	step 23

- 15** To determine if the memory match generated an MM101 log report, type

>OPEN MM 101

and press the Enter key.

If the response	Do
is Log empty	step 16
is other than listed here	step 23

- 16** To quit the log utility, type

>QUIT

and press the Enter key.

Activity switch with memory match (continued)

At the CM reset terminal for the inactive CPU

17



WARNING

Loss of service

Do not jam the active CPU. If you jam the active CPU while the CM is out of sync you cause a cold restart. The word Active on the top banner of the display identifies the reset terminal for the active CPU.

To jam the inactive CPU, type

>\JAM

and press the Enter key.

RTIF response:

PLEASE CONFIRM: (YES/NO)

18 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

JAM DONE

At the MAP display

19 To access the CM level of the MAP display, type

>MAPCI;MTC;CM

and press the Enter key.

20 To drop synchronization, type

>DPSYNC

and press the Enter key.

If the response	Do
is About to drop sync with CPU n active. The inactive CPU is JAMMED. Do you want to continue. Please confirm ("YES", "Y", "NO", or "N"):	step 21
is other than listed here	step 23
21 To confirm the command, type	
>YES	

Activity switch with memory match (end)

and press the Enter key.

Example of a MAP response:

Maintenance action submitted.
Running in simplex mode with active CPU n.

At the CM reset terminal for the inactive CPU

- 22** Wait until A1 flashes on the CM reset terminal for the inactive CPU.

Note: Allow 5 min for A1 to start to flash.

If A1	Do
flashes	step 24
does not flash	step 23

- 23** For additional help, contact the next level of maintenance support.

- 24** Return to the maintenance procedure that sent you to this procedure and continue as directed.

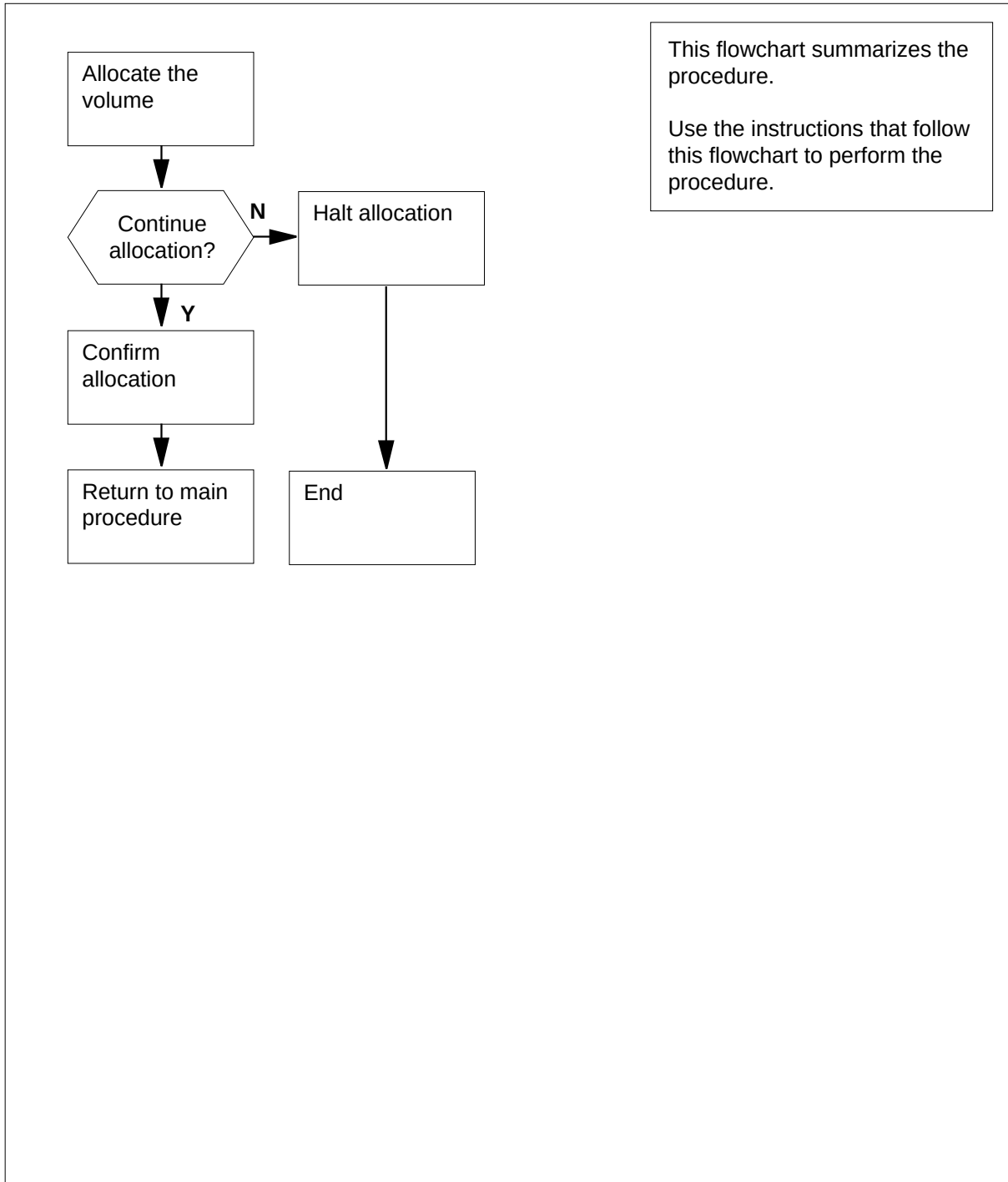
Allocating a volume

Application

Use this procedure to allocate a volume.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Allocating a volume (continued)**Summary of Allocating a volume**

Allocating a volume (continued)

Allocating a volume

At your current location

1



DANGER

Possible equipment damage or loss of service

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

To allocate a volume, type

>MNT ssys vol_name

and press the Enter key.

where

ssys

is the subsystem

vol_name

is the volume name

Example of a MAP display:

```

UPDATING VOLUME INFORMATION FOR vol_name:  VOLUME nn IN
REGULAR POOL n, pool_name
PLEASE CONFIRM ("YES" OR "NO"):
  
```

2

Determine if you want to continue with the volume allocation.

If you	Do
want to continue	step 5
do not want to continue	step 3

3

To halt the allocation, type

>NO

and press the Enter key.

4

You decided to not complete this alarm clearing procedure. Go to the next procedure.

5

To confirm the allocation, type

>YES

and press the Enter key.

Allocating a volume (end)

Example of a MAP display:

REGULAR VOLUME vol_name ALLOCATED.

- 6 The common procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Checking the electronic fuse unit in an LME or RLM frame

Application

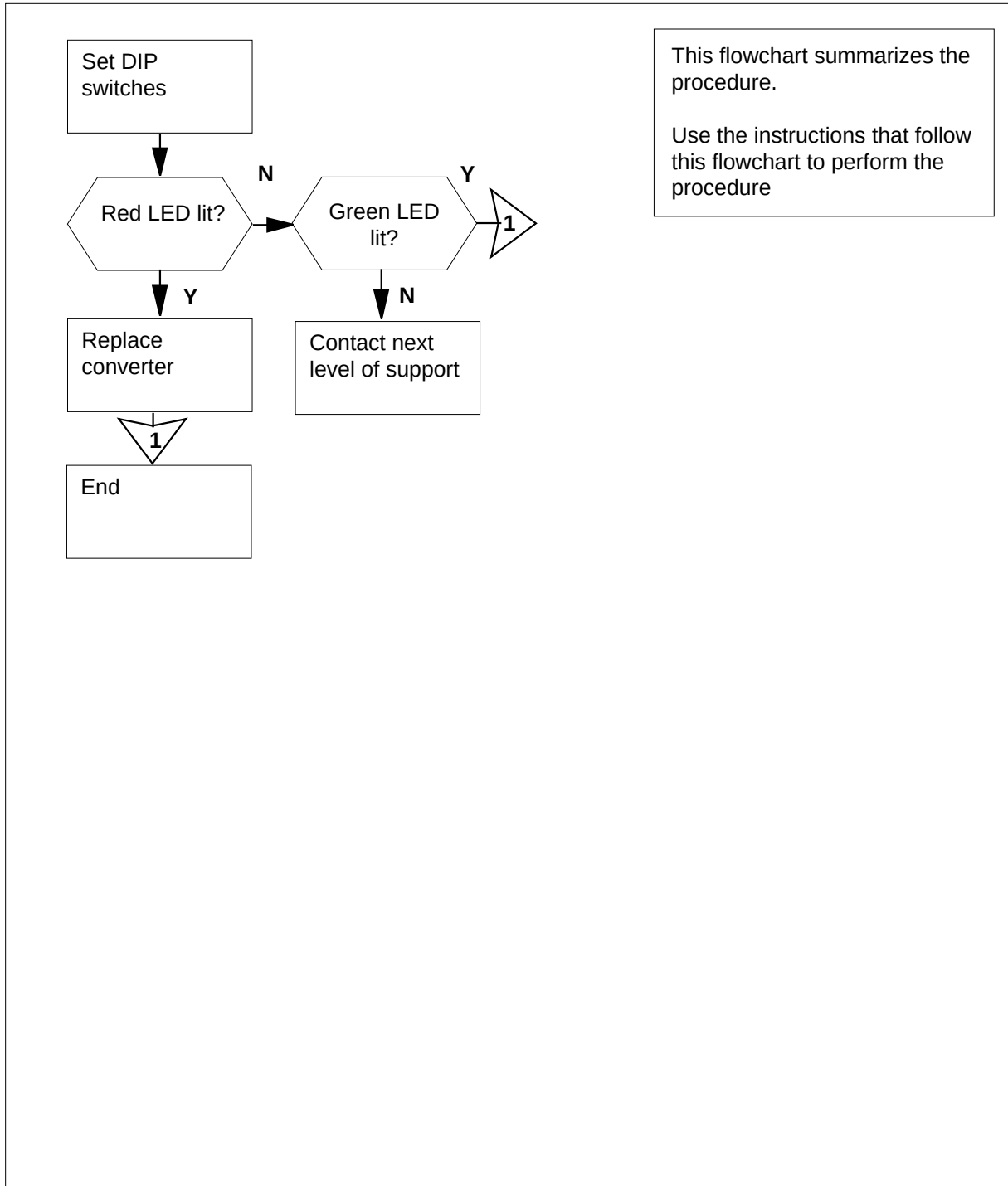
Use this procedure to clear an alarm. A electronic fuse unit (EFU) that has faults in a line module equipment (LME) or remote line module (RLM) frame causes the alarm.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Checking the electronic fuse unit in an LME or RLM frame (continued)

Summary of Checking the electronic fuse unit in an LME or RLM frame

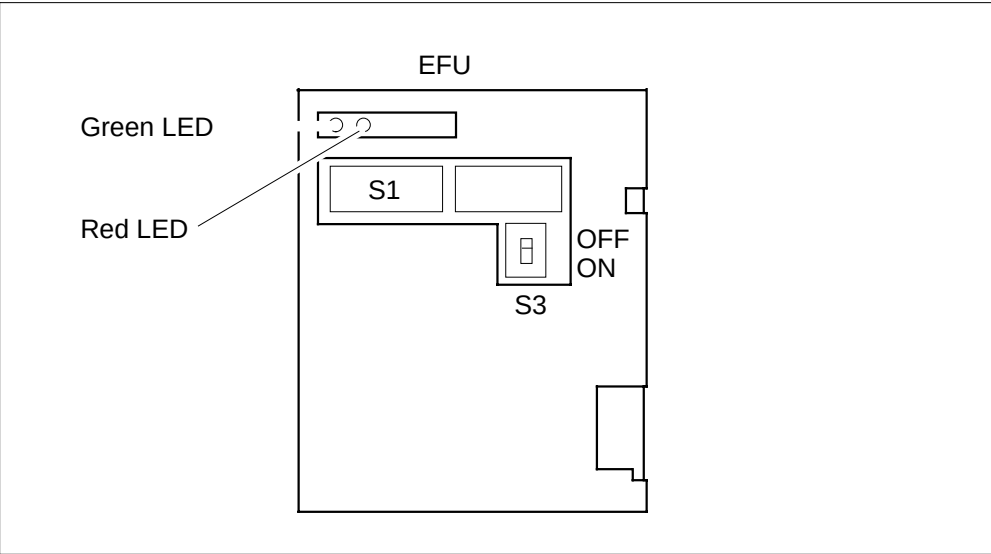


Checking the electronic fuse unit
in an LME or RLM frame (continued)

Checking the electronic fuse unit in an LME or RLM frame

At the LME or RLM frame

- 1 Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.
- 2 Determine the status of the LEDs on the EFU.



If	Do
both LEDs are lit	step 3
the LEDs are not lit	step 12
only the red LED is lit	step 5

3 Set DIP switch S3 to OFF.

4 Determine the status of the LEDs.

If the	Do
green LED is lit	step 13
red LED is lit	step 5

5 Determine the status of the S1 DIP switches. From the following table, determine if the switch settings are correct.

Checking the electronic fuse unit in an LME or RLM frame (continued)

Number of line drawers equipped in this LME frame	Switch number									
	LME bay 0					LME bay 1				
	1	2	3	4	5	6	7	8	9	10
1	•					•				
2		•					•			
3	•	•				•	•			
4			•					•		
5	•		•			•		•		
6		•	•				•	•		
7				•					•	
8	•			•		•			•	
9		•		•			•		•	
10					•					•
11	•				•	•				•
12		•			•		•			•
13	•	•			•	•	•			•
14			•		•			•		•
15	•		•		•	•		•		•
16		•			•		•			•
17				•	•				•	•
18	•			•	•	•			•	•
19		•		•	•		•		•	•
20	•	•		•	•	•	•		•	•

Note: A black dot in the table indicates that the DIP switch is ON.

	If switches	Do
	are correctly set	step 8
	are not correctly set	step 6
6	Set all S1 DIP switches that were not in the correct position.	
7	Determine the status of the LEDs on the EFU.	
	If the	Do
	green LED is lit	step 13
	red LED is lit	step 8
8	Set the power switch on the NT2X70 converter to OFF.	
9	Remove the NT2X70 from the shelf.	

Checking the electronic fuse unit in an LME or RLM frame (end)

10	Determine if bent or short-circuited pins are present on the backplane of the shelf.
If bent or short-circuited pins	
Do	
are present	
step 12	
are not present	
step 11	
11	Check the rear of the drawers for broken or short-circuited wires. The operating company personnel at the next level of support can request this information.
12	For additional help, contact the next level of support.
13	Return to the main procedure that sent you to this procedure. Continue as directed.

Clearing lines alarms

Application

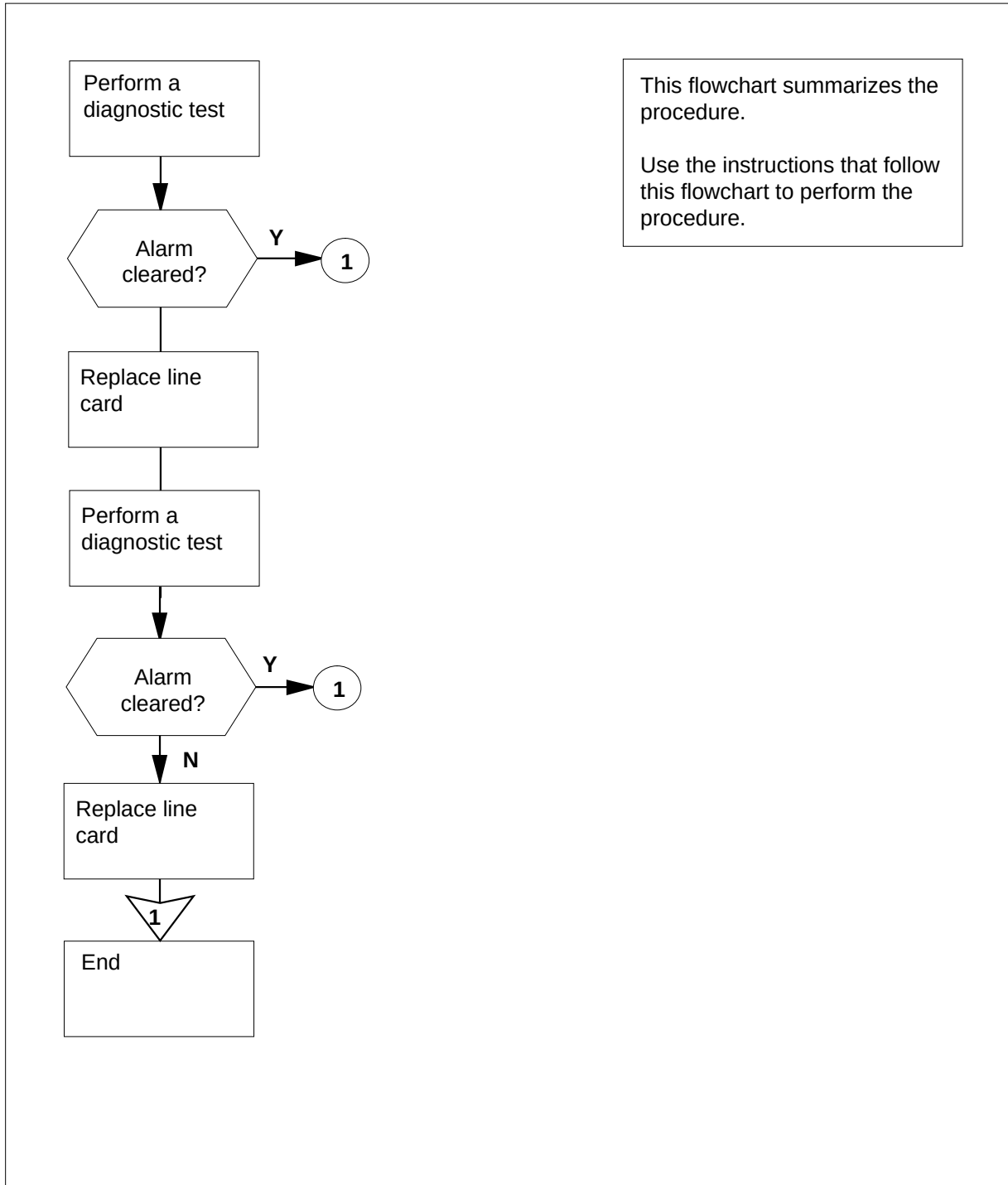
Use this procedure to clear lines alarms after you post the lines that have diagnostic failures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Clearing lines alarms (continued)

Summary of Clearing lines alarms



Clearing lines alarms (continued)

Clearing lines alarms



WARNING

Loss of service

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

At the MAP display

- 1 To perform a diagnostic test on each line, type

>DIAG

and press the Enter key.

Example of a MAP response:

```
***LINE101 FEB03 17:42:26 5500 FAIL LN_DIAG
      LEN REM1 00 0 00 06   DN 7224345
      DIAGNOSTIC RESULT No Signalling to Card 0/10
      ACTION REQUIRED Replace Card
      CARD TYPE 6X21AB
```

- 2 Check the log report displayed on the MAP terminal as a result of the Diag command.

If the system	Do
generated a LINE 100 log report	step 15
generated a LINE 101 log report	step 3

- 3 If you must replace the card, go to step 5. If you must perform any other action, go to step 4.

- 4 Troubleshoot the problem as required and go to step 10.

- 5 Note the card type of the line card from the information in the log report.

- 6 Go to the correct procedure in the *Card Replacement Procedures* to replace the line card. Complete the procedure and return to this point.

- 7 To perform a diagnostic test on the line, type

>DIAG

and press the Enter key.

- 8 Check the log report displayed on the MAP terminal as a result of the Diag command.

If the system	Do
generated a LINE100 log report	step 15

Clearing lines alarms (end)

	If the system	Do
	generated a LINE101 log report	step 9
	Note: A LINE101 log report indicates that the line card does not have faults.	
9	Go to the correct procedure in the <i>Card Replacement Procedures</i> to install the original card again. Complete the procedure and return to this point.	
	If alarms	Do
	appear under other MAP headers	step 10
	do not appear under other MAP headers	step 13
10	If alarms appear under the other headers at the MAP terminal, go to the correct alarm clearing procedure in this document. Complete this procedure and return to this point.	
11	To perform a diagnostic test on each line, type >DIAG and press the Enter key.	
12	Check the log report displayed on the MAP terminal as a result of the Diag command.	
	If the system	Do
	generated a LINE100 log report	step 15
	generated a LINE101 log report	step 13
13	Note the information in the "action required" section of the log report.	
14	For additional help, contact the next level of support.	
15	The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.	

Clearing PM C-side faults

Application

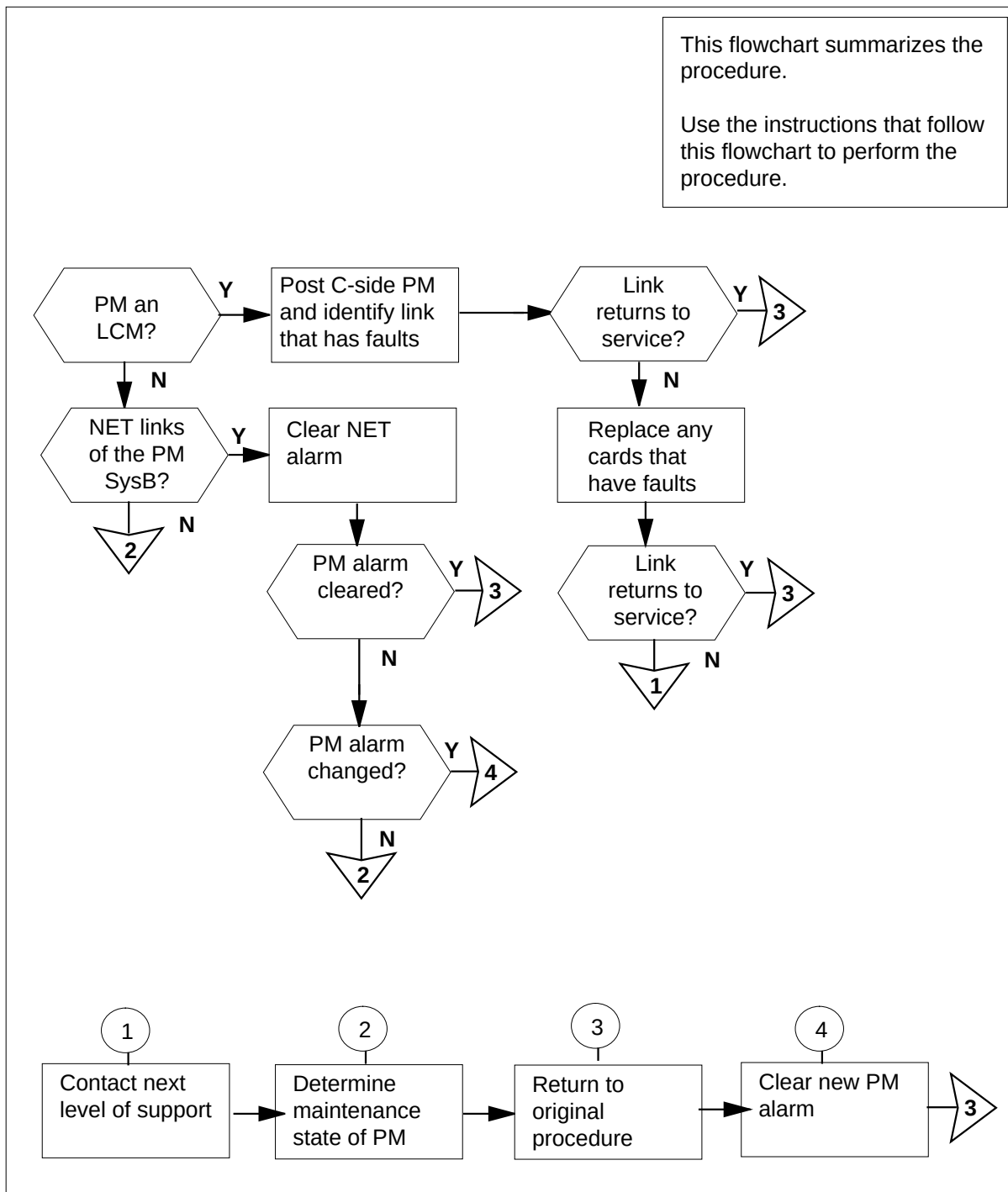
Use this procedure to clear C-side faults in a peripheral module (PM).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Clearing PM C-side faults (continued)

Summary of Clearing PM C-side faults critical, major, or minor alarm



Clearing PM C-side faults (continued)

Clearing PM C-side faults critical, major, or minor alarm

ATTENTION

Proceed only if a step in a maintenance procedure directs you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

At the MAP display

- 1 Determine if you are working on an LCM or a VLCM.

If the PM	Do
is an LCM	step 2
a VLCM	step 3
is other than listed here	step 14

- 2 To post the PM and identify the C-side links, type

>POST LCM lcm_no; TRNSL C

and press the Enter key.

where

lcm_no

is the number of the LCM you are working on

Example of a MAP response:

```
LCM    0          ISTb  Links_00S:  CSide 1, PSide 0
Unit0:   SysB      /RG: 0
Unit1:   InSv      /RG: 0
```

```
Link 0: LTC 0 0;Cap MS;Status:SYSB;   MsgCond:CLS
Link 1: LTC 0 1;Cap MS;Status:OK  ;   MsgCond:OPN
Link 2: LTC 0 2;Cap S;Status:OK
Link 3: LTC 0 3;Cap S;Status:OK
Link 4: LTC 0 4;Cap S;Status:OK
Link 5: LTC 0 5;Cap S;Status:OK
```

Note: Identify the C-side link that has faults. Record the link number.

If a Mtce flag	Do
appears next to either unit	step 4
does not appear	step 5

Clearing PM C-side faults (continued)

- 3 Post the PM and identify its C-side links by typing
>POST VLCM vlcm_no; TRNSL C
 and pressing the Enter key.
where
vlcm_no
 is the number of the VLCM you are working on

Example of a MAP display response:

```
VLCM      0      ISTb  Links_00S:  CSide 1,
PSide 0
Unit0:    SysB
Unit1:    InSv

                11 11 11 11 11
Drwr:  01 23 45 67 89 01 23 45 67  89   Stby 1 InSv
      ..  --  --  --  --  --  --  --

Link 0: PLGC 0 0;Cap MS;Status:SYSB;    MsgCond:CLS
Link 1: PLGC 0 1;Cap MS;Status:OK  ;    MsgCond:OPN
Link 2: PLGC 0 2;Cap S;Status:OK
Link 3: PLGC 0 3;Cap S;Status:OK
Link 4: PLGC 0 4;Cap S;Status:OK
Link 5: PLGC 0 5;Cap S;Status:OK
```

Note: Identify the faulty C-side link and record the link number.

If a Mtce flag	Do
is displayed beside either unit	step 4
is not displayed	step 6

- 4 Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this step.

If the alarm that led you to this procedure	Do
remains (LCM)	step 5
remains (VLCM)	step 6
clears	step 28
changes	step 29

- 5 To post the C-side PM and identify the P-side links of the PM, type
>POST pm pm_no; TRNSL P
 and press the Enter key.
where

Clearing PM C-side faults (continued)

pm

is the C-side PM (for example, an LGC or LTC)

pm_no

is the number of the C-side PM

Example of a MAP response:

```

LTC   0      ISTb  Links_00S:  CSide 1, PSide 2
Unit0:   SysB
Unit1:   InSv

Link  0: LCM HOST 00 0      0;Cap MS;Status:SYSB      ;MsgCond:CLS
Link  1: LCM HOST 00 0      1;Cap MS;Status:SYSB      ;MsgCond:OPN
Link  2: LCM HOST 00 0      2;Cap S;Status:OK
Link  3: LCM HOST 00 0      3;Cap S;Status:OK
Link  4: LCM HOST 00 0      4;Cap S;Status:OK
Link  5: LCM HOST 00 0      5;Cap S;Status:OK
Link  6: LCM HOST 00 1      0;Cap MS;Status:OK      ;MsgCond:OPN
Link  7: LCM HOST 00 1      1;Cap MS;Status:OK      ;MsgCond:OPN
Link  8: LCM HOST 00 1      2;Cap S;Status:OK
Link  9: LCM HOST 00 1      3;Cap S;Status:OK
Link 10: LCM HOST 00 1      4;Cap S;Status:OK
Link 11: LCM HOST 00 1      5;Cap S;Status:OK
MORE ...

```

Note 1: MORE . . . indicates that you will see more links.**Note 2:** Record information for links that have a status other than OK.

If a maintenance (Mtce) flag	Do
appears next to either unit	step 7
does not appear	step 8

- 6** Post the C-side PM and identify its P-side links by typing

>POST pm pm_no; TRNSL P

and pressing the Enter key.

*where***pm**

is the C-side PM, such as a PLGC

pm_no

is the number of the C-side PM

Example of a MAP display response:

Clearing PM C-side faults (continued)

```

PLGC   0          ISTb  Links_00S:  CSide 1, PSide 2
Unit0:   SysB
Unit1:   InSv

Link  0:  VLCM REMOTE 00 0          0;Cap MS;Status:SYSB  ;MsgCond:CLS
Link  1:  VLCM REMOTE 00 0          1;Cap MS;Status:SYSB  ;MsgCond:OPN
Link  2:  VLCM REMOTE 00 0          2;Cap S;Status:OK
Link  3:  VLCM REMOTE 00 0          3;Cap S;Status:OK
Link  4:  VLCM REMOTE 00 0          4;Cap S;Status:OK
Link  5:  VLCM REMOTE 00 0          5;Cap S;Status:OK
Link  6:  VLCM REMOTE 00 1          0;Cap MS;Status:OK      ;MsgCond:OPN
Link  7:  VLCM REMOTE 00 1          1;Cap MS;Status:OK      ;MsgCond:OPN
Link  8:  VLCM REMOTE 00 1          2;Cap S;Status:OK
Link  9:  VLCM REMOTE 00 1          3;Cap S;Status:OK
Link 10:  VLCM REMOTE 00 1          4;Cap S;Status:OK
Link 11:  VLCM REMOTE 00 1          5;Cap S;Status:OK
MORE ...

```

Note 1: MORE . . . indicates more links are to be observed.

Note 2: Record information for any links that have a status other than OK.

	If a Mtce flag	Do
	is displayed beside either unit	step 7
	is not displayed	step 8
7	Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this step.	
	If the alarm that led you to this procedure	Do
	remains	step 8
	clears	step 28
	changes	step 29
8		



WARNING

Possible loss of service

You must add or upgrade any type of network links during low traffic periods. Some of the new links can fail to return to service if you ignore this caution.

Clearing PM C-side faults (continued)

To busy the link that has faults, type

>BSY LINK link_no

and press the Enter key.

where

link_no

is the number (0 to 19) of the P-side link that have faults

9 To return the link to service, type

>RTS LINK link_no

and press the Enter key.

where

link_no

is the number (0 to 19) of the P-side link that have faults

If the RTS

Do

passed, and other links are not
SysB step 28

passed, and other links are SysB Return to step 8 and return the
links that have faults to service.

failed, and the system generated
a card list step 10

failed, and the system did not
generate a card list step 30

10 Replace the first card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Complete the procedure and go to step 11.

11 To return the link to service, type

>RTS LINK link_no

and press the Enter key.

where

link_no

is the number (0 to 19) of the P-side link that has faults

If the RTS

Do

passed, and other links are not
SysB step 28

passed, and other links are SysB Return to step 8 and return the
links that have faults to service.

Clearing PM C-side faults (continued)

	If the RTS	Do
	failed, and you did not replace all cards on the card list	step 12
	failed, and you replaced all cards on the card list	step 30
12	Replace the next card on the list. Refer to the correct procedure in the <i>Card Replacement Procedures</i> . Complete the procedure and go to step 13.	
13	To return the link to service, type >RTS LINK link_no and press the Enter key. <i>where</i> link_no is the number (0 to 19) of the P-side link that has faults	
	If the RTS	Do
	passed, and other links are not SysB	step 28
	passed, and other links are SysB	Return to step 8 and attempt to return each link that has faults to service.
	failed, and you did not replace all cards on the card list	step 12
	failed, and you replaced all cards on the card list	step 30
14	To post the PM and identify the C-side links of the PM, type >POST pm pm_no; TRNSL C and press the Enter key. <i>where</i> pm is the C-side PM, like an LGC or LTC pm_no is the number of the C-side PM <i>Example of a MAP response:</i>	

Clearing PM C-side faults (continued)

Junctor network (JNET)

```
LTC      0          ISTb Links_00S:  CSide 2, PSide 1
Unit0:    InAct      SYSB
Unit1:    Act        InSv
```

```
Link 0: NET 0 1 45;Cap MS;Status:SYSB      ;MsgCond:CLS:Restrict
Link 1: NET 1 1 45;Cap MS;Status:SYSB      ;MsgCond:CLS:Restrict
Link 2: NET 0 1 47;Cap S;Status:OK
Link 3: NET 1 1 47;Cap S;Status:OK
Link 4: NET 0 0 33;Cap MS;Status:OK         ;MsgCond:OPN:Unrestrict
Link 5: NET 1 0 33;Cap MS;Status:OK         ;MsgCond:OPN:Unrestrict
```

*or***Enhanced network (ENET)**

```
LTC      0          ISTb Links_00S:  CSide 2, PSide 1
Unit0:    InAct      SYSB
Unit1:    Act        InSv
```

```
LINK 0 ENET 0 0 30 00 0;Cap:MS;Status:SYSB;MsgCond:CLS,Unrestricted
LINK 1 ENET 1 0 30 00 0;Cap:MS;Status:SYSB;MsgCond:CLS,Restricted
Link 2:ENET 0 0 30 00 1;Cap S;Status:OK
Link 3:ENET 1 0 30 00 1;Cap S;Status:OK
LINK 4 ENET 0 0 30 00 2;Cap:MS;Status:SysB;MsgCond:OPN,Unrestricted
LINK 5 ENET 1 0 30 00 2;Cap:MS;Status:SysB;MsgCond:OPN,Restricted
```

Note 1: In the ENET example, the first line indicates the system routes C-side link 0 through ENET 0 (plane 0). The system routes C-side link 0 through ENET 0 at shelf 0, slot 30, ENET link 00, ENET DS30 link equivalent 0. This display indicates that a single DS512 fiber connects to a single ENET link on both plane 0 and plane 1. A DS512 fiber link handles 16 DS30 equivalents. The consecutive ENET DS30 numbers show the DS512 fiber link and the DS30 equivalents.

Note 2: Identify and record the C-side link and plane number.

15

Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this step.

If a Mtce flag
Do

appears at the side of the PM or either PM unit step 15

does not appear step 16

If the alarm that led you to this procedure
Do

remains step 17

clears step 28

Clearing PM C-side faults (continued)

	If the alarm that led you to this procedure	Do
	changes	step 29
16	To access the network level of a MAP display, type >NET and press the Enter key.	
	If the network	Do
	is JNET	step 17
	is ENET	step 21
17	To determine the status of the P-side links in the network, type >LINKS plane_no and press the Enter key. <i>where</i> plane_no is the number (0 to 1) of the plane <i>Example of a MAP response:</i>	
	<pre>CM MS IOD Net PM CCS Lns Trks Ext APPL . . . 1Link 1LTC *C* Net Links Net 11111 11111 22222 22222 33 0 Quit Plane 01234 56789 01234 56789 01234 56789 01 2 0 .L 3 1 .. 4 Net 0 Links 5 Plane 0123 4567 8901 2345 6789 0123 4567 8901 6 Tst_ 0 - S..- ---. - S..- ---. 7 Bsy_ 1 - S..- ---. - S..- ---. 8 RTS_ Links 3333 3333 4444 4444 4455 5555 5555 6666 9 Plane 2345 6789 0123 4567 8901 2345 6789 0123 10 0 - ---. ---. - ---. ---. 11 Disp_ 1 - ---. ---. - ---. ---. 12 13 LINKS: 14 15 16 TrnsL_ 17 Links_ 18 USER1 Time 14:57 ></pre>	
	If SysB links	Do
	are in the NET	step 18
	are not in the NET	step 26

Clearing PM C-side faults (continued)

- 18** To determine if the SysB links associate with the CBsy PM, type
>TRNSL link_no
 and press the Enter key.
where
link_no
 is the number (0 to 63) of the link that you recorded in step 2

Example of a MAP response:

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.       .       .       1Link    1LTC    .       .       .       .       .
          *C*
Net Links Net      11111  11111  22222  22222  33
0 Quit   Plane 01234  56789  01234  56789  01234  56789  01
2         0     .L
3         1     ..
4         Net 0 Links      11  1111  1111  2222  2222  2233
5         Plane 0123  4567  8901  2345  6789  0123  4567  8901
6 Tst_    0     ....  ...-  S...  ----  ....  ...-  S...  ----
7 Bsy_    1     ....  ...-  S...  ----  ....  ...-  S...  ----
8 RTS_    Links 3333  3333  4444  4444  4455  5555  5555  6666
9         Plane 2345  6789  0123  4567  8901  2345  6789  0123
10        0     ....  ...-  ----  ----  ....  ...-  ----  ----
11 Disp_  1     ....  ...-  ----  ----  ....  ...-  ----  ----
12        trns1 24
13        Net 0 Link 38 = LTC 0 Port 2
14
15
16 Trns1_
17 Links_
18
USER1
Time 14:57  >

```

If the SysB links	Do
associate with the CBsy PM	step 19
do not associate with the CBsy PM	step 26

- 19** A network alarm causes the PM alarm. Perform the correct procedure in this document. Go to step 20.
- 20** The switch attempts to recover the PM. Refer to the procedure "Monitoring system maintenance" in this document. Wait for the system to complete the automatic recovery processes before you continue this procedure or any manual maintenance activity. System actions can recover the PM and clear the fault. System actions can also create another type of alarm.

If	Do
NET alarms or PM alarms are not present	step 31
NET alarms are not present, and the PM alarm is the same alarm that led you to this procedure	step 26

Clearing PM C-side faults (continued)

	If	Do
	NET alarms are not present, and the PM alarm is different from the alarm that led you to this procedure	step 29
	a NET alarm appears	step 30
21	To access the ENET link level of the MAP display, type >SHELF shelf_no;CARD card_no;LINK link_no and press the Enter key. shelf_no is the number of the shelf that connects to the defective links that you identified in step 14. card_no is the number of the card slot that connects to the defective links that you identified in step 14. link_no is the number of the link that connects to the defective links that you identified in step 14.	
22	To translate the peripheral side (P-side) plane, shelf, slot and link, type >TRNSL P shelf_no link_no and press the Enter key. <i>where</i> plane_no is the number of the plane that connects to the link that has faults link_no is the number of the link that has faults <i>Example of a MAP response:</i>	

Clearing PM C-side faults (continued)

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.        .        .        32PSLk  1LTC      .        .        .        .        .
                        M        *C*

CARD  ENET      System      Matrix      Shelf 0 1 2 3
0 Quit Plane 0      .        D Fault      F - - -
2      Plane 1      .        .        . - - -
3 QueryEN_
4 Locate_      SHELF 00 Slot      1111111 11122222 22222333 333333
5 Deload_      123456 78 90123456 78901234 56789012 345678
6 Tst_      Plane 0      ..... .. ..F----- .....
7 Bsy_      Plane 1      ..... .. ..F----- .....
8 Rts_
9 Offl_      CARD 11      Front:      Back:      DS-512 Links
10           Xpt      I/F      0 1 2 3
11 REXTst_ Plane 0      .        .        . - - -
12           Plane 1      .        .        . - - -
13           trnsl p 0 1
14 Link_      Request to TRNSL ENET Plane:0 Shelf:00 Slot:11 Link:01 submitted
15 System      Request to TRNSL ENET Plane:0 Shelf:00 Slot:11 Link:01 passed.
16 Matrix      ENET Plane:0 Shelf:00 Slot:30 Link:01 :
17 Card_      LTC 0 Port:0
18 Trnsl_
User1 13:56 >

```

23 To busy the link that has faults, type

>BSY plane_no LINK link_no

and press the Enter key.

where

plane_no

is the number of the plane that connects to the defective link

link_no

is the number of the link that has faults

Example of a MAP response:

Clearing PM C-side faults (continued)

```

CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.       .       .       32PSLk  1LTC      .       .       .       .       .
                        M      *C*

CARD      ENET      System      Matrix      Shelf 0 1 2 3
0 Quit    Plane 0    .          Fault      F - - -
2         Plane 1    .          .          . - - -
3 QueryEN_
4 Locate_ SHELF 00    Slot          1111111 11122222 22222333 333333
5 Deload_          123456 78 90123456 78901234 56789012 345678
6 Tst_     Plane 0    . . . . .F..... ----- .. . .
7 Bsy_     Plane 1    . . . . .F..... ----- .. . .
8 Rts_     Link: 1
9 Offl_    CARD 11    Front:      Back:      DS-512 Links DS-30 Equiv 111111
10         Xpt      I/F      0 1 2 3      0123456789012345
11 RExTst_ Plane 0    .          .          . M - -      MMMMMMMMMMMMMMMM
12         Plane 1    .          .          . . - -      .....
13         bsy 0 link 1
14 Link_   Request to MAN BUSY ENET Plane:0 Shelf:00 Slot:11 Link:01 passed.
15 System
16 Matrix
17 Card_
18 Trsl_
USER1 13:58 >

```

24 To test the link that has faults, type

>TST plane_no LINK link_no

and press the Enter key.

where

plane_no

is the number of the plane that connects to the defective link

link_no

is the number of the link that has faults

If the test	Do
passed	step 23
failed	step 30

25 To return to service all links that you busied in step 23 to service, type

>RTS plane_no LINK link_no

and press the Enter key.

where

plane_no

is the number of the plane that connects to the defective link

link_no

is the number of the link that has faults

Example of a MAP response:

Clearing PM C-side faults (continued)

```
CM      MS      IOD      Net      PM      CCS      Lns      Trks      Ext      APPL
.       .       .       .       1LTC      .       .       .       .       .

CARD    ENET      System  Matrix  Shelf 0 1 2 3
0 Quit  Plane 0    .       Fault   F - - -
2       Plane 1    .       .       . - - -
3 QueryEN_
4 Locate_ SHELF 00 Slot      1111111 11122222 22222333 333333
5 Deload_      123456 78 90123456 78901234 56789012 345678
6 Tst_   Plane 0    . .   .. ..... -----
7 Bsy_   Plane 1    . .   .. ..... -----
8 Rts_   Link: 1
9 Offl_  CARD 11    Front:  Back:   DS-512 Links DS-30 Equiv 111111
10       Xpt      I/F      0 1 2 3      0123456789012345
11 REXTst_ Plane 0    .       .       . . - -
12       Plane 1    .       .       . . - -
13       RTS 0 link 1
14 Link_  Request to RTS ENET Plane:0 Shelf:00 Slot:11 Link:01 passed.
15 System
16 Matrix
17 Card_
18 Trnsl_
USER1 13:58 >
```

If RTS	Do
passed	step 26
failed	step 30

- 26 To return to the PM level of the MAP display, type
>PM
and press the Enter key.
- 27 To determine the maintenance state that causes the PM alarm, type
>STATUS
and press the Enter key.
Example of a MAP response:

Clearing PM C-side faults (end)

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	0	0	0	0	3	25
TM8	0	0	0	0	0	2
MTM	0	0	0	0	0	3
LGC	0	0	0	0	0	3
LCM	0	0	0	0	2	0
LTC	0	0	0	0	1	1
LIM	0	0	0	0	0	1
LIU7	0	0	0	0	0	1
FRIU	0	0	0	0	0	1
DTCI	0	0	0	0	0	1
LCME	0	0	0	0	0	1

MORE . . .

Note: Note the maintenance state of the PM.

- 28** Return to the step in the maintenance procedure that led you to this procedure. Go to step 31.
- 29** Refer to the correct procedure in this document to clear the alarm. Go to step 31.
- 30** You will require additional maintenance action to clear the alarm. Contact the next level of support. Describe the steps that you performed to clear both the PM and NET alarms. Go to step 31.
- 31** The procedure is complete.

Clearing ringing generator faults LCM

Application

Use this procedure to clear the ringing generator faults that ring in a line concentrating module (LCM).

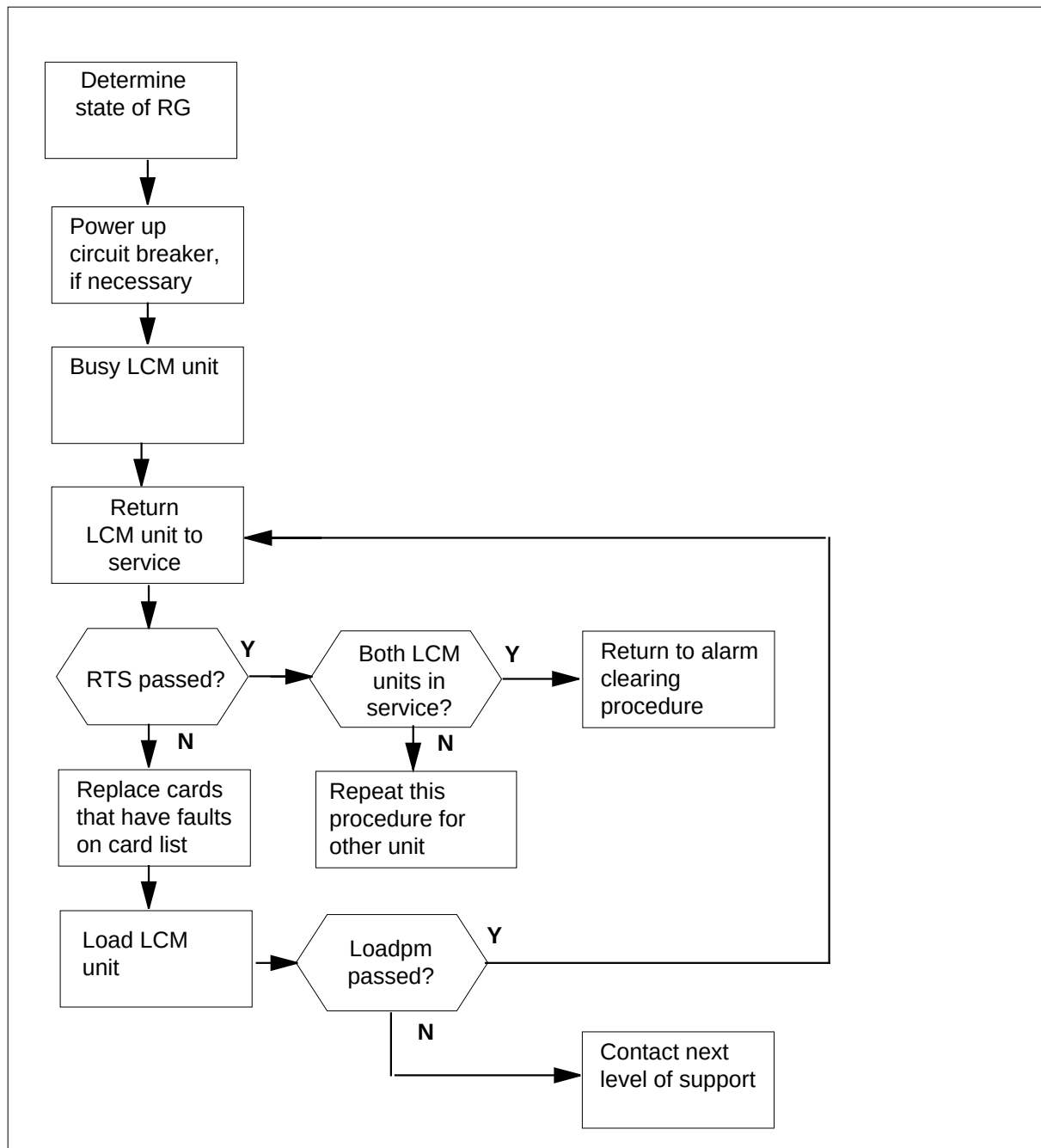
Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Clearing ringing generator faults

LCM (continued)

Summary of Clearing ringing generator faults in an LCM



Clearing ringing generator faults LCM (continued)

Clearing ringing generator faults in an LCM

At the MAP display

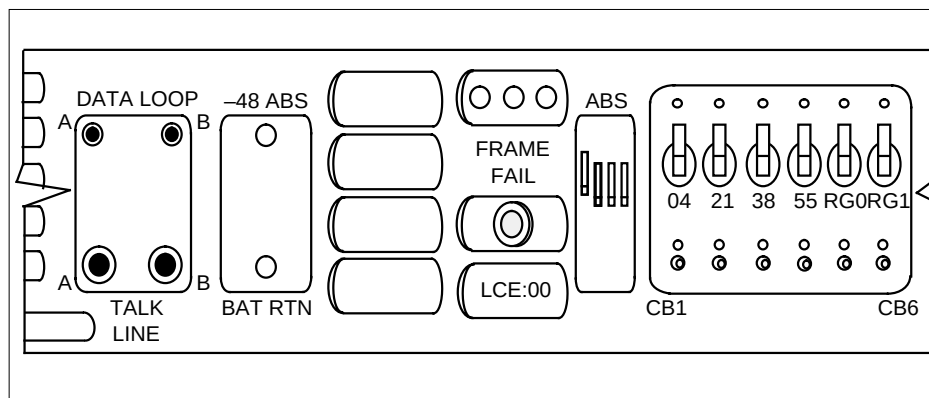
- 1** Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.
- 2** Observe the MAP display the QUERYPM FLT command generated. The display led you to this procedure. Identify the maintenance state for both ringing generators (RG).

If	Do
both RGs are SysB	Go to step 4 and select an RG to work on
one RG is SysB and one RG is ISTb or InSv	Go to step 4 and work on the SysB RG
both RGs are ISTb	Select an RG to work on and go to step 3
one RG is ISTb and one RG is InSv	step 3

- 3** Wait for a maintenance window before you continue this procedure.
- 4** Check the RG circuit breakers on the frame supervisory panel (FSP). The circuit breakers are identified as RG 0 and RG 1. Refer to the following diagram for help.

Clearing ringing generator faults

LCM (continued)



		If the LEDs of the circuit breakers	Do
		are on	step 5
		are off	step 6
5	Turn on the circuit breaker. Move the power switch to the ON position.		
		If the circuit breaker	Do
		remains switched ON and the LED light on the FSP goes off	step 6
		trips or the LED light on the FSP does not go off	step 12
6	To busy the LCM unit, type >BSY UNIT unit_no and press the Enter key. <i>where</i> unit_no is the LCM unit (0 to 1) with the ringing generator that has faults Note: Ringing generator 0 associates with unit 0. Ringing generator 1 associates with unit 1.		
7	To return the LCM unit to service, type >RTS UNIT unit_no and press the Enter key. <i>where</i>		

Clearing ringing generator faults LCM (continued)

unit_no is the LCM unit (0 to 1) with the ringing generator that has faults	
If the RTS	Do
failed and the system generated a card list	step 8
failed and the system did not generate a card list	step 12
passed	step 11
8	Replace the first or next card on the list. Refer to the correct procedure in <i>Card Replacement Procedures</i> . Complete this procedure and return to this point.
If you	Do
replace a NT6X51, NT6X52, or NT6X53 card	step 9
replace a card other than listed here	step 10
9	To load the LCM unit, type >LOADPM UNIT unit_number and press the Enter key. <i>where</i> unit_no is the LCM unit (0 to 1) with the ringing generator that has faults
If the load	Do
failed and you did not replace all cards	step 8
failed and you replaced all cards	step 12
passed	step 10
10	To return the LCM unit to service, type >RTS UNIT unit_no and press the Enter key. <i>where</i>

Clearing ringing generator faults**LCM** (end)

unit_no is the LCM unit (0 to 1) with the ringing generator that has faults	
If the RTS	Do
failed and you did not replace all cards	step 8
failed and you replaced all cards	step 12
failed and the system did not generate a card list	step 12
passed	step 11
11	Determine the state of both RGs.
If	Do
both RGs are in-service	step 13
one RG is in-service and you did not test the other RG	step 2
one RG is in-service and you tested the other RG	step 12
12	Additional maintenance action is required to clear this alarm. Contact the next level of support. Describe in detail the steps that you performed to clear this fault. Describe the alarm that led you to this procedure.
13	The procedure is complete. Return to the procedure that led you to this common procedure.

Connecting temporary fiber cable between MS and SSLPP

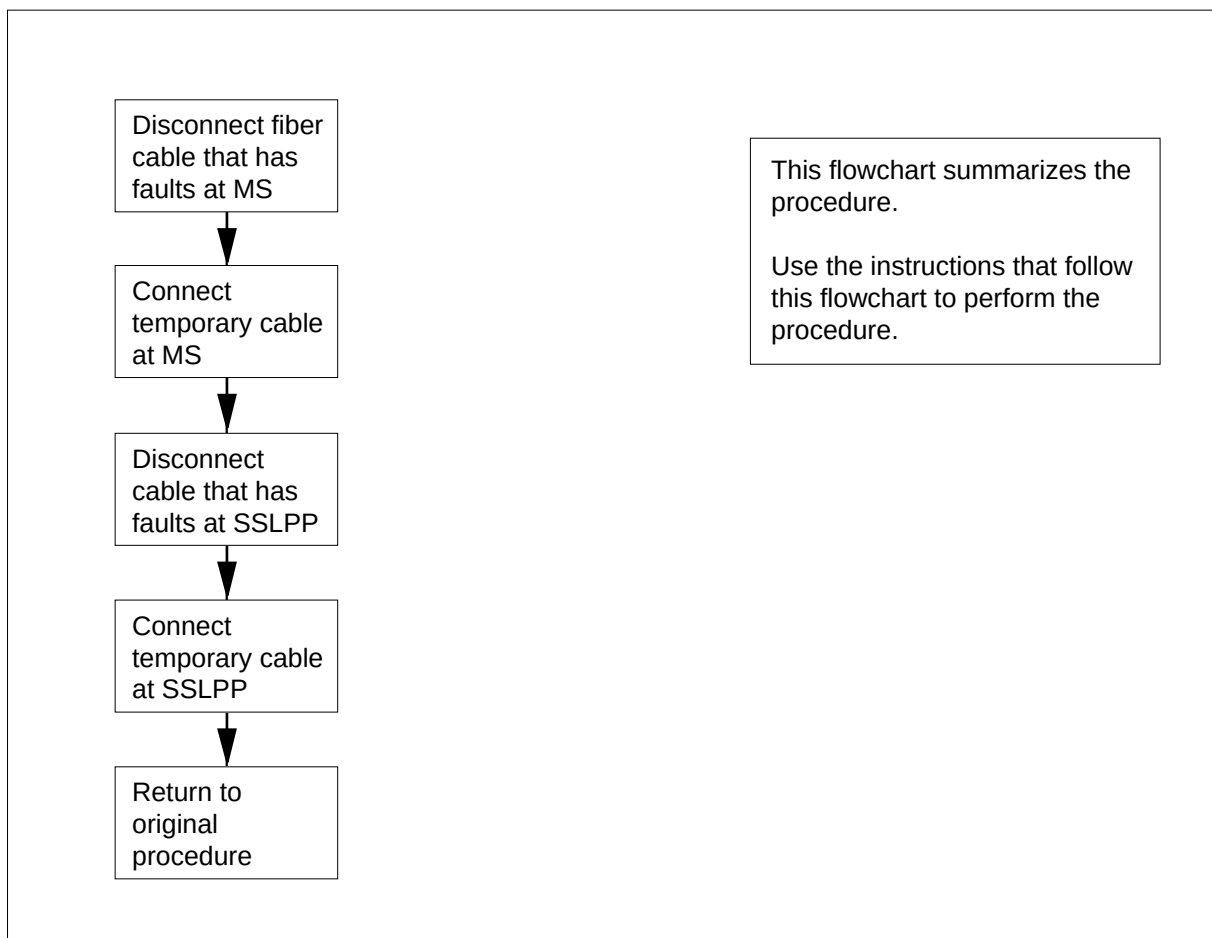
Application

Use this procedure to connect a temporary fiber cable between a message switch (MS) and a single-shelf link peripheral processor (SSLPP).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Summary of Connecting temporary fiber cable between MS and SSLPP



Connecting temporary fiber cable between MS and SSLPP (continued)

Connecting temporary fiber cable between MS and SSLPP

At the MS

1



DANGER

Possible equipment damage or loss of service

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.



DANGER

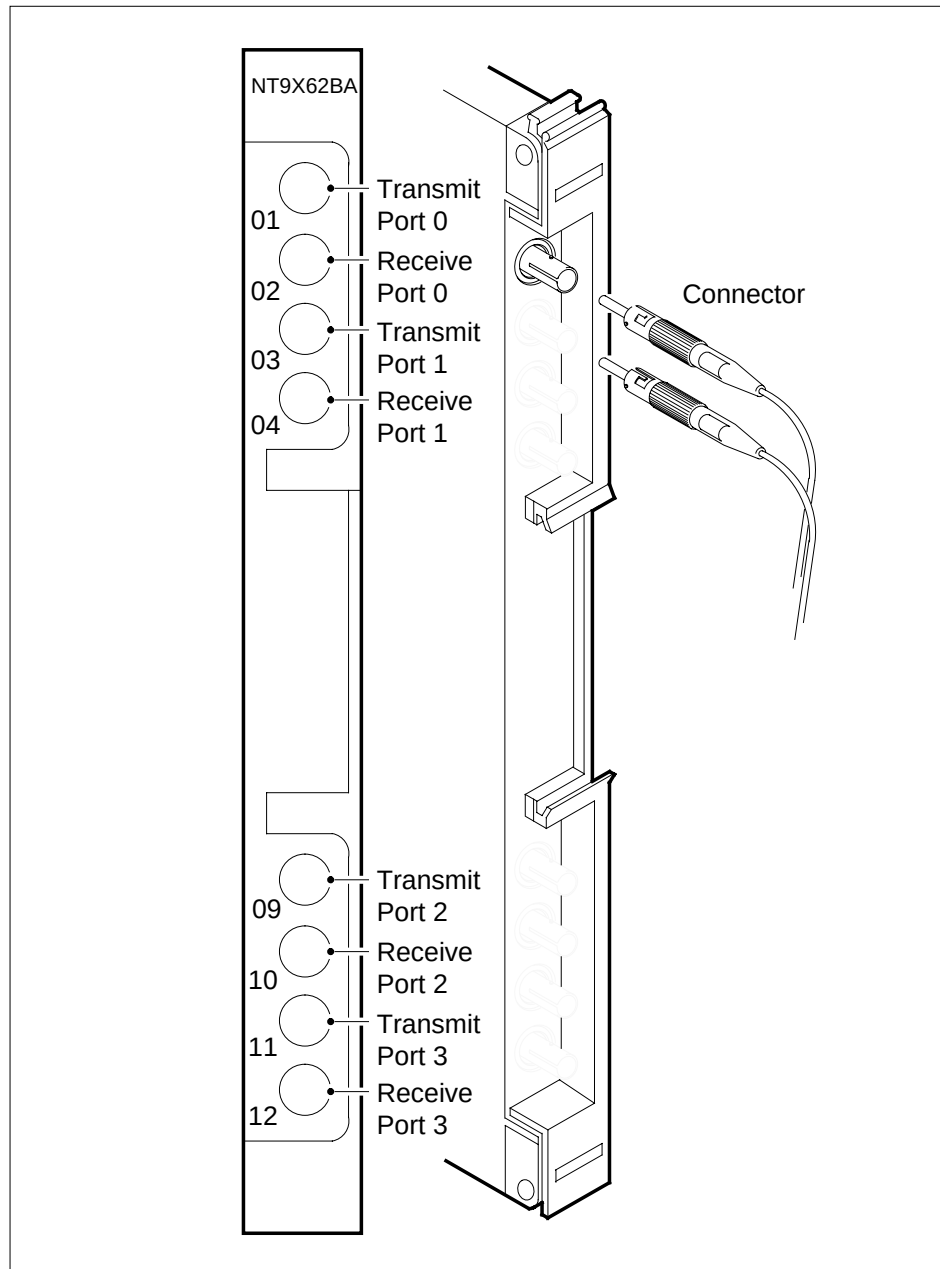
Fiber cable can become damaged and cause service interruption

Use caution when you handle fiber cables. Do not crimp fiber cables or bend fiber cables to a radius of less than 25 mm (1 in.).

Obtain a spare fiber cable to use as a temporary connection between the MS and the SSLPP.

- 2 Before you disconnect the link, make sure that you are at the correct MS shelf and the correct interface card (slot). Note the location of the fiber cable that has faults.
- 3 The figure below relates the fiber receptacles that appear on the face of the card to the port numbers. The port numbers appear on the MAP display for the NT9X62BA interface card. Note the names for Transmit and Receive.

Connecting temporary fiber cable between MS and SSLPP (continued)



Connecting temporary fiber cable between MS and SSLPP (continued)

4

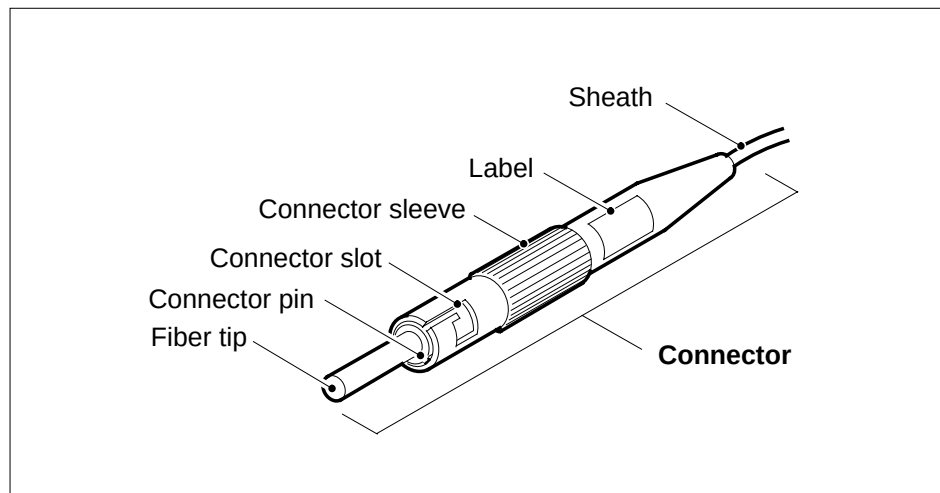


DANGER

Do not contaminate the fiber tip surface

Do not touch the tip of the fiber. Dirt or oil from the skin transferred to the fiber tip surface degrades fiber performance.

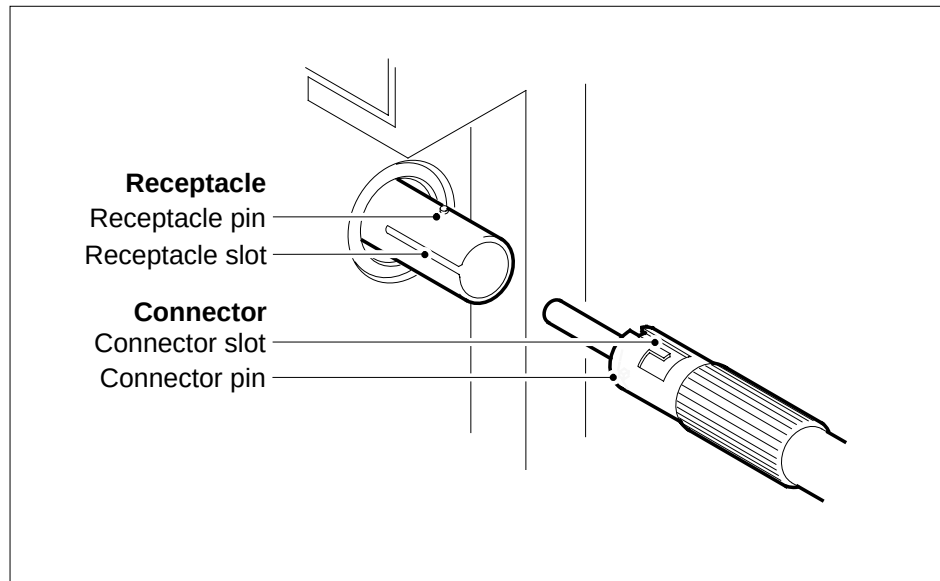
The following figure shows the type of connector used for fiber connections between an MS and an SSLPP.



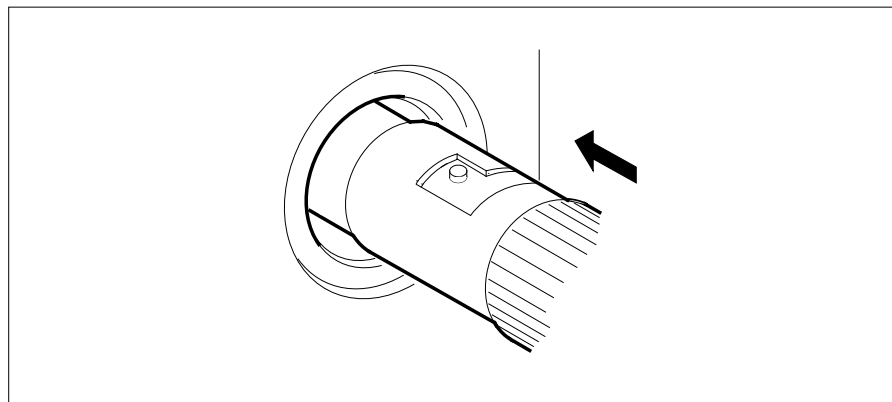
5

The following figure shows the different parts of the connector and receptacle as referred to in this procedure.

Connecting temporary fiber cable between MS and SSLPP (continued)

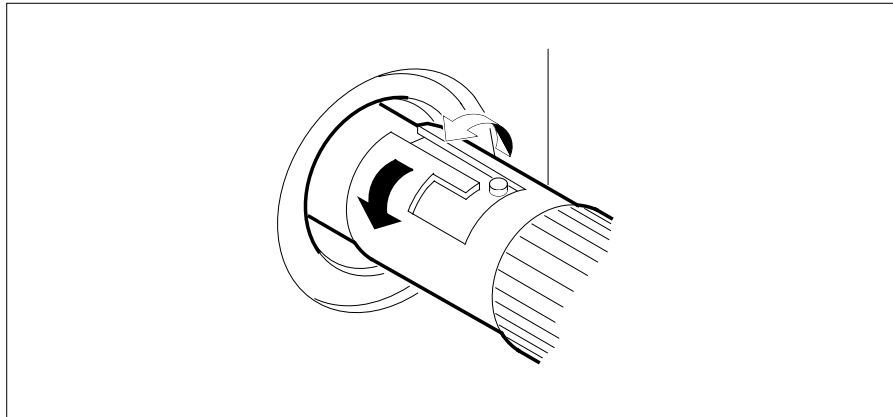


- 6** Disconnect the transmit connectors and receive connectors for the cable that has faults.
- a** Grasp the sleeve with two fingers and carefully push the sleeve toward the frame.

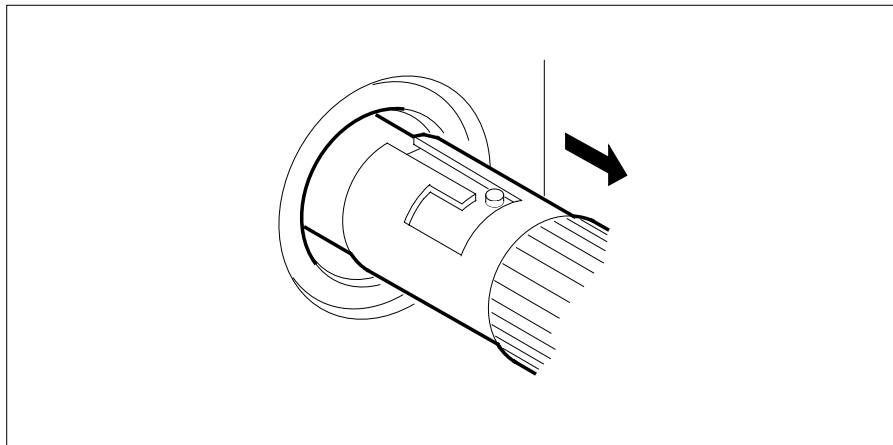


- b** Turn the connector counter-clockwise until the connector pin is in the position shown.

Connecting temporary fiber cable between MS and SSLPP (continued)



- c Carefully pull the connector away from the frame.



- 7 Place dust caps on the transmit connectors and receive connectors of the cable that has faults.
- 8 Create new labels for the temporary fiber cable that contain the same information as those on the cable that has faults. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so that Nortel (Northern Telecom) personnel who replaced the cable, can identify the cable.

Note: The label identifies the MS shelf number, slot number, receptacle number and port number, and the signal type (transmit or receive). The label also specifies the SSLPP on which the fiber terminates.

Example of a label:

DPCC	00	26
29R	01	0T
EMC	00	26
32R	RX	

Field descriptions:

Connecting temporary fiber cable between MS and SSLPP (continued)

DPCC

is the DPCC cabinet that contains the MS

00

is the cabinet number

26

is the MS shelf base mounting position number

21R

is the slot number and position (R for rear, F for front)

01

is the card receptacle number

0T

is the port number and the signal type (T for transmit, R for receive)

EMC

is the cabinet on which the cable terminates

00

is the cabinet number

26

is the SSLPP shelf by base mounting position number

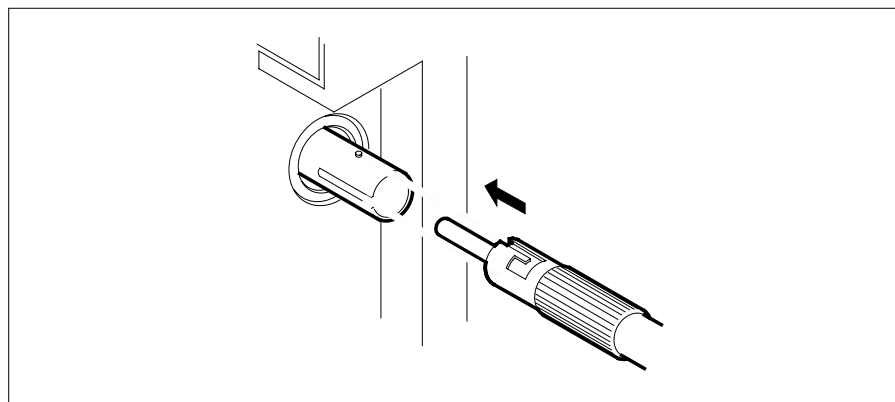
32R

is the slot and position (R for rear, F for front)

RX

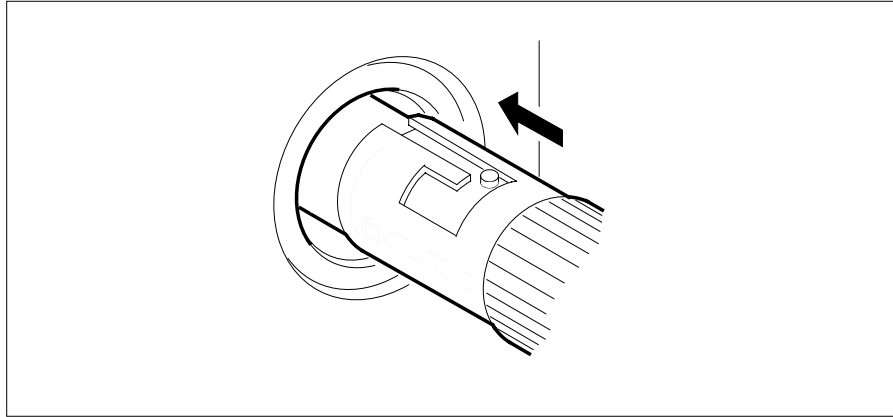
is the signal type at the PM end (RX for receive or TX for transmit)

- 9 Remove the dust caps on the transmit and receive connectors of the temporary fiber cable.
- 10 Connect the transmit and receive connectors to the MS.
 - a Align the connector pin with the receptacle slot and pin in the sequence given, as shown.

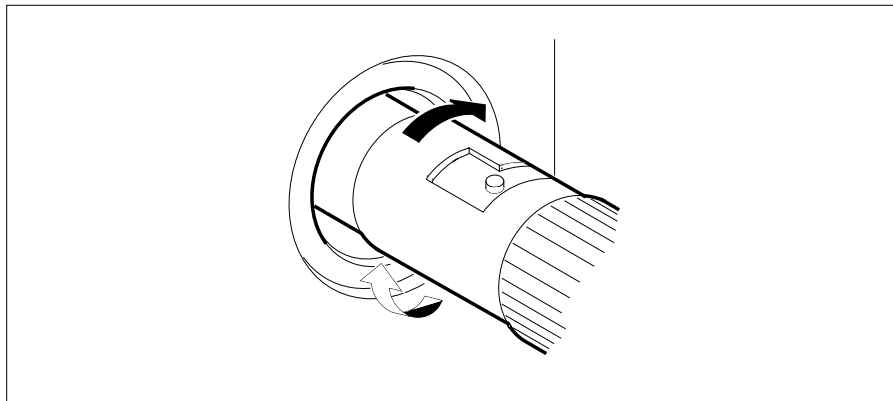


- b Carefully slide the connector into the receptacle.

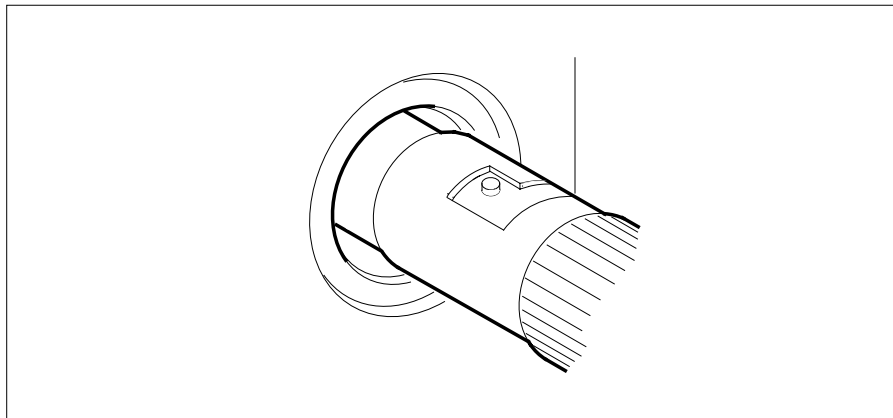
Connecting temporary fiber cable between MS and SSLPP (continued)



- c** Turn the connector clockwise to lock the connector in place.



- d** Release the connector. The figure shows the final connector position.

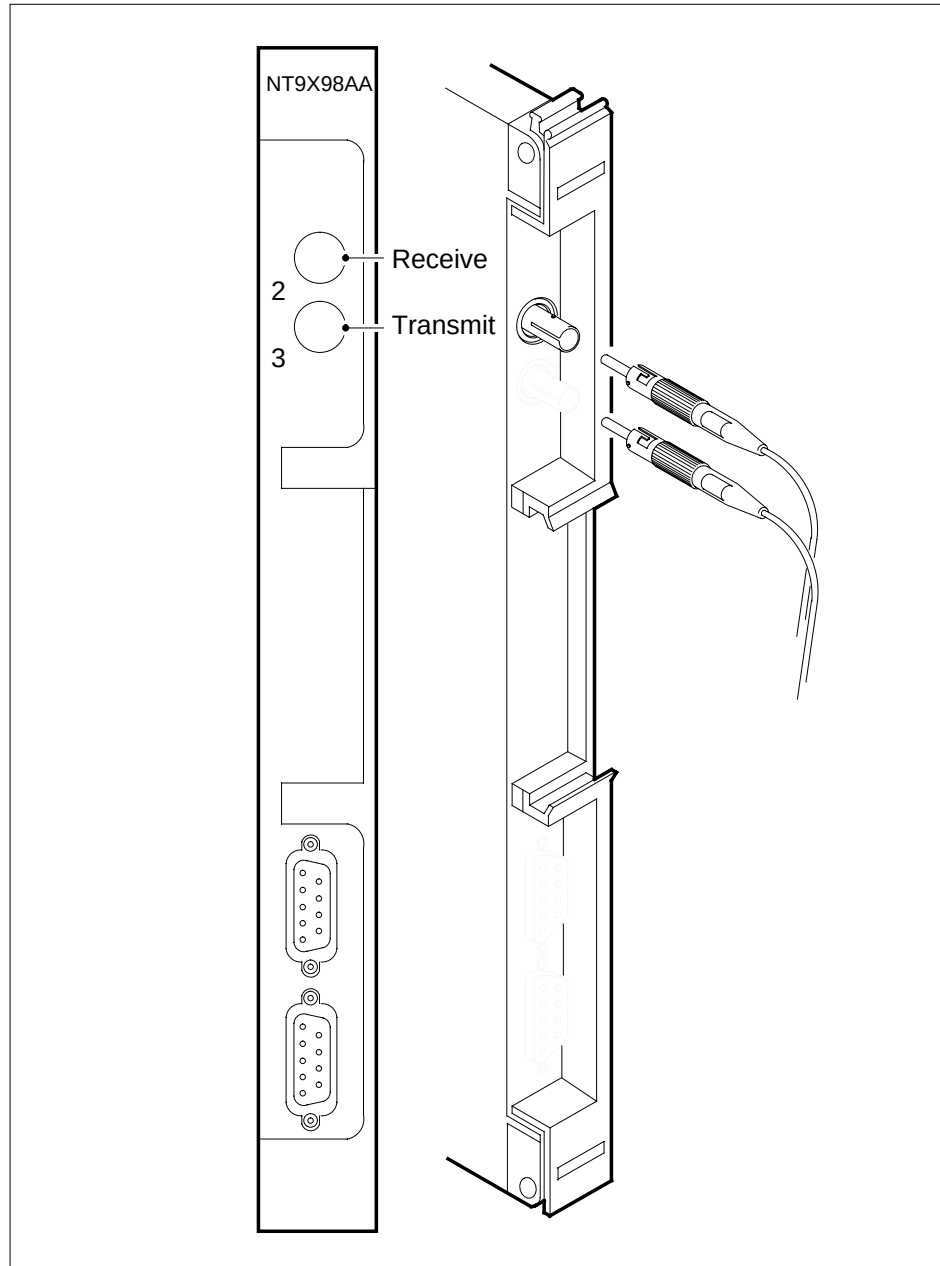


- 11** Run the temporary cable to the SSLPP. Use a direct route along the floor. Leave the cable that has faults in place. Nortel personnel remove the cable during installation of the replacement cable.

Connecting temporary fiber cable between MS and SSLPP (continued)

At the SSLPP

- 12** The figure shows the fiber cable receptacles on the NT9X98AA interface card. Note the names for Transmit and Receive.



- 13** Before you disconnect the link, make sure that you are at the correct SSLPP shelf.

Note: The MS 0 fiber cables terminate on unit 0 (slot 7R) of an SSLPP. The MS 1 fiber cables terminate on unit 1 (slot 32R) of an SSLPP.

Connecting temporary fiber cable between MS and SSLPP (continued)

- 14** Disconnect fiber cable that has faults from the correct NT9X98 card.
- Note:** The top connector is the SSLPP receive port and the bottom connector is the PM transmit port.
- 15** Place dust caps on the transmit and receive connectors of the cable that has faults.
- 16** Create new labels for the temporary fiber cable that contain the same information as those on the cable that has faults. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so that Nortel personnel who replace the cable, can identify the cable.

Example of a label:

EMC	00	26
32R	RX	
DPCC	00	26
21R	01	0T

Field descriptions:

EMC

is the cabinet that the cable terminates on

00

is the cabinet number

26

is the SSLPP shelf base mounting position number

32R

is the slot and position (R for rear, F for front)

RX

is the signal type at the PM end (RX for receive or TX for transmit)

DPCC

is the DPCC cabinet that contains the MS

00

is the cabinet number

26

is the MS shelf base mounting position number

21R

is the slot and position (R for rear, F for front)

01

is the card receptacle number

0T

is the port number and the signal type (T for transmit, R for receive)

- 17** Remove the dust caps on the transmit and receive connectors of the temporary fiber cable.

Connecting temporary fiber cable between MS and SSLPP (end)

18**WARNING****Avoid cross-connecting cables**

Make sure that the cable connected to the transmit port at the MS connects to the receive port at the SSLPP. Loss of service results if you connect the cables to transmit ports at each end. Loss of service results if the subsystems return to service configured in this method.

Connect the transmit and receive connectors of the temporary fiber cable to the SSLPP.

19

Return to the maintenance procedure that sent you to this procedure. Continue as directed.

Connecting temporary fiber cable from an ENET to a PM

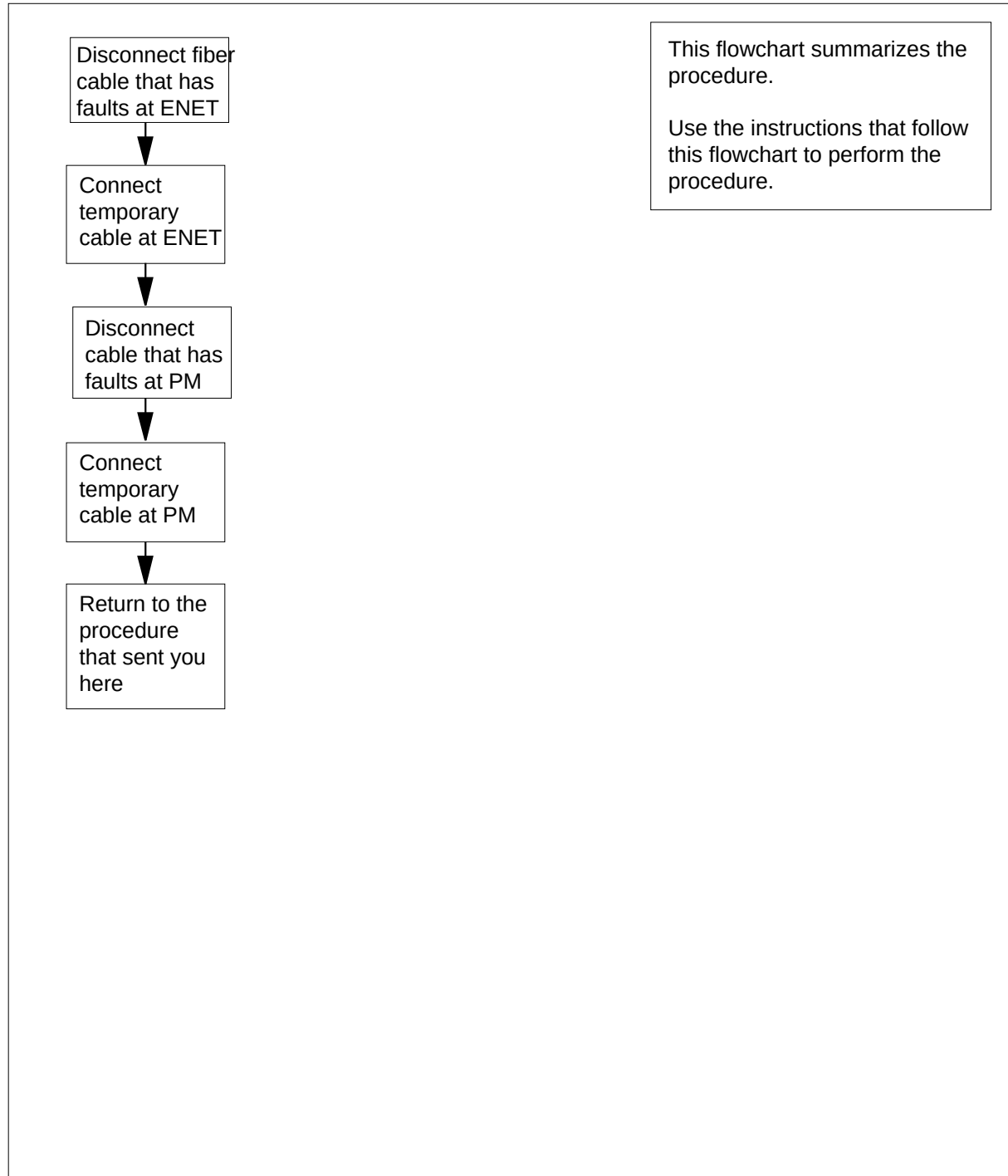
Application

Use this procedure to connect a temporary fiber cable between the enhanced network (ENET) and a peripheral module (PM).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Connecting temporary fiber cable from an ENET to a PM (continued)

Summary of Connecting temporary fiber cable from an ENET to a PM

Connecting temporary fiber cable from an ENET to a PM (continued)

Connecting temporary fiber cable from an ENET to a PM

At the ENET

1



WARNING

Possible equipment damage or loss of service

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, you can cause equipment damage or loss of service.



WARNING

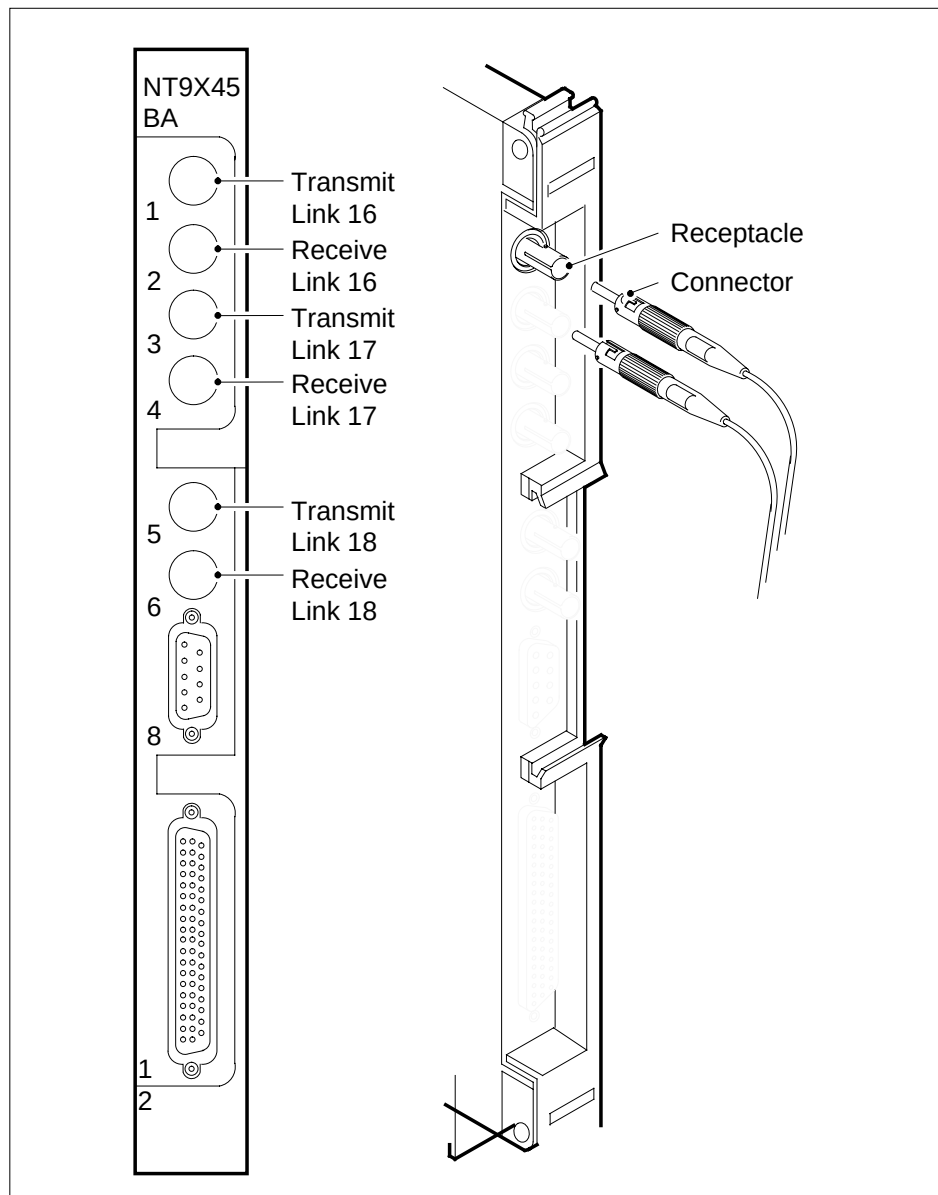
Fiber cable can become damaged

Use caution when you handle fiber cables. Do not crimp or bend the cables to a radius of less than 30 mm (1.18 in.).

Obtain a spare fiber cable to use as a temporary connection between the ENET node and the PM.

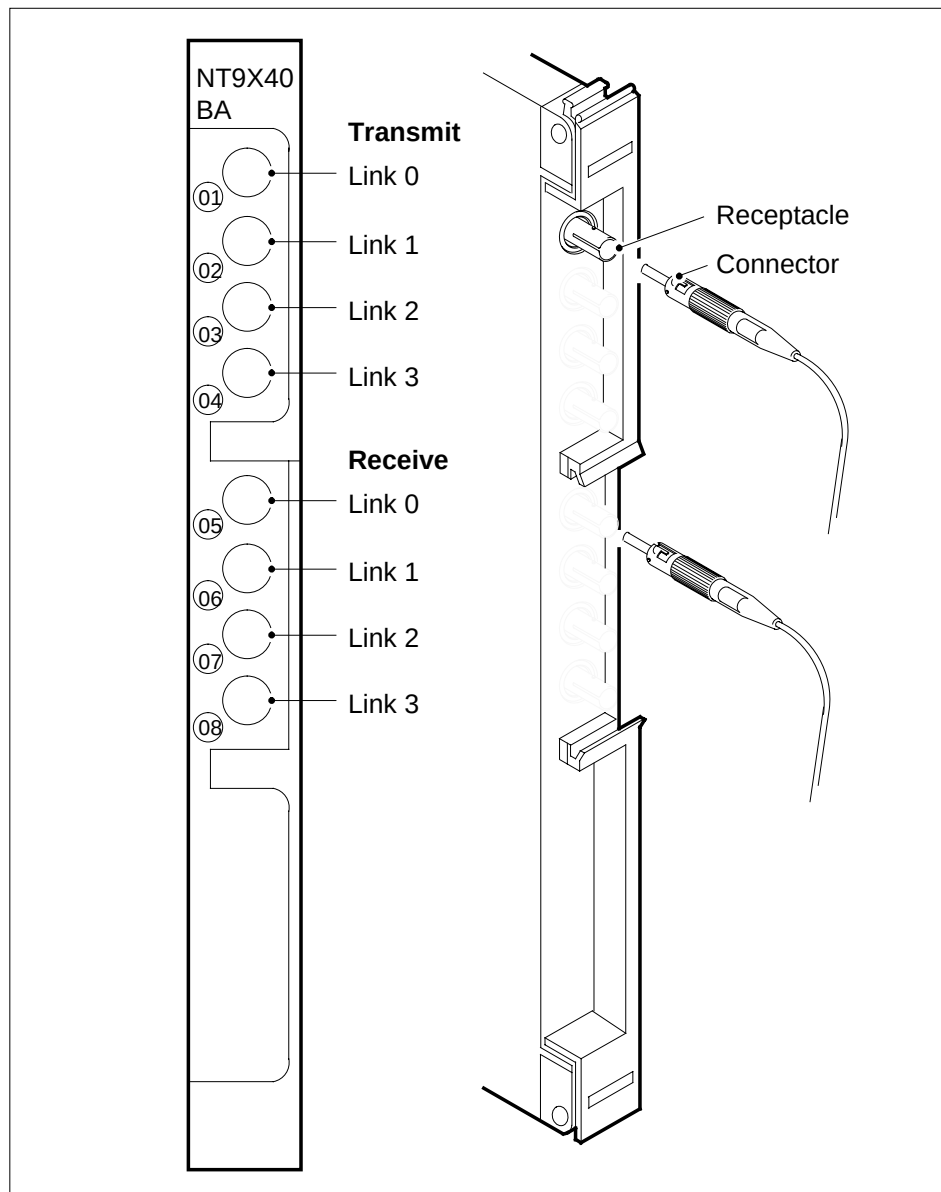
- 2 Before you disconnect the link, make sure that you are at the correct ENET node (plane and shelf name). Make sure that you are at the correct interface card (slot). Note the zone number of the fiber cable that has faults.
- 3 The following figure relates the zone numbers (1-12) that appear on the face of the card to the link numbers. The link numbers that appear on the MAP display for the NT9X45BA interface card. Note that only fiber connections appear. Note carefully the zone names for transmit and receive.

Connecting temporary fiber cable from an ENET to a PM (continued)



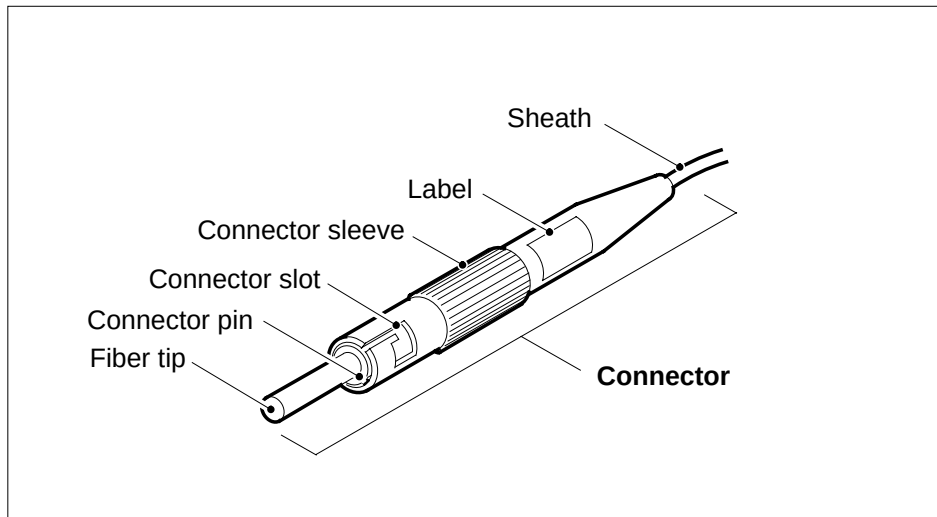
- 4 The following figure relates the zone numbers (01-08) that appear on the face of the card to the link numbers. The link numbers appear on the MAP display for the NT9X40BA interface card. Note carefully the zone names for transmit and receive.

Connecting temporary fiber cable from an ENET to a PM (continued)



- 5 The following figure shows the type of connector used for fiber connections between an ENET and a PM.

Connecting temporary fiber cable from an ENET to a PM (continued)

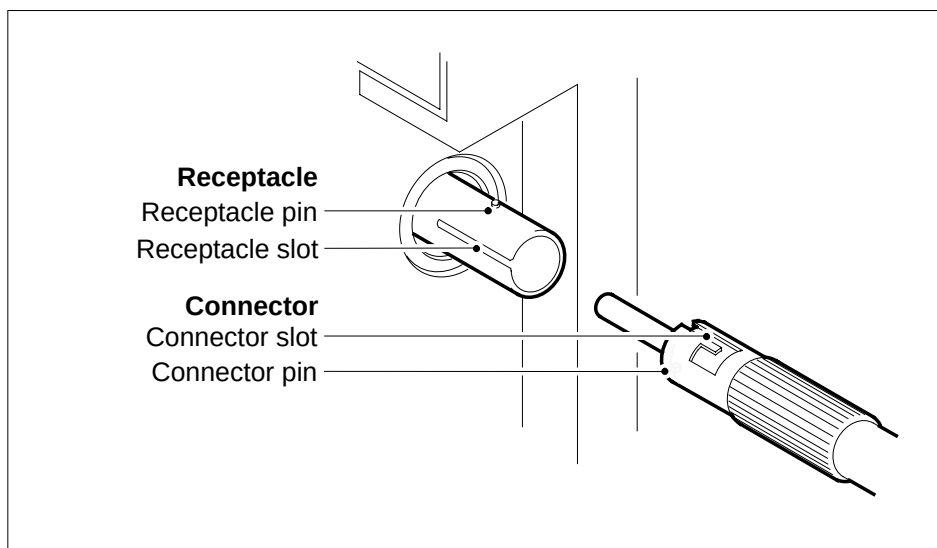


6

**WARNING****Do not contaminate the fiber tip surface**

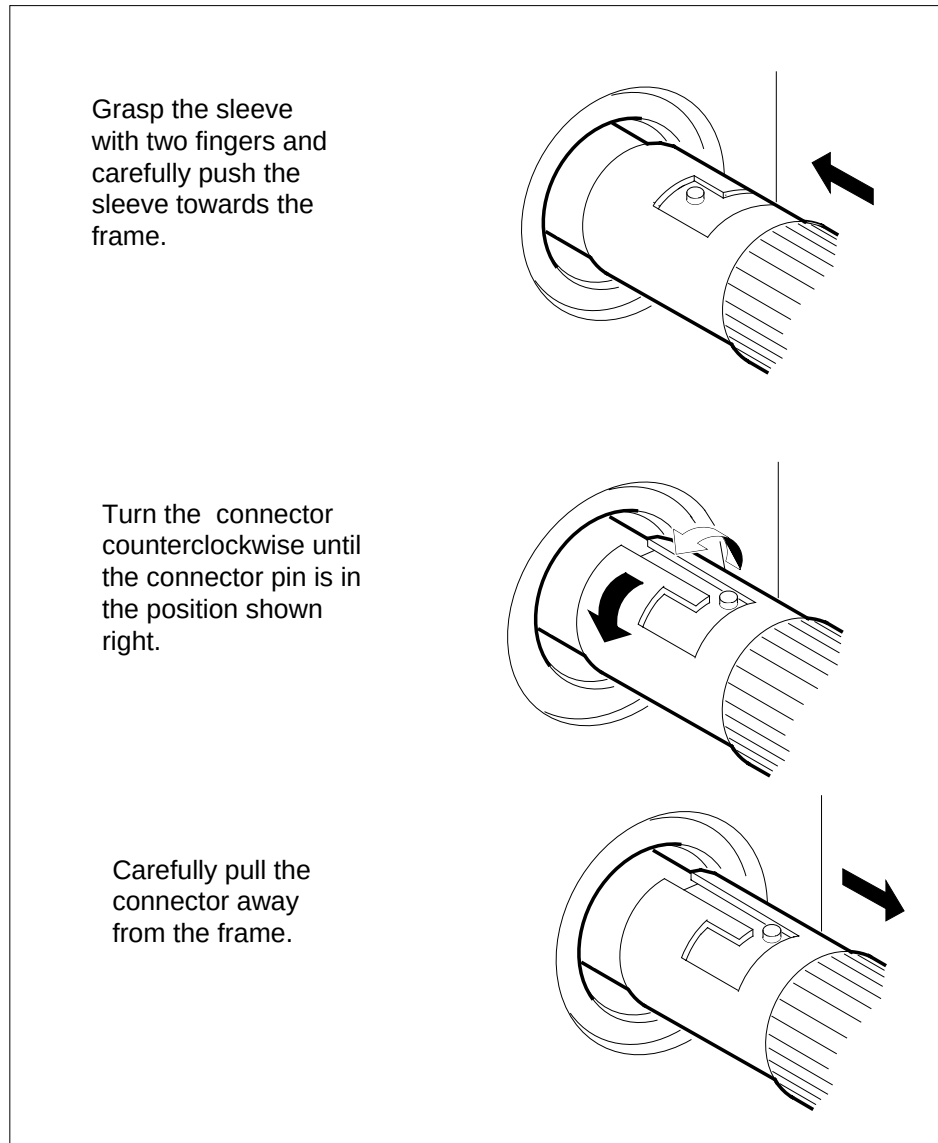
Do not touch the tip of the fiber. Dirt and oil transferred from the skin to the fiber tip surface degrade fiber performance.

The following figure shows the different parts of the connector and receptacle as referred to in this procedure.



Connecting temporary fiber cable from an ENET to a PM (continued)

- 7 Disconnect the transmit connectors and receive connectors for the cable that has faults.



- 8 Place dust caps on the transmit and receive connectors of the fiber cable that has faults.
- 9 Create new labels for the temporary fiber cable, that contain the same information as those on the cable that has fault. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so that Nortel (Northern Telecom) personnel, who will replace the cable, can easily identify the cable.

Note that the label identifies the ENET shelf number, plane number, slot number, link number, and the signal type (transmit or receive). It also specifies the PM on which the fiber terminates.

Connecting temporary fiber cable from an ENET to a PM (continued)

Example of a label:

ENC0	00	39
10R	04	17T
LTE	000	18
22R	RX	

Field descriptions:

ENC0

identifies the ENET plane, 0 or 1

00

identifies the cabinet number

39

identifies the ENET shelf by the base mounting position number

10R

identifies the slot number and position

(R for rear, F for front)

04

identifies the zone number

17T

identifies the link number and the signal type

(T for transmit, R for receive)

LTE

identifies the PM on which the cable terminates

000

identifies the PM frame number

18

identifies the PM shelf by the base mounting position number

22R

identifies the slot and position

(R for rear, F for front)

RX

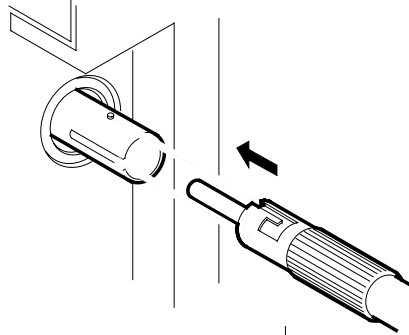
identifies the signal type at the PM end

(RX for receive or TX for transmit)

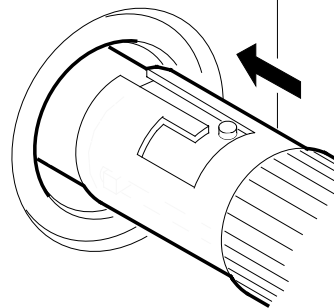
- 10** Remove the dust caps on the transmit and receive connectors of the temporary fiber cable.
- 11** Connect the transmit and receive connectors to the ENET.

Connecting temporary fiber cable from an ENET to a PM (continued)

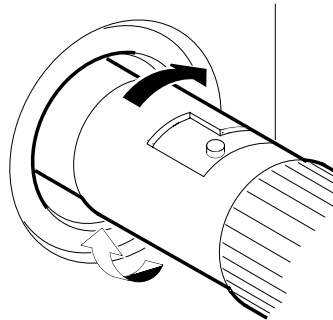
Align the connector pin and slot with the receptacle slot and pin respectively, as shown right.



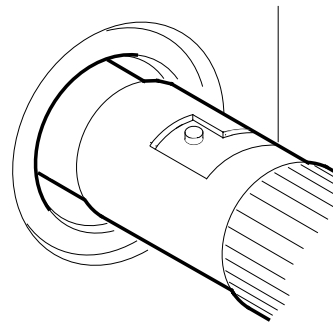
Carefully slide the connector into the receptacle.



Turn the connector clockwise to lock the connector in place.



Release the connector. The figure on the right shows the final connector position.



Connecting temporary fiber cable from an ENET to a PM (continued)

- 12** Run the temporary cable to the corresponding message switch. Use a direct route along the floor. Leave the cable that has faults in place. Nortel personnel remove the cable during installation of the replacement cable.

At the PM

- 13** Before you disconnect the link, make sure that you are at the correct PM.
Make sure that ENET plane 0 fiber cables terminate on unit 0 of a PM. Make sure that ENET plane 1 fiber cables terminate on unit 1 of a PM.
- 14** Disconnect the fiber cable that has faults from the correct NT6X40 card. Note that the top connector is the PM receive port and that the bottom connector is the PM transmit port.
- 15** Place dust caps on the transmit and receive connectors of the fiber cable that has faults.
- 16** Create new labels for the temporary fiber cable that contain the same information as those on the cable that has faults. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so that Nortel personnel, who will replace the cable, can identify the cable.

Example of a label:

LTE	000	18
22R	RX	
ENC0	00	39
10R	04	17T

Field descriptions:

LTE

identifies the PM

000

identifies the PM frame number

18

identifies the PM shelf by the base mounting position number

22R

identifies the slot number and position

(R for rear, or F for front)

RX

identifies the signal type at the PM end

(RX for receive or TX for transmit)

ENC0

identifies the ENET plane, 0 or 1, on which the
cable terminates

00

identifies the cabinet number

39

identifies the ENET shelf by the base mounting

Connecting temporary fiber cable from an ENET to a PM (end)

position number

10R

identifies the slot number and position

(R for rear, or F for front)

04

identifies the zone number

17T

identifies the link number and the signal type

(T for transmit, R for receive)

17



WARNING

Avoid cross-connecting cables

Make sure that the cable that connects to the transmit port at the ENET connects to the receive port at the PM. Loss of service results when you connect the cables to transmit ports at each end.

Remove the dust caps on the transmit connectors and receive connectors of the temporary fiber cable. Connect the cables to the PM.

18

Return to the maintenance procedure that sent you to this procedure. Continue as directed.

Connecting temporary fiber cable from an ENET to an MS

Application

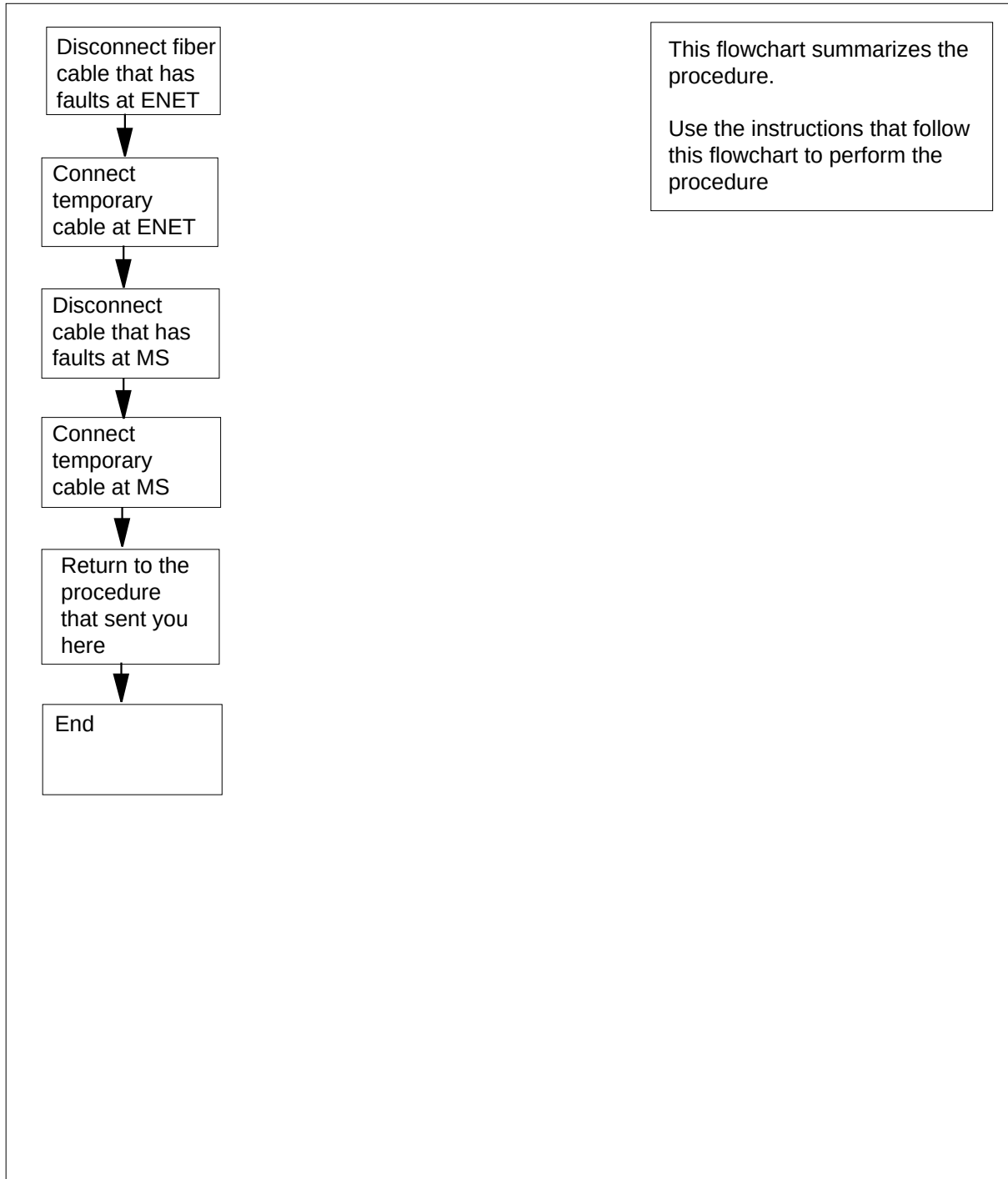
Use this procedure to connect a temporary fiber cable between the enhanced network (ENET) and the message switch (MS).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Connecting temporary fiber cable from an ENET to an MS (continued)

Summary of Connecting temporary fiber cable from an ENET to an MS



Connecting temporary fiber cable from an ENET to an MS (continued)

Connecting temporary fiber cable from an ENET to an MS***At the ENET*****1****WARNING****Possible equipment damage or loss of service**

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

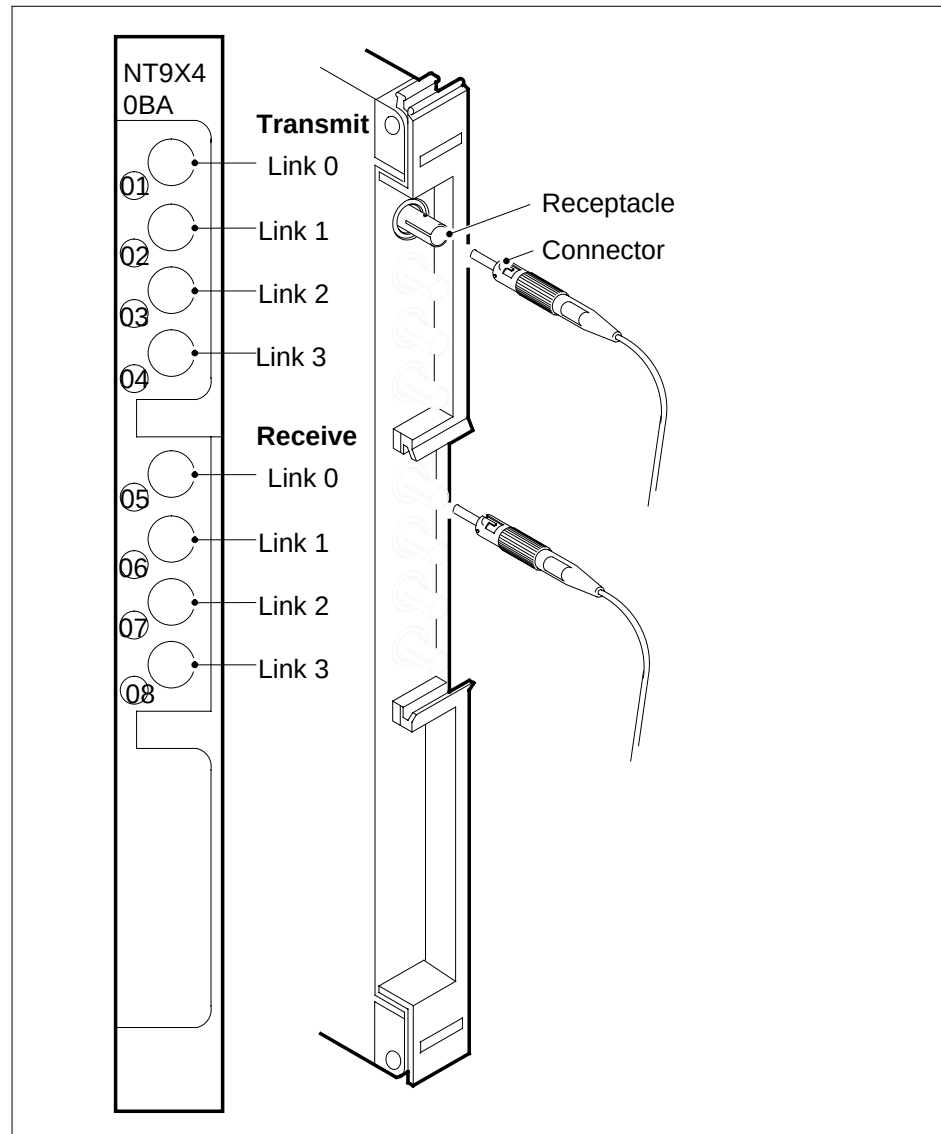
**WARNING****Fiber cable can become damaged**

Use caution when you handle fiber cables. Do not crimp or bend the cables to a radius of less than 30 mm (1.18 in.).

Obtain a spare fiber cable to use as a temporary connection between the ENET node and the MS.

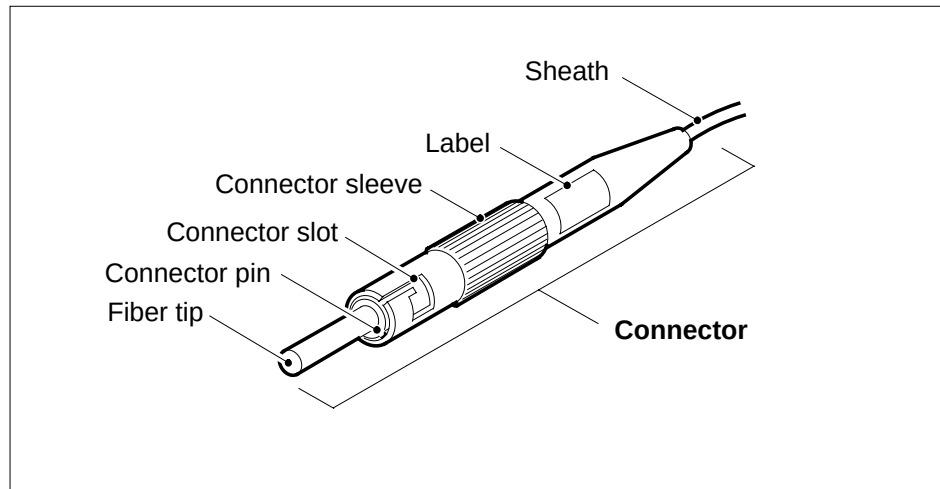
- 2** Before you disconnect the link, make sure that you are at the correct ENET node (plane and shelf name). Make sure that you are at the correct interface card (slot). Note the zone number of the fiber cable that has faults.
- 3** The following figure relates the zone numbers (01-08) that appear on the face of the card to the link numbers. The link numbers appear on the MAP display for the NT9X40BA interface card. Note the zone names for the transmit receptacle and receive receptacle.

Connecting temporary fiber cable from an ENET to an MS (continued)



- 4 The following diagram shows the type of connector used for fiber connections between an ENET and an MS.

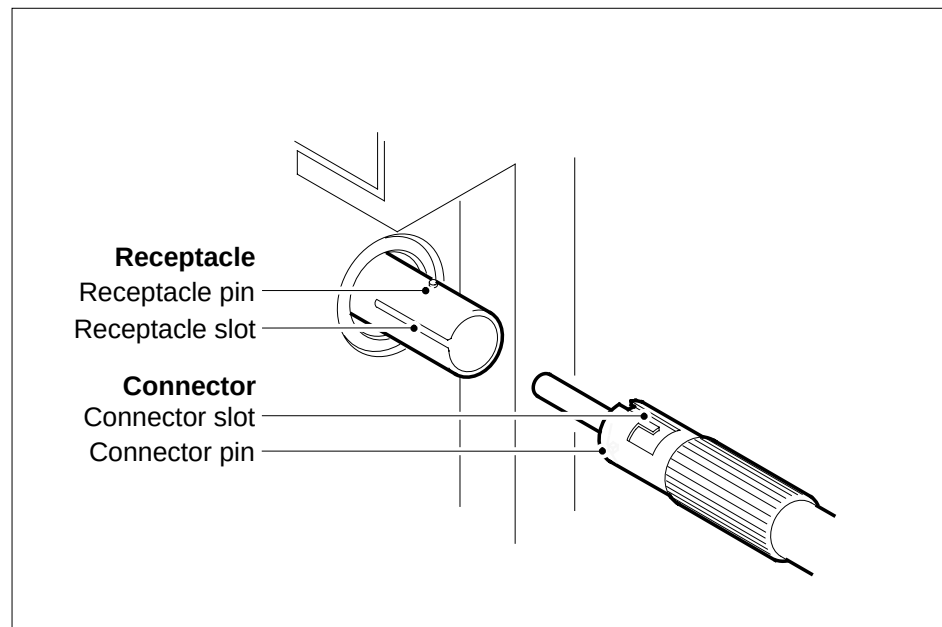
Connecting temporary fiber cable from an ENET to an MS (continued)

**5****WARNING****Do not contaminate the fiber tip surface**

Do not touch the tip of the fiber. Dirt and oil transferred from the skin to the fiber tip surface degrades fiber performance.

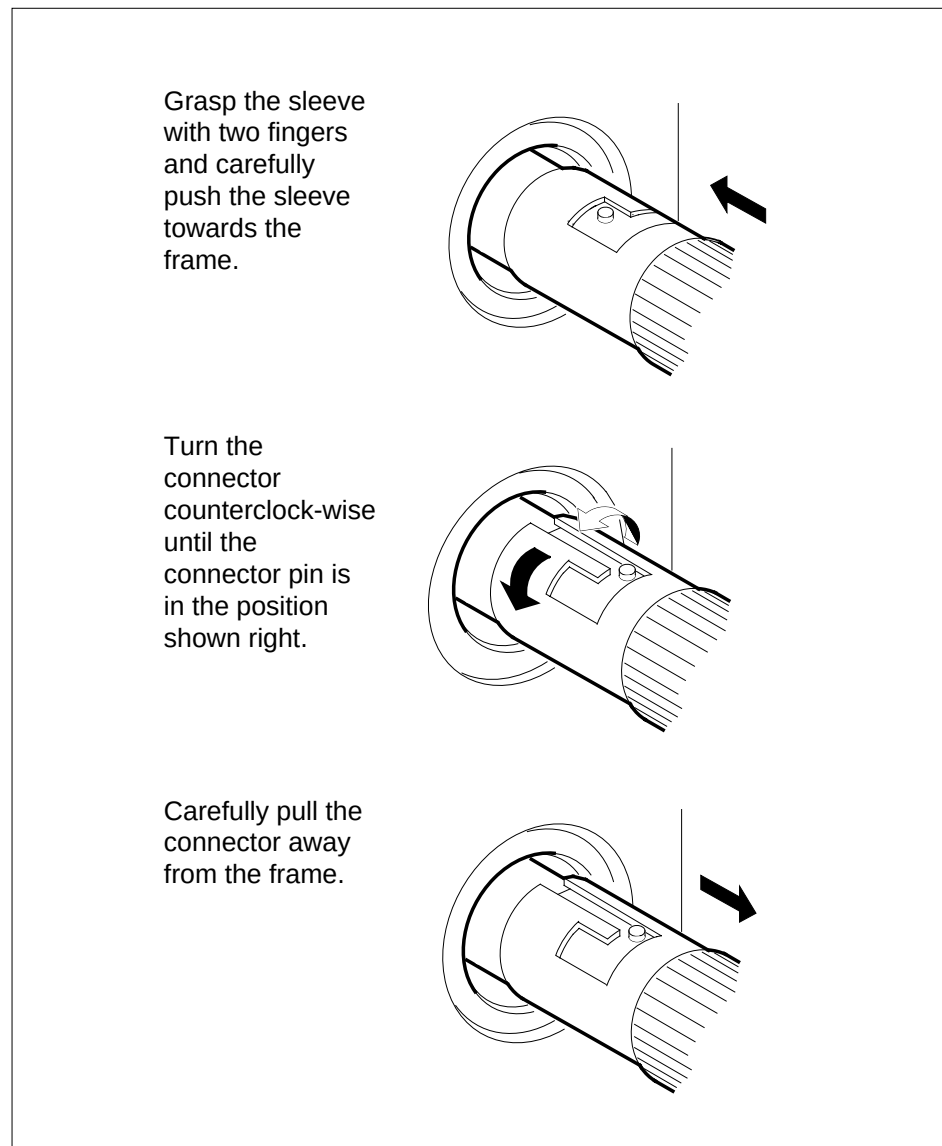
The following diagram shows the different parts of the connector and receptacle as referred to in this procedure.

Connecting temporary fiber cable from an ENET to an MS (continued)



- 6 Disconnect the transmit and receive connectors for the cable that has faults.

Connecting temporary fiber cable from an ENET to an MS (continued)



- 7 Place dust caps on the transmit connectors and receive connectors of the fiber cable that has faults.
- 8 Create new labels that contain the same information as those on the cable that has faults for the temporary fiber cable. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so that Nortel personnel, who replace the cable, can identify the cable.

Make sure that the label identifies the ENET shelf number, plane number, slot number, link number. Make sure the label identifies the signal type, transmit or receive. The label should also specify the MS on which the fiber terminates.

Example of a label:

Connecting temporary fiber cable from an ENET to an MS (continued)

ENC0	00	39
10R	04	17T
LTE	000	18
22R	RX	

Field descriptions:

ENC0

identifies the ENET plane, 0 or 1

00

identifies the cabinet number

39

identifies the ENET shelf by the base mounting position number

10R

identifies the slot number and position (R for

rear, F for front)

04

identifies the zone number

17T

identifies the link number and the signal type

(T for transmit, R for receive)

LTE

identifies the PM on which the cable terminates

000

identifies the PM frame number

18

identifies the PM shelf by the base mounting position number

22R

identifies the slot and position (R for rear, F for front)

RX

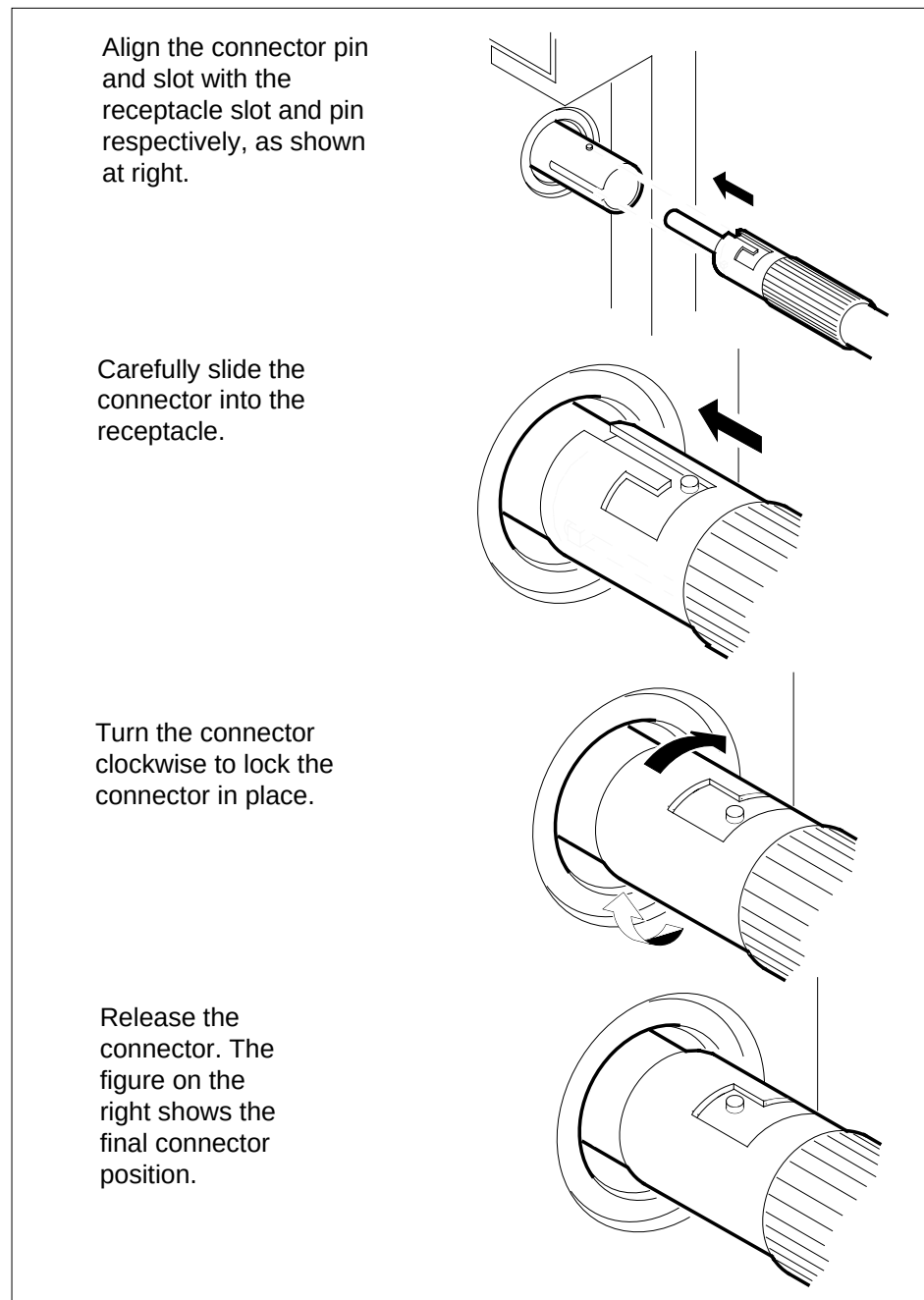
identifies the signal type at the PM end (RX

for receive or TX for transmit)

9 Remove the dust caps on the transmit and receive connectors of the temporary fiber cable.

10 Connect the transmit and receive connectors to the ENET.

Connecting temporary fiber cable from an ENET to an MS (continued)

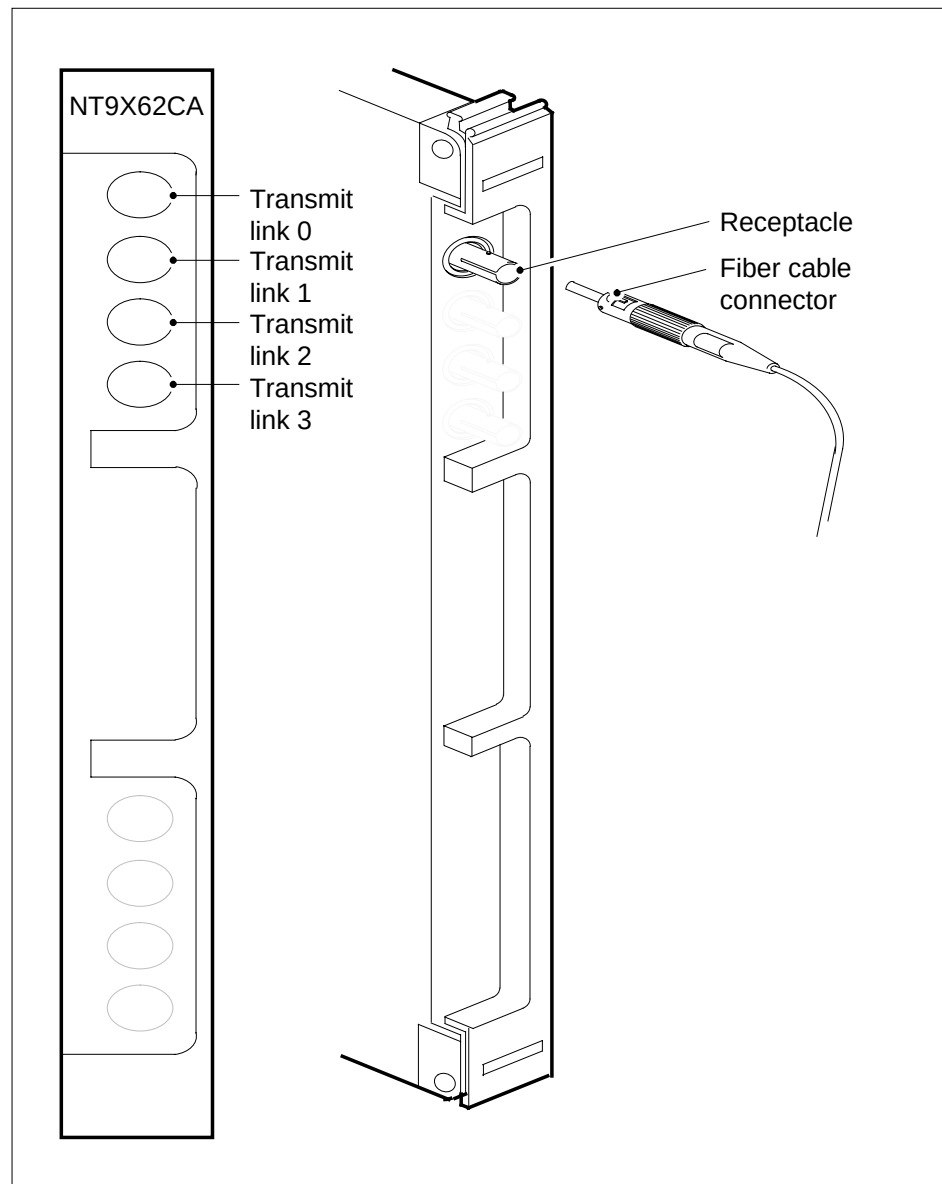


- 11** Run the temporary cable to the corresponding message switch. Use a direct route along the floor. Leave the cable that has faults in place. Northern Telecom personnel remove the cable during installation of the replacement cable.

Connecting temporary fiber cable from an ENET to an MS (continued)

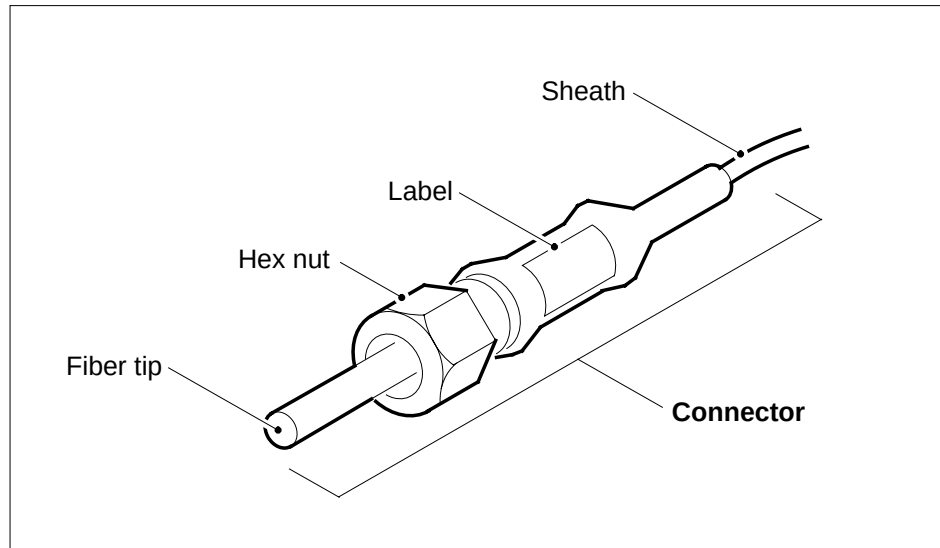
At the MS

- 12** Before you disconnect the link, make sure that you are at the correct message switch and the correct interface card (slot). Note the position of the fiber link that has faults.
- 13** Create new labels that contain the same information as those on the cable that has faults for the temporary fiber cable. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so Nortel personnel who will replace the cable, can identify the cable.
- 14** The following figure shows the faceplate of the NT9X62CA interface card.



Connecting temporary fiber cable from an ENET to an MS (continued)

- 15 The following figure shows the type of connector used for fiber connections between an ENET and an MS.



16

**WARNING****Do not contaminate the fiber tip surface**

Do not touch the tip of the fiber. Dirt and oil transferred from the skin to the fiber tip surface degrades fiber performance.

Disconnect fiber cable that has faults from the correct NT9X62 card.

- a Turn the hex nut counter-clockwise to loosen the connector.
 - b Unplug the connector.
- 17 Replace the dust caps on the transmit and receive connectors of the fiber cable that has faults.
- 18 Remove the dust caps on the transmit and receive connectors of the temporary fiber cable.
- 19

**WARNING****Fiber cable can become damaged**

Use caution when you handle fiber cables. Do not crimp or bend the cables to a radius of less than 30 mm (1.18 in.).

Connecting temporary fiber cable from an ENET to an MS (end)

Connect the temporary fiber cable to the MS.

- a** Align the fiber tip with the receptacle hole.
- b** Carefully slide the connector into the receptacle.
- c** Turn the hex nut clockwise to secure the connector in place.

- 20** Return to the maintenance procedure that sent you to this procedure.
Continue as directed.

Correcting a load mismatch

Application

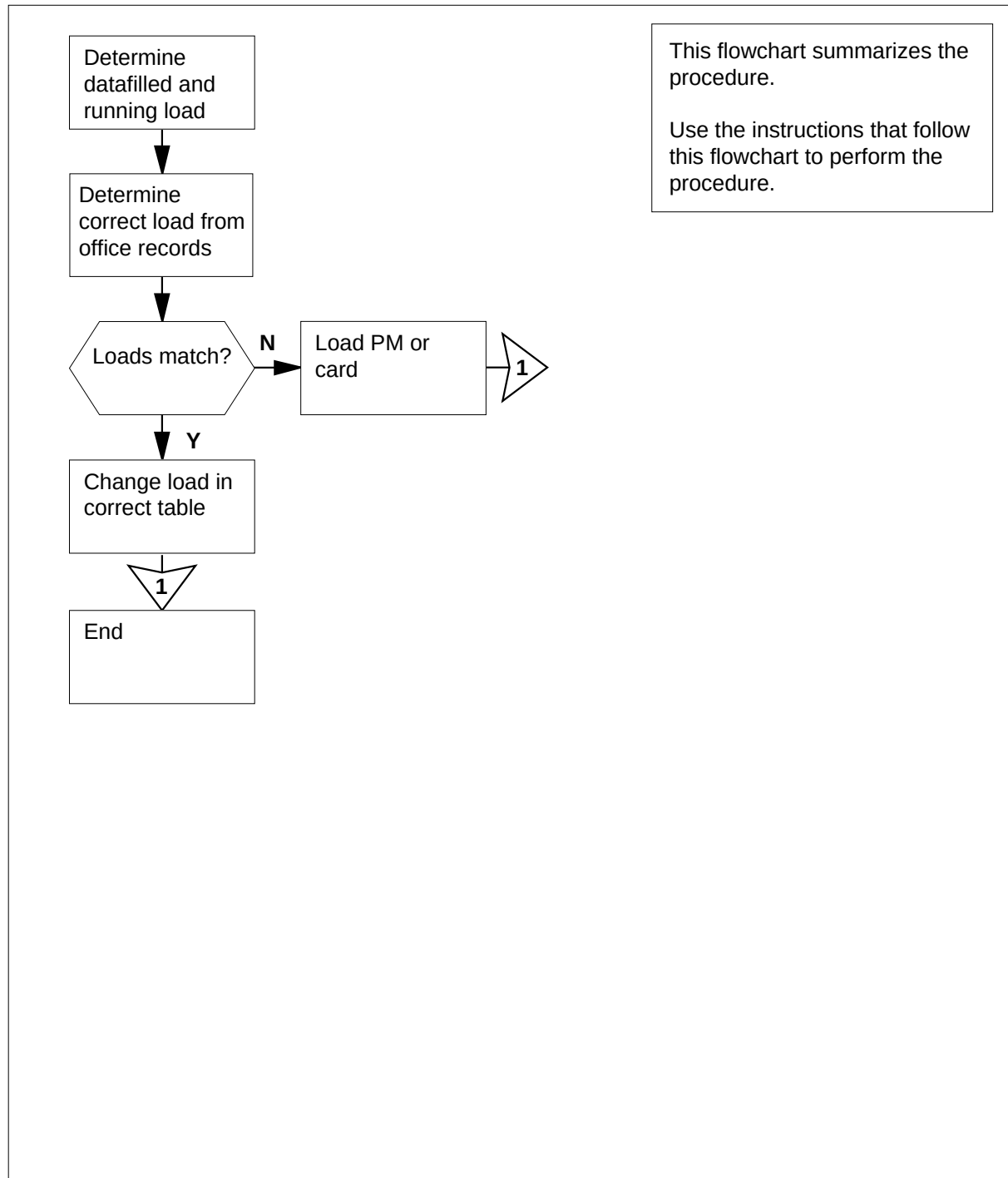
Use this procedure to match the software load with the specified datafilled load. The software load runs on a PM, a signaling terminal controller (STC) or a CLASS modem resource (CMR) card.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Correcting a load mismatch (continued)

Summary of Correcting a load mismatch



Correcting a load mismatch (continued)

Correcting a load mismatch

At your current location

1



CAUTION
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur

Follow the correct procedure. The procedure depends on the type of load mismatch.

If the load mismatch	Do
is a PM or a CMR card load	step 2
is an STC load	step 42

2 Determine the state of the PM unit in the procedure that sent you here.

If the PM unit state	Do
is ISTb or InSv	step 8
is other than listed here	step 3

3 To access the correct PM inventory table, type

>TABLE xxxINV

and press the Enter key.

where

xxx
is the specific PM node type (for example, LTC, MSB)

Note: Table LTCINV also applies to PM types LGC, DTC, and PDTC.
Table MSBINV applies to both the MSB6 and the MSB7 and to the STCs.
Table STCINV also applies to STC.

4 To position on the datafill tuple for the posted PM, type

>POSITION pm_type pm_no

and press the Enter key.

where

pm_type
is the type of PM (for example, DTC, LGC, MSB6, or PDTC)

Correcting a load mismatch (continued)

pm_no

is the number of the PM (0 to 2047)

Example of a MAP response:

```
DTC 0
      1002 DTE 0 18 0 B 6 6X02AA NDT34AB
                                ( ABTRK DTCEX)$
(2 0)(2 16)(2 32)(2 48)(2 17)(2 49)(2 1)(2 33)(2 2)(2 50)(2 34)
(2 18)(2 35)(2 19)(2 3)(2 51) $
      (CONTINUITY)(UTR16)(TONE6X79)(MSG6X69)(CMR13 CMRAG03)$
NORTHAM      6X45BA 6X45BA
                                XPMRGA02
6X40AA                                (CCS7)$
```

Note: In this example from table LTCINV, the software load name in field LOAD is NDT34AB. The optional CMR card in field OPTCARD is CMR13 and the load name in field CMRLOAD is CMRAG03. The card PEC in field PECS6X45 is 6X45BA. The firmware load name in field E2LOAD is XPMRGA02.

- 5 Record the load name in the field LOAD. If the PEC in field PEC6X45 is MX77, record the firmware LOADNAME in field E2LOAD.
- 6 To exit the inventory table, type
>QUIT
 and press the Enter key.
- 7 Go to step 10.
- 8 To determine the load that runs on the PM or the CMR card, type
>QUERYPM CNTRS
 and press the Enter key.

Example of a MAP response:

```
Unsolicited MSG limit = 250, Unit 0 = 2, Unit 1 = 0
Unit 0:
Ram Load: NDT34AB
Rom Load: XPMRGA02
CMRLOAD: CMRAG03
Unit 1:
Ram Load: NDT34AB
Rom Load: XPMRGA02
CMRLOAD: CMRAG03
```

Note: In this example for an LGC, the load that runs on each of the LGC units appears beside the header Ram Load. In this example, the load that runs is NDT34AB. The firmware load that runs on each of the LGC units appears beside the header Rom Load. In this example, the firmware load that runs is XPMRGA02. The load that runs on the CMR card in each unit appears beside the header CMRLOAD. In this example, the load on the CMR is CMRAG03.

- 9 Record the software and firmware loads that run on the PM or the CMR card.

Correcting a load mismatch (continued)

- 10** Determine from office records the correct loadname.

If the loadname from office records	Do
match the load datafilled for the PM or the CMR card	step 11
match the load that runs on the PM or the CMR card	step 16

- 11** Proceed as follows if you are working on a PM or a CMR card.

If you	Do
are working on a PM	step 12
are working on a CMR card	step 14

- 12** To load the PM unit, type
>LOADPM UNIT unit_no
 and press the Enter key.

where

unit_no
 is the PM unit (0 or 1)

If the LOADPM command	Do
passed	step 13
failed	step 15

- 13** To return the PM unit to service, type
>RTS UNIT unit_no
 and press the Enter key.

where

unit_no
 is the PM unit (0 or 1)

If the RTS command	Do
passed	step 64
failed	step 63

- 14** To load the CMR card, type
>LOADPM UNIT unit_no CMR
 and press the Enter key.

Correcting a load mismatch (continued)

where

unit_no
is the PM unit (0 or 1)

If the LOADPM command	Do
passed	step 64
failed	step 15

- 15** Perform the procedure *How to load a PM* in this document. Complete the procedure and return to this point.

- 16** To access the correct PM inventory table, type

>TABLE xxxINV

and press the Enter key.

where

xxx
is the specific PM node type (for example, LTC, MSB)

Note: Table LTCINV also applies to PM types LGC, DTC, and PDTC.
Table MSBINV applies to both the MSB6 and the MSB7 and to the STCs.
Table STCINV also applies to STC.

- 17** To position on the datafill tuple for the posted PM, type

>POSITION pm_type pm_no

and press the Enter key.

where

pm_type
is the type of PM (for example, DTC, LGC, MSB6, or PDTC)

pm_no
is the number of the PM (0 to 2047)

If the load to change	Do
is for the CMR card	step 18
is for the PM	step 21

- 18** To change the datafilled load so that the card datafill matches the LOADNAME that runs on the card, type

>CHANGE OPTCARD

and press the Enter key.

Example of a MAP response:

ENTER Y TO CONTINUE PROCESSING OR N TO QUIT

- 19** To confirm the command, type

>Y

Correcting a load mismatch (continued)

and press the Enter key.

Example of a MAP response:

CMRLOAD: CMRAG02

Note: To change the load of the CMR card, press the Enter key until field CMRLOAD appears.

20 Go to step 23 to enter the correct loadname for the CMR card.

21 To change the datafilled load so that the PM datafill and the LOADNAME that runs on the PM match, type

>CHANGE LOAD

and press the Enter key.

Example of a MAP response:

ENTER Y TO CONTINUE PROCESSING OR N TO QUIT

22 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

LOAD: NDT33CA

23 To enter the correct load name, type

>load_name

and press the Enter key.

where

load_name

is the name of the load that runs on the PM or CMR card,

that you recorded in step 5 or step 9

Example input:

>NDT34AB

and press the Enter key.

Example of a MAP response:

TUPLE TO BE CHANGED:

LGC 0

LGE 0 18 0 B 1 6X02AA NDT34AB

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.

Note: The whole MAP prompt does not appear in this example.

Correcting a load mismatch (continued)

- 24 To confirm the command, type

>Y

and press the Enter key.

If the MAP response

Do

is TUPLE CHANGED

step 64

is Field_name file is
not datafilled in ta-
ble PMLOADS

step 25

- 25 To reject the entry change, type

>N

and press the Enter key.

- 26 To exit the PM inventory table, type

>QUIT

and press the Enter key.

- 27 To access the disk utility, type

>DISKUT

and press the Enter key.

Note: The command DISKUT applies to a SuperNode front end. For an NT40 front end, the command is DSKUT.

- 28 To confirm that the load file that you recorded in step 10 is in your user directory, type

>LISTFL file_name

and press the Enter key.

where

file_name

is the name of the storage device from office records

Note: The command LISTFL file_name applies to a SuperNode front end. For an NT40 front end, the command is LISTVOL vol_name.

- 29 To exit the disk utility, type

>QUIT

and press the Enter key.

- 30 Determine if the device specified for the PM load file matches the office records from step 10.

If the device name

Do

does not match

step 63

matches

step 31

Correcting a load mismatch (continued)

31 To access table PMLOADS, type

>TABLE PMLOADS

and press the Enter key.

32 To add the new file name to table PMLOADS, type

>ADD new_file_name

and press the Enter key.

where

new_file_name

is the file name

Example input:

>ADD ARC37CJ

and press the Enter key.

Note: The file name must start with a letter.

Example of a MAP prompt:

ENTER Y TO CONTINUE PROCESSING OR N TO QUIT

33 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

ACTFILE:

34 To enter the name of the loadfile, type

>actfile

and press the Enter key.

where

actfile

is the name of the loadfile.

Example input:

>ARC37CJ

and press the Enter key.

Example of a MAP response:

ACTVOL:

35 To enter the name of the storage device that contains the loadfile from step 28, type

>actvol

and press the Enter key.

where

Correcting a load mismatch (continued)

actval
is the name of the storage device

Example input:

>S00DVOL1

and press the Enter key.

Example of a MAP response:

BKPFIL :

- 36** To enter the name of the backup loadfile, type

>bkpfile

and press the Enter key.

where

bkpfile
is the name of the backup loadfile and must be identical to the

name that you entered in step 34.

Example input:

>ARC37CJ

and press the Enter key.

Example of a MAP response:

BKPVOL :

- 37** To enter the name of the storage device that contains the backup loadfile, type

>bkpvol

and press the Enter key.

where

bkpvol
is the name of the storage device

Example input:

>S00DVOL1

Example of a MAP response:

UPDACT :

- 38** To enter the automatic loadfile name update confirmation, type

>updact

and press the Enter key.

where

updact
is if the system must update loadfile name automatically

Correcting a load mismatch (continued)

(Y or N)

Example input:

>Y

Example of a MAP response:

```
TUPLE TO BE ADDED:
      ARC37CJ
      ARC37CJ          S00DVOL1
      ARC37CJ          S00DVOL1          Y
```

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.

- 39** To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
TUPLE ADDED
```

- 40** To exit table PMLOADS, type

>QUIT

and press the Enter key.

- 41** Repeat steps 16 to 24. Complete the steps and return to this point.

- 42** To determine the load datafilled for the STC, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

```
PM Type: MSB7 PM No.: 0 PM Int. No.: 0 Node_No.: 59
PMs Equipped: 56 Loadname: MC7XB01
STCLOADS in MSBINV table: M7CQA01
```

Note: The load datafilled for the STC appears next to STCLOADS. In this example the load is M7CQA01.

- 43** Determine from office records the correct STC load.

If the loadname from office records	Do
matches the datafilled load	step 59
does not match the datafilled load	step 44

Correcting a load mismatch (continued)

- 44 To access table MSBINV, type

>TABLE MSBINV

and press the Enter key.

- 45 To position on the datafill tuple for the MSB, type

>POSITION MSBx msb_no

and press the Enter key.

where

x

is the type of MSB (6 or 7)

msb_no

is the number of the MSB (0 to 2049)

Example input:

>POSITION MSB7 0

Example of a MAP response:

MSB7 0

MS7E 0 18 0 C 2 6X32AA MC734CA

(1 0) 1 8) 1 16) 1 24)\$

(C7)\$

(M7CLA01)\$

(MSG6X69)\$

6X45AE 6X45AE

- 46 To change the datafilled load for the STC to match the load obtained from office records, type

>CHANGE STCLOADS

and press the Enter key.

Example of a MAP response:

ENTER Y TO CONTINUE PROCESSING OR N TO QUIT

- 47 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

STCLOAD: M7CLA01

- 48 To enter the correct load name, type

>stc_loadname

and press the Enter key.

where

Correcting a load mismatch (continued)

stc_loadname

is the name of the STC load from office records

Example input:

>M7CQA01

Example of a MAP prompt:

STCLOADS:

- 49** To close the STCLOADS field, type

> \$

and press the Enter key.

Note: Enter a space before the \$ character.

Example of a MAP response:

TUPLE TO BE CHANGED:

MSB7 0

MS7E 0 18 0 C 2 6X32AA MC734CA

(1 0) 1 8) 1 16) 1 24)\$

(C7)\$

(M7CQA01)\$

(MSG6X69)\$

6X45AE 6X45AE

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.

- 50** To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

TUPLE CHANGED

- 51** To exit table MSBINV, type

>QUIT

and press the Enter key.

- 52** To access table STINV, type

>TABLE STINV

and press the Enter key.

- 53** To position on the datafill tuple for the ST, type

>POSITION st_no

and press the Enter key.

where

Correcting a load mismatch (continued)

st_no
is the number of the MSB (0 to 1023)

Example input:

>POSITION 100

- 54 To change the datafilled load for the STC to match the load that you obtained from office records, type

>CHANGE LOAD

and press the Enter key.

Example of a MAP prompt:

ENTER Y TO CONTINUE PROCESSING OR N TO QUIT

- 55 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

LOAD: M7CJA01

- 56 To enter the correct load name, type

>stc_loadname

and press the Enter key.

where

stc_loadname
is the name of the STC load from office records

Example of a MAP response:

TUPLE TO BE CHANGED:

100 MSB7 0 0 0 6X66AA M7CQA01 C7 4
MSB 0 1 56K

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.

- 57 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

TUPLE CHANGED

- 58 To exit table STINV, type

>QUIT

and press the Enter key.

Correcting a load mismatch (end)

- 59** To determine if the MSB units contain any STC loads, type

>STCLOAD UNIT unit_no QUERY

and press the Enter key.

where

unit_no

is the number of the MSB unit (0 or 1)

If the response

Do

is MSBx msb_no unit_no does not contain any STC Loads

step 60

is MSBx msb_no unit_no contains STC Loads: stc_loadname
OK

step 64

-
- 60** To add the STC load that you determined in step 43 to the MSB unit, type

>STCLOAD UNIT unit_no A stc_loadname

and press the Enter key.

where

unit_no

is the number of the MSB unit (0 or 1)

stc_loadname

is the name of the STC load

If the response

Do

is STC load load_name added to MSBx msb_no unit unit_no

step 64

is Load File Not In Directory

step 61

-
- 61** Perform the procedure *Loading a PM* in this document. Complete the procedure and return to this point.

- 62** Go to step 60.

- 63** For additional help, contact the next level of support.

- 64** The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

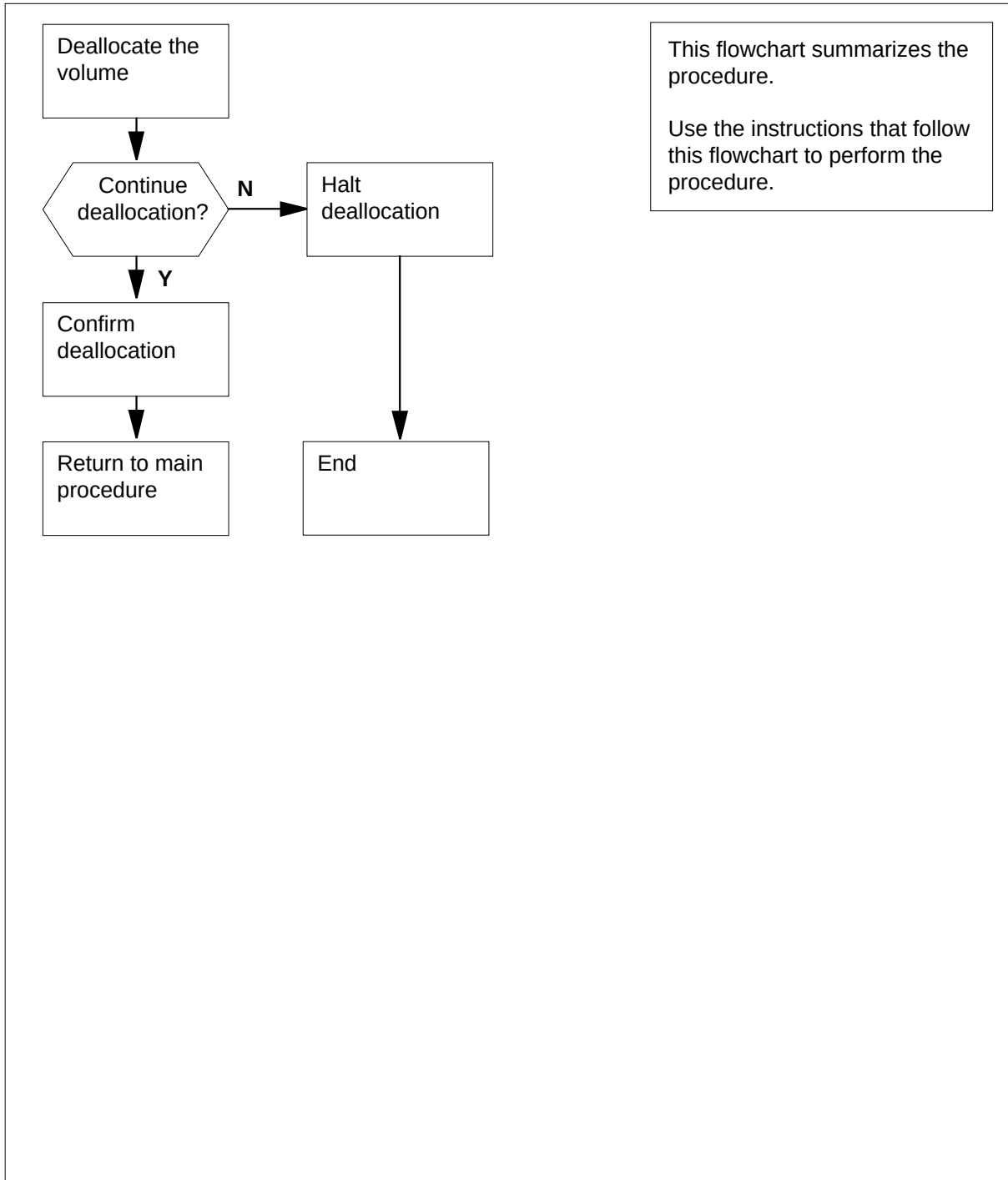
Deallocating a volume

Application

Use this procedure to deallocate a volume.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Deallocating a volume (continued)**Summary of Deallocating a volume**

Deallocating a volume (continued)

Deallocating a volume

At the MAP terminal

1



DANGER

Possible equipment damage or loss of service

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

To deallocate the full volume, type

>DMNT ssys vol_name

and press the Enter key.

where

ssys

is the subsystem

vol_name

is the volume name

Example of a MAP display:

```

UPDATING VOLUME INFORMATION FOR vol_name:  VOLUME nn IN
REGULAR POOL n, pool_name
PLEASE CONFIRM ("YES" OR "NO"):
  
```

2

Determine if you want to continue with the volume deallocation.

If you	Do
want to continue	step 5
do not want to continue	step 3

3

To halt the deallocation, type

>NO

and press the Enter key.

4

You decided not to complete this alarm clearing procedure. Go to the next procedure.

5

To confirm the deallocation, type

>YES

and press the Enter key.

Deallocating a volume (end)

Example of a MAP:

REGULAR VOLUME vol_name ALLOCATED.

- 6 The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Failure to switch clock mastership

Application

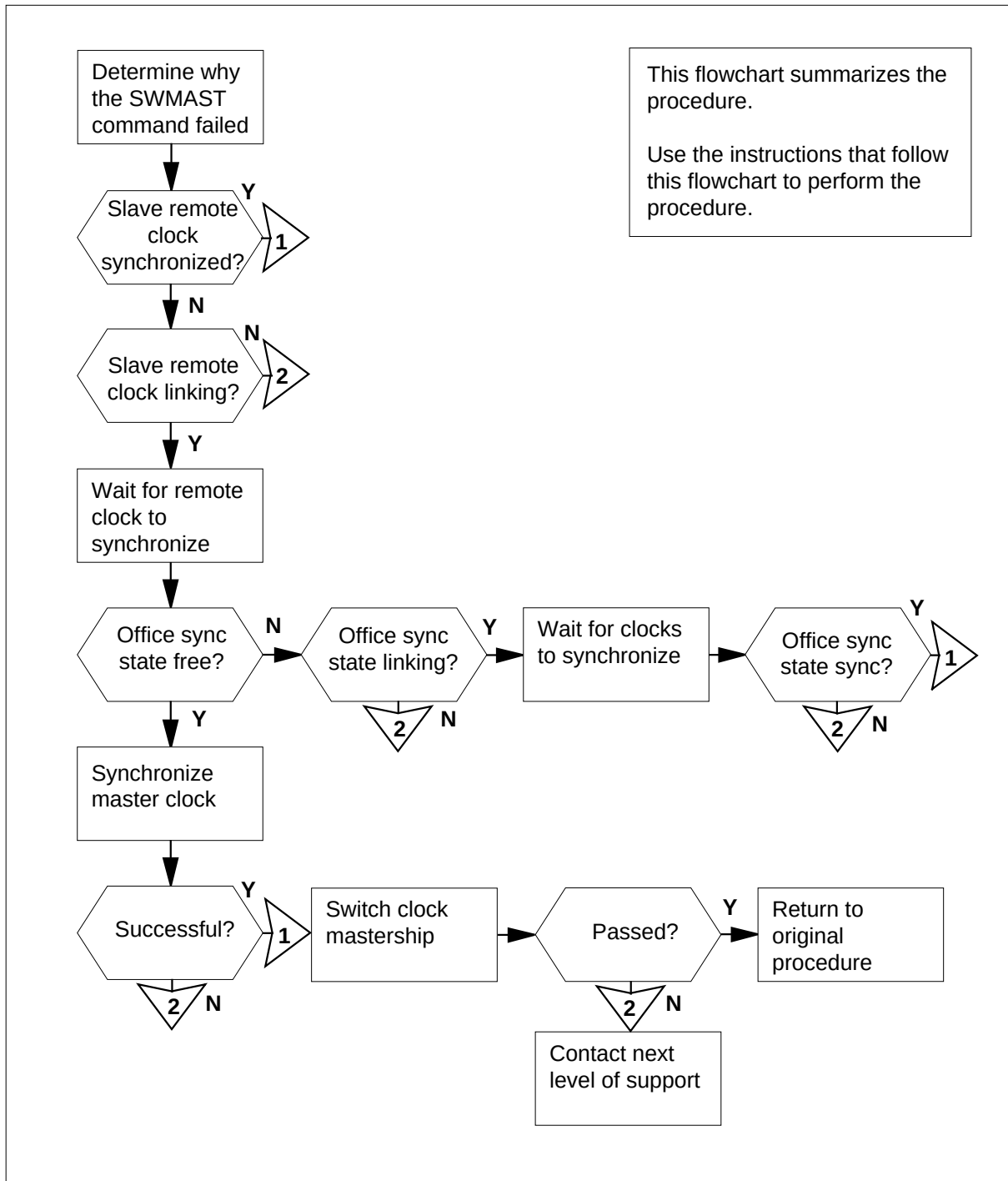
Use this procedure to clear a failure to switch clock mastership.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Failure to switch clock mastership (continued)

Summary of Failure to switch clock mastership



Failure to switch clock mastership (continued)

Failure to switch clock mastership alarm



DANGER

Possible equipment damage or loss of service

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

At the MAP display

- 1 Determine why the switch of mastership failed.

If the response	Do
is SWMAST not allowed, slave MS not remote SYNCed	step 2
is SWMAST not allowed, slave MS has serious clock faults	step 22
is SWMAST not allowed, mate MS is OOS	step 23
is other than listed here	step 24

- 2 To access the MS level of the MAPdisplay, type

>MAPCI;MTC;MS

and press the Enter key.

Example of a MAP display:

Message Switch	Clock	Shelf 0	Inter-MS Link 0	1
MS 0	.	M Free	.	.
MS 1	.	Slave	.	.

- 3 Determine the MS that is the slave MS.

Note: In the example in step 2, the slave MS is MS 1.

- 4 To access the Clock level of the MAP display, type

>CLOCK

and press the Enter key.

Example of a MAP display:

Failure to switch clock mastership (continued)

```
Card 02 Alm Int %Adj Src Rem %Adj Src | Car Stat Sp PM CCT
MS 0 . . Syn +00.7 Rm0 Fr +03.1 Lk0 | Lk0 Lck 0 DTC 002 02
MS 1 . . Syn +01.3 In0 Syn -02.7 In0 | Lk0 Smp 0 DTC 001 02
Links slipping: 4 out of 10276
```

- 5 Determine the state of the slave remote clock.

Note: The state of the slave remote clock appears on the right of the slave MS under the Rem header. In the example in step 4, the state of the slave remote clock is Syn.

If the state of the slave remote clock	Do
is Fr	step 6
is LKg	step 8
is Syn	step 21

- 6 To perform an in-service test on the clock card of the slave message switch (MS), type

>TST ms_number

and press the Enter key.

where

ms_number

is the number of the slave MS (0 or 1)

If the TST command	Do
passed, or passed with Istb	step 7
failed	step 23

- 7 Determine the state of the slave remote clock.

If the state of the slave remote clock	Do
is LKg	step 8
is Fr	step 10
is Syn	step 21

- 8 Wait until the slave remote clock stops linking and synchronizes. Continue the procedure.

Note: Allow up to 30 min for the slave remote clock to synchronize.

Failure to switch clock mastership (continued)

- 9 Determine if the CM is in sync.

If the state of the slave remote clock	Do
is Fr	step 10
is Syn	step 21
is LKng	step 24

- 10 To determine the office sync state of the clocks, type

>QUERYCK

and press the Enter key.

Note: The office sync state appears on the right of the Office SYNC state header.

Example of a MAP response:

```
Office SYNC state = LKng
Clock type = Stratum 2.5
Office configuration = Master External Office
External Frequency = f10000
External Select = Analog
External Termination = 50ohm
External Alarm = Minor
Master Clock = MS0
Remote Clock Configuration = reference
MS0 Clock Alarms: REM EXT
MS1 Clock Alarms: none ...
```

If the office sync state	Do
is Free	step 11
is LKng	step 15
is Sync	step 21

- 11 To start the synchronization of the master clock, type

>SYNC

and press the Enter key.

Example of a MAP response:

Failure to switch clock mastership (continued)

Request to TEST INSV MS: 0 Shelf:0 Card:2 submitted.
 Request to TEST INSV MS: 0 Shelf:0 Card:2 passed.
 Request to TEST INSV MS: 1 Shelf:0 Card:2 submitted.
 Request to TEST INSV MS: 1 Shelf:0 Card:2 passed.
 Request to Synchronize clock 0: submitted.
 Request to Synchronize clock 0: passed.
 Clock synchronization started ...

If the in-service test	Do
passed, and the response is Clock synchronization started ...	step 13
passed with Istb, the system generated a card list, and the response is Clock synchronization started ...	step 13
passed or passed with Istb, the response is Request to Synchronize Clock 0: failed, and the system returns an error response	step 17
passed, and the responses are Warning: Master clock has a faulty remote and Clock synchronization started ...	step 12
failed, the response is Request to Synchronize Clock 0: failed, and the system returns an error response	step 17
failed, and the system generated a card list	step 24

- 12** To determine if the Rem alarm is present, type

>QUERYCK

and press the Enter key.

Note: A Rem alarm appears on the right of the MS0 or MS1 Clock Alarms field.

Example of a MAP response:

Failure to switch clock mastership (continued)

```
Office SYNC state = LKng
Clock type = Stratum 2.5
Office configuration = Master External Office
External Frequency = f10000
External Select = Analog
External Termination = 50ohm
External Alarm = Minor
Master Clock = MS0
Remote Clock Configuration = reference
MS0 Clock Alarms: none
MS1 Clock Alarms: Rem ...
```

If the Rem alarm	Do
is present	step 24
is not present	step 14

- 13** To access the clock status information, type

>QUERYCK

and press the Enter key.

Example of a MAP response:

```
Office SYNC state = LKng
Clock type = Stratum 2.5
Office configuration = Master External Office
External Frequency = f10000
External Select = Analog
External Termination = 50ohm
External Alarm = Minor
Master Clock = MS0
Remote Clock Configuration = reference
MS0 Clock Alarms: none
MS1 Clock Alarms: Rem ...
```

- 14** Determine the office sync state of the clocks.

If the office sync state	Do
is LKng	step 15
is Sync	step 21
is Free	step 24

- 15** Wait for the clock to synchronize with the timing source. Continue the procedure.

Note: Allow up to 2h for the clock to synchronize with the timing source.

Failure to switch clock mastership (continued)

- 16** To determine if the clocks synchronize, type

>QUERYCK

and press the Enter key.

If the office sync state	Do
is Sync	step 21
is LKng or Free	step 24

- 17** Your next step depends on the error response that the system returned.

If the response	Do
is Currently no master clock. Re-attempt command in 10 seconds	step 18
is Clock is already syncing	step 19
is Clock must be Free running in Master-Internal Offices	step 24
is Data mismatch between the CM and MS 0/1	step 24
is Master clock has no remote reference	step 24
is Carriers are not inservice	step 24
is No external reference link available	step 24
is Master stratum1 alarm 0/1 present and SYNCLK table EXTALARM MAJOR	step 24

- 18** Wait 10s and continue the procedure.

Go to step 11.

- 19** Wait for the clock to synchronize with the timing source. Continue the procedure.

Note: Allow up to 2 h for the clock to synchronize with the timing source.

- 20** To determine if the clocks synchronized, type

>QUERYCK

and press the Enter key.

If the office sync state	Do
is Sync	step 21

Failure to switch clock mastership (end)

	If the office sync state	Do
	is LKng or Free	step 24
21	To switch clock mastership, type >SWMAST and press the Enter key. <i>Example of a MAP response:</i> Request to Switch Clock Mastership MS: 0 submitted. Request to Switch Clock Mastership MS: 0 passed.	
	If the SWMAST command	Do
	passed	step 25
	failed	step 24
22	Perform the procedure <i>Clearing an MS CLOCK major alarm</i> in this document.	
23	Perform the procedure <i>Clearing an MS SysB major alarm</i> in this document.	
24	For additional help, contact the next level of support.	
25	Return to the maintenance procedure that sent you to this procedure. Continue as directed.	

Loading a PM

Application

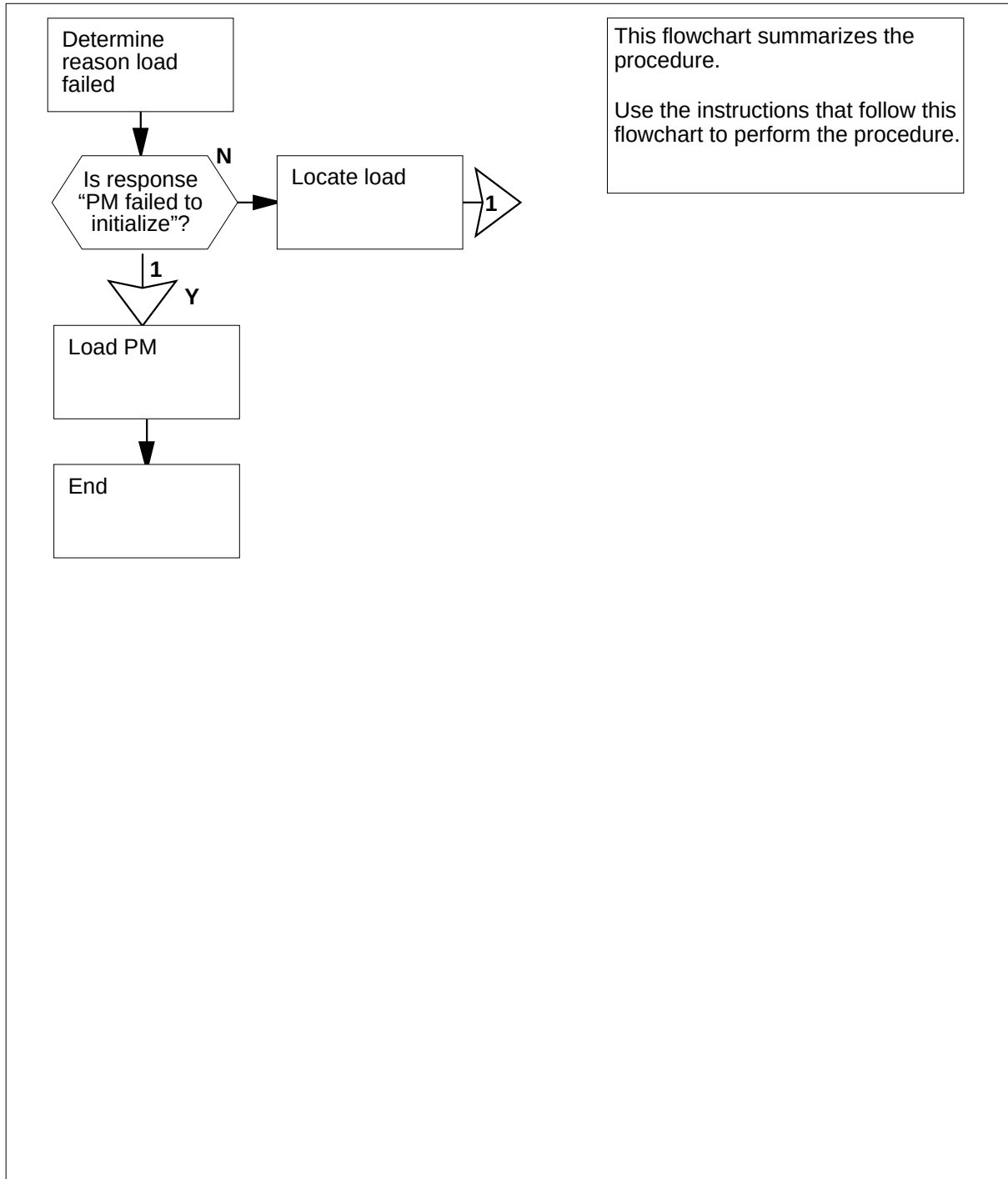
Use this procedure to load a PM after a failure of the command LOADPM.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Loading a PM (continued)

Summary of Loading a PM



Loading a PM (continued)

Loading a PM

At your current location

1



CAUTION

Possible loss of service

Perform this procedure during periods of low traffic to avoid loss of service or service degradation.

Proceed only if a step in a maintenance procedure directed to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

2

Follow the correct procedure according to the reason that the load attempt failed.

If the load failed and	Do
the MAP response is Load File not in directory	step 7
the MAP response is PM Failed to Initialize	step 3
the system generates a card list	step 4
the MAP response is other than listed here	step 32

3

Go to step 25 to apply the LOADPM command again.

4

Record the location, description, slot number, product engineering code (PEC) and PEC suffix of the cards on the list.

5

Perform the correct procedure in *Card Replacement Procedures* to change the first card on the list. Complete the procedure and return to this point.

6

Go to step 25.

7

Determine from office records the type of device that contains the PM load files.

If the load files	Do
are on tape	step 8
are on IOC disk	step 15
are on SLM disk	step 20

Loading a PM (continued)

- 8 Locate the tape that contains the PM load files.

At the MTD

- 9 Mount the tape on a magnetic tape drive.

At the MAP display

- 10 To mount the tape, type

>MOUNT tape_no

and press the Enter key.

where

tape_no

is the number of the tape drive that contains the PM load files

Example input:

>MOUNT 1

- 11 To list the contents of the tape in the user directory, type

>LIST Ttape_no

and press the Enter key.

where

tape_no

is the number of the tape drive

Example input:

>LIST T1

- 12 To demount the tape, type

>DEMOUNT Ttape_no

and press the Enter key.

where

tape_no

is the number of the tape drive

Example input:

>DEMOUNT T1

At the MTD

- 13 Remove the tape from the magnetic tape drive.

At the MAP

- 14 Go to step 25.

- 15 Determine from office records the input/output controller (IOC) disk and volume number that contains the PM load files.

- 16 To access the disk utility level, type

>DISKUT

Loading a PM (continued)

and press the Enter key.

Note: The command DISKUT applies to a SuperNode front end. For an NT40 front end, the command is DSKUT.

- 17** To confirm that the PM load files that you recorded in step 7 are in your user directory, type

>LISTFL file_name

and press the Enter key.

Note: The command LISTFL file_name applies to a SuperNode front end. For an NT40 front end, the command is LISTVOL vol_name.

where

file_name

is the name of the volume that contains the PM load files

- 18** To exit the disk utility, type

>QUIT

and press the Enter key.

- 19** Go to step 24.

- 20** Determine from office records the system load module (SLM) disk and volume number that contains the PM load files.

- 21** To access the disk utility level, type

>DISKUT

and press the Enter key.

- 22** To confirm that the PM load files that you recorded in step 7 are in your user directory, type

>LISTFL file_name

and press the Enter key.

where

file_name

is the name of the volume that contains the PM load files

- 23** To exit the disk utility, type

>QUIT

and press the Enter key.

- 24** Determine if the device specified for the PM load files matches the office records.

If the device name	Do
is not correct	step 32
is correct	step 25

Loading a PM (continued)

- 25 The next step depends on the item that you load.

If you	Do
load a single-unit PM or a DCH card	step 26
load a dual-unit PM	step 27
load a CMR card	step 28
load an STC card	step 29

- 26 To load the PM, type
>LOADPM
and press the Enter key.

If the LOADPM command	Do
passed	step 33
failed, and the reason is different from the first time LOADPM failed	step 2
failed, and you did not replace all the cards in the list in step 4	step 30
failed, and you replaced all the cards in the list in step 4	step 32
failed, but the reason is the same as the first time LOADPM failed	step 32

- 27 To load the PM unit, type
>LOADPM UNIT unit_no
and press the Enter key.
where
unit_no
is the number of the unit (0 or 1)

If the LOADPM command	Do
passed	step 33
failed, and the reason is different from the first time LOADPM failed	step 2

Loading a PM (continued)

	If the LOADPM command	Do
	failed, and you did not replace all the cards in the list in step 4	step 30
	failed, and you replaced all the cards in the list in step 4	step 32
	failed, but the reason is the same as the first time LOADPM failed	step32
28	To load the CMR card, type >LOADPM UNIT unit_no CMR and press the Enter key. <i>where</i> unit_no is the number of the unit (0 or 1) that contains the CMR card to load	
	If the LOADPM command	Do
	passed	step 33
	failed, and the reason is different from the first time LOADPM failed	step 2
	failed, and you did not replace all the cards in the list in step 4	step 30
	failed, and you replaced all the cards in the list in step 4	step 32
	failed, but the reason is the same as the first time LOADPM failed	step32
29	To load the STC, type >STCLOAD UNIT unit_no A stc_loadname and press the Enter key. <i>where</i> unit_no is the number of the MSB unit (0 or 1) stc_loadname is the name of the STC load from office records	
	If the LOADPM command	Do
	passed	step 33

Loading a PM (end)

	If the LOADPM command	Do
	failed, and the reason is different from the first time LOADPM failed	step 2
	failed, and you did not replace all the cards in the list in step 4	step 30
	failed, and you replaced all the cards in the list in step 4	step 32
	failed, but the reason is the same as the first time LOADPM failed	step 32
30	Replace the next card on the list that the system generated in step 4. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
31	Go to step 25.	
32	For additional help, contact the next level of support.	
33	The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.	

Monitoring system maintenance PM

Application

Use this procedure to monitor system recovery actions on a peripheral module (PM).

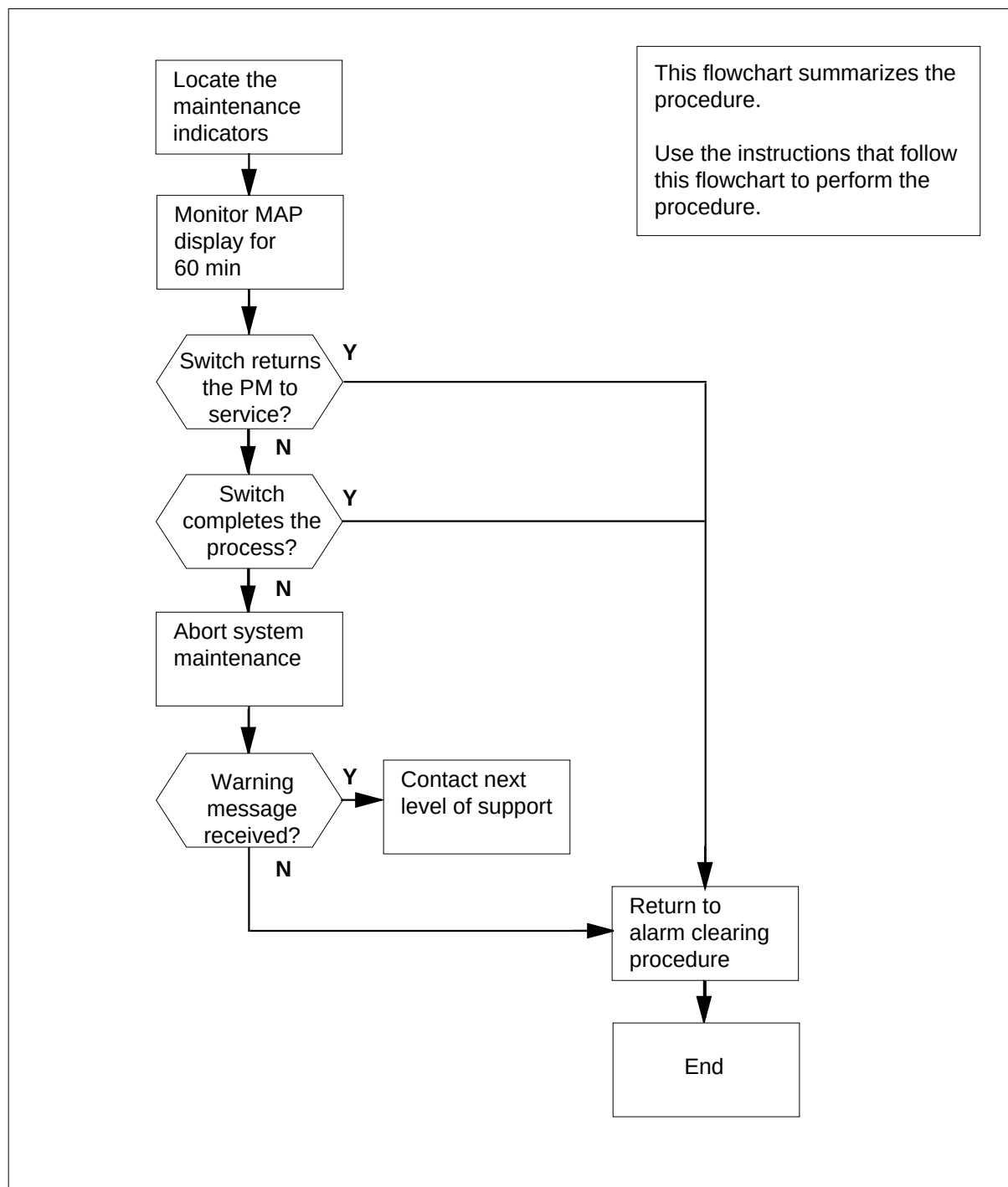
Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Monitoring system maintenance

PM (continued)

Summary of Monitoring system maintenance in a PM



Monitoring system maintenance PM (continued)

Monitoring system maintenance in a PM

At the PM level of the MAP display

1

ATTENTION

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately equipment damage or a loss of service can occur.

Locate the system maintenance indicators. These indicators appear on the right of the maintenance flag (Mtce) in the MAP display for the posted PM.

Example of a MAP display:

```
LTC      0          SysB Links_00S: CSide 20, PSide 0
Unit0:    Act       SysB      Mtce ROM/RAM Query
Unit1:    Inact     SysB      Mtce ROM/RAM Query
```

The system maintenance indicators identify the steps the switch performed as part of the automatic recovery process. In the previous example, ROM/RAM Query is the system maintenance indicator.

The following is a list of some of the system maintenance indicators and the time the switch requires to complete each step.

System maintenance indicators (Sheet 1 of 2)

Step	Completion time
ROM/RAM Query	a maximum of 1 min
System Recovery	varies, depending on the type of PM and the size of the load
/Reset	15 to 20 seconds
/Status	2 s to 1 min
ROM/RAM Query	a maximum of 1 min
NonDestr ROMtst	1 to 10 min
/Loading:	varies, depending on the PM type, load size, and available resources

Monitoring system maintenance

PM (continued)

System maintenance indicators (Sheet 2 of 2)

Step	Completion time
/RUN	a maximum of 5 s
Initializing	1 to 2.5 min
/Clear Data	a max of 30 s
/Static Data	from 30 s to several minutes
Loading:Execs	varies, depending on PM type, load size, and available resources
Checksum	5 to 10 s
Note: The automatic recovery process can skip or repeat steps, depending on the type of PM.	

- 2 Monitor the MAP display for 60 min while the switch attempts to recover the PM automatically.

If the switch	Do
does not complete the automatic recovery process in 60 min	step 3
completes the automatic recovery process, but the PM does not return to service	step 8
returns the PM to service	step 8

- 3



WARNING

Possible loss of service

If you abort system maintenance, you can affect maintenance on other PMs. If you abort system maintenance, you can lengthen service interruption or damage equipment.

To abort system maintenance, type

>ABTK

and press the Enter key.

The MAP display can respond with the following message.

Example of a MAP response:

Monitoring system maintenance

PM (end)

ABORTING SYSTEM MAINTENANCE ON THIS PM WILL AFFECT
MAINTENANCE ON THE OTHER PMS.
PLEASE CONFIRM ("YES", "Y", "NO", or "N"):

	If you	Do
	receive this message	step 4
	do not receive this message	step 8
4	Do not respond to the message. Contact the next level of maintenance before you continue this procedure. The switch loads a group of PMs. If you abort system maintenance, you can damage these PMs.	
	If you	Do
	cannot proceed	step 5
	can proceed	step 7
5	To cancel the ABTK command, type >NO and press the Enter key.	
6	Follow the instructions from the next level of maintenance. The instructions include how to clear the alarm that led you to this procedure. Go to step 9.	
7	To abort the system maintenance, type >YES and press the Enter key.	
8	Return to the step that led you to this procedure to clear the alarm.	
9	The procedure is complete.	

Moving an XSG to a spare XLIU

Application

Use this procedure when an X.25/X.75 link interface unit (XLIU) is out of service. When the XLIU is OOS, you must switch the X.25 service group (XSG) to a spare XLIU.

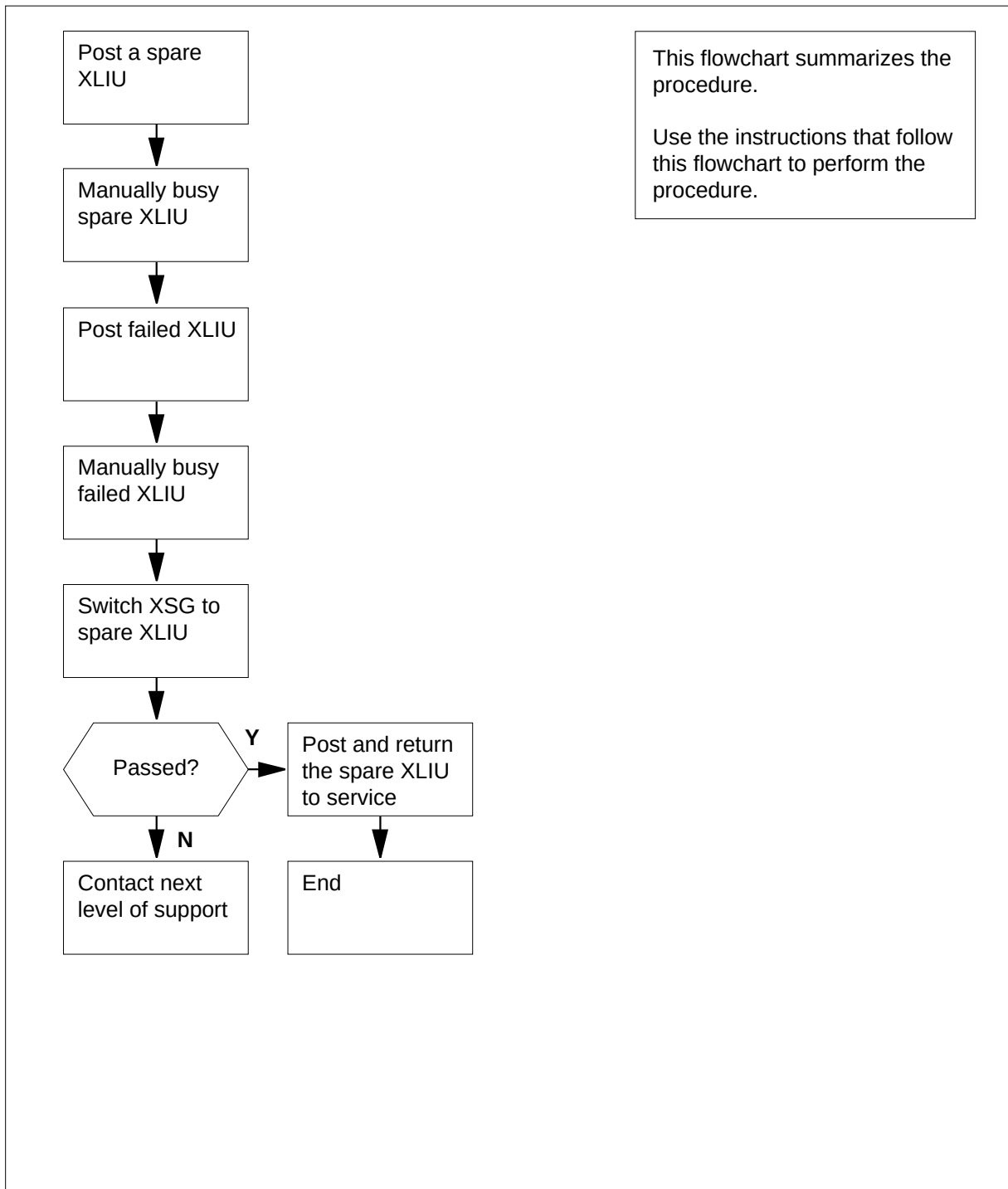
Note: The following restrictions apply:

- the XLIU must be a spare
- both the active XLIU and the spare XLIU must be on the same shelf
- a BCS by the next day process (ONP) application or a dump and restore cannot be in progress when you use the SWITCH command

Outage time is 3 min 50 s.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Moving an XSG to a spare XLIU (continued)**Summary of Moving an XSG to a spare XLIU**

Moving an XSG to a spare XLIU (continued)

Moving an XSG to a spare XLIU

At the MAP location:

- 1 Determine from office records or from operating company personnel the XLIU numbers of the out-of-service XLIU and a spare XLIU.

Note: The spare XLIU must be on the same shelf as the out-of-service XLIU.

- 2 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP display:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	7	0	0	0	10	87

- 3 To post a spare XLIU, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no

is the number of the spare XLIU that you obtained at step 1

Example of a MAP display:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	7	26	34	0	10	27
XLIU	1	0	0	0	4	32

XLIU	132	InSv	Spre

If the spare XLIU	Do
is InSv or ISTb	step 5
is other than listed here	step 4

- 4 You must move the XSG to a spare XLIU that is in service (can handle traffic). Go to step 18.

- 5 To manually busy the spare XLIU that uses the NOWAIT option, type

>BSY NOWAIT

and press the Enter key.

Example of a MAP response:

XLIU 132 BSY Passed

Moving an XSG to a spare XLIU (continued)

- 6 To test the spare XLIU, type

>TST

and press the Enter key.

Example of a MAP response

XLIU 132 TST Passed

If the TST command	Do
passed	step 9
failed	step 7

- 7 To reset the XLIU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 9
failed	step 8

- 8 To load the XLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 9
failed	step 18

- 9 To post an out-of-service provisioned XLIU that has an assigned XSG, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no

is the number of the active XLIU

Example of a MAP display:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	7	26	34	0	10	27
XLIU	1	0	0	0	4	32
XLIU 131	SysB	Rsvd				

Moving an XSG to a spare XLIU (continued)

- 10 Manually force bsy the XLIU by typing

>BSY FORCE

and press the Enter key.

Example of a MAP response:

Busying XLIU 131 will take XSG channels out of service. Please confirm ("YES", "Y", "NO", or "N"):

If the response is	Do
Busying the XLIU will take XSG channels out of service. Please confirm ("YES", "Y", "NO", or "N");	Step13
Warning: XLIU 131 is currently being imaged. The BSY command will be aborted unless the FORCE option is used.	step 11

- 11 Continue

If	Do
proceed with BSY FORCE request	step 12
abort BSY FORCE request	step 19

- 12 Force bsy the XLIU by typing

>YES

and pressing the Enter key.

Example of a MAP response:

Imaging will be aborted on XLIU 131.

- 13 Proceed

If you are	Do
asked to confirm the command	step 14
not asked to confirm the command	step 15

- 14 To confirm the command, type

>YES

Moving an XSG to a spare XLIU (end)

and press the Enter key.

- 15** To switch the service from the provisioned XLIU to the spare XLIU, type

>SWITCH xliu_no

and press the Enter key.

where

xliu_no

is the number of the spare XLIU

Example of a MAP response:

Takeover passed XLIU 131 to XLIU 132 XSG 5

If the SWITCH command	Do
passed	step 16
failed	step 18

- 16** To post the XLIU that assigns XSG, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no

is the number of the XLIU to which you switched activity at step 15

- 17** To return the XLIU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 20
failed	step 18

- 18** For additional help, contact the next level of support.

- 19** Abort the BSY FORCE request by typing

>NO

and pressing the Enter key. BSY request has been aborted, node imaging is continuing.

- 20** The procedure is complete.

Resetting a volume

Application

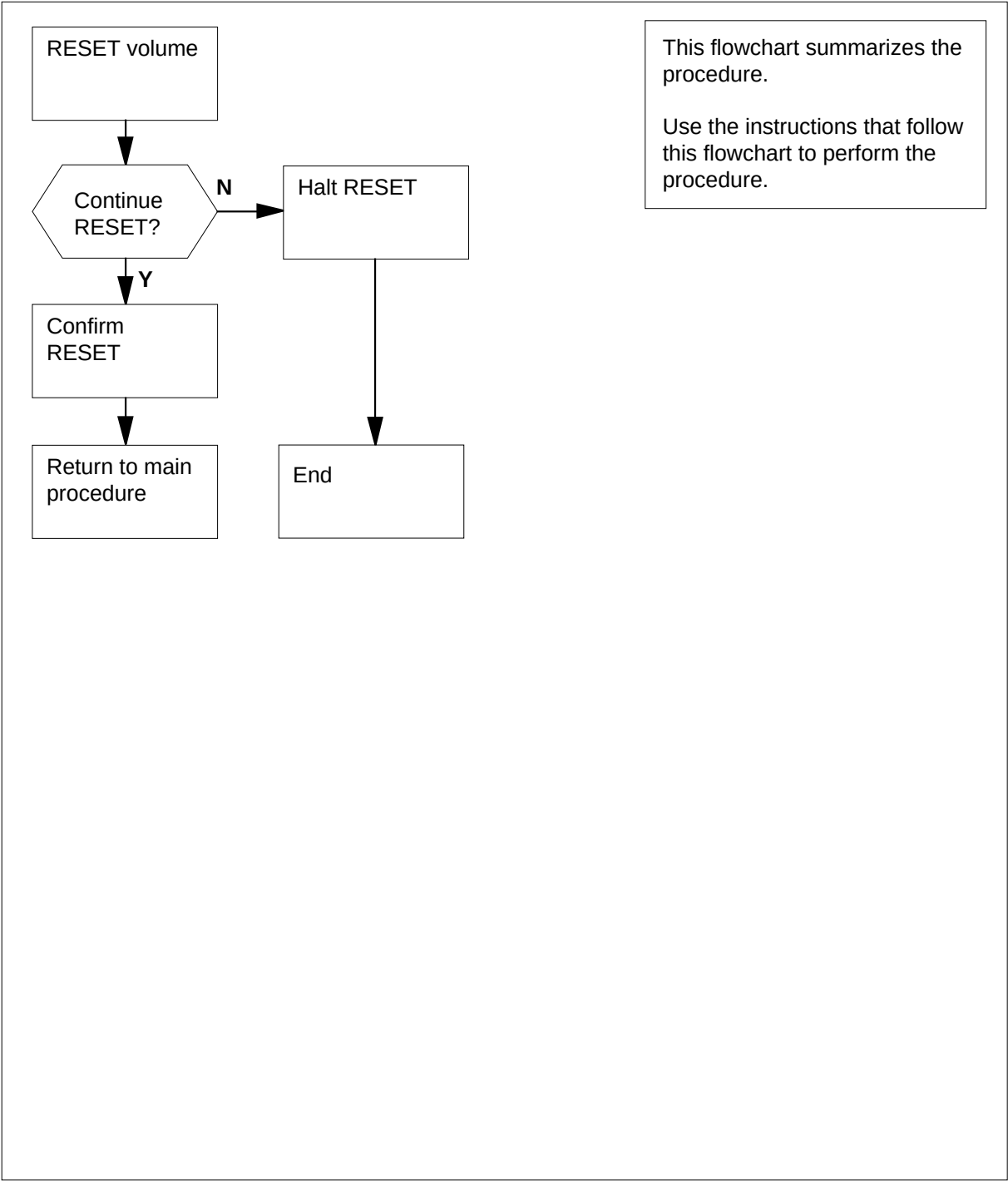
Use this procedure to reset a volume.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Resetting a volume (continued)

Summary of Resetting a volume



Resetting a volume (continued)

Resetting a volume



DANGER

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

At the MAP terminal

- 1 To reset the affected volume, type
>RSETVOL pool_no vol_no
 and press the Enter key.

where

pool_no
 is the pool number (nn1)

vol_no
 is the volume number (nn2)

Example of a MAP response:

FILE SYSTEM ERRORS HAVE OCCURRED ON THIS VOLUME WHICH MAY AFFECT ITS ABILITY TO RECORD DATA ON THE VOLUME. THE CAUSE OF THESE ERRORS SHOULD BE INVESTIGATED AND ALL PROBLEMS SHOULD BE RESOLVED BEFORE RESETTING THIS VOLUME. PLEASE CONFIRM ("YES" OR "NO")

- 2 Determine if you want to continue to reset the volume.

If you	Do
want to continue	step 5
do not want to continue	step 3

- 3 To halt the reset, type
>NO
 and press the Enter key.
- 4 You do not complete this alarm clearing procedure. Go to the next procedure.
- 5 To confirm the reset, type
>YES
 and press the Enter key.

Example of a MAP display:

Resetting a volume (end)

```
REGULAR ssys VOLUME WILL BE MARKED AS "READY"  
vol_name:  VOLUME nn IN REGULAR POOL n, pool_name  
DONE - AUDITING AFFECTED VOLUME/SUBSYSTEM(S)
```

- 6 The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

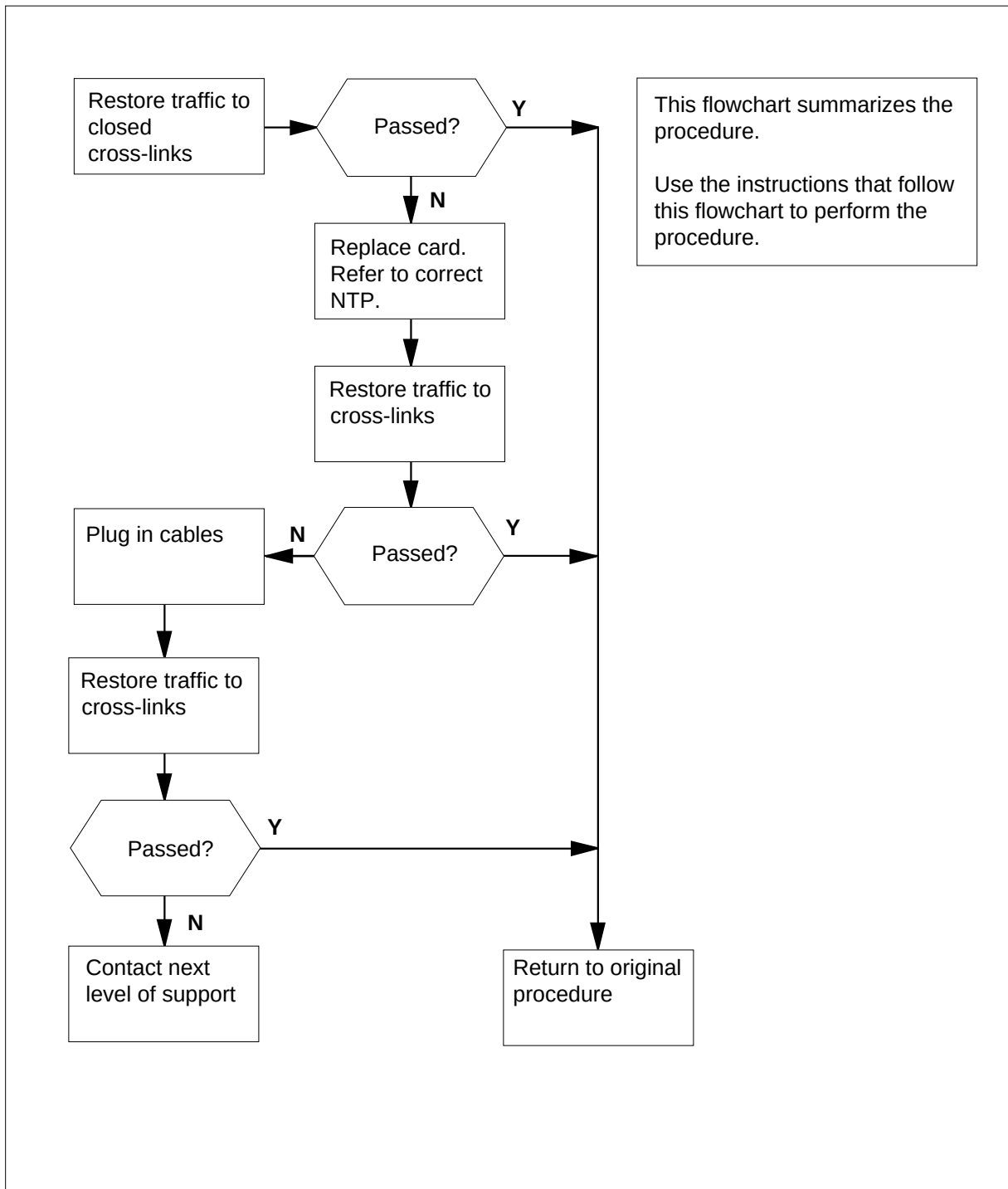
Restoring LIM unit cross-links

Application

Use the following procedure to restore link interface module (LIM) unit cross-links.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Restoring LIM unit cross-links (continued)**Summary of Restoring LIM unit cross-links**

Restoring LIM unit cross-links (continued)

Restoring LIM unit cross-links

At the MAP terminal

1



WARNING

Possible equipment damage or loss of service

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

To determine the state of the LIM unit cross-links, type

>TRNSL unit_no

and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1) on which you are working

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 - MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Open
LIM 1 UNIT 0 LINK 2 (9:2 - LIM 1:30:2) Closed
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 - MS 0:21:1) Open
LIM 1 UNIT 0 LINK 5 (10:1 - MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 - LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: Two cross-links are present between LIM units 0 and 1. These cross-links always have the assigned link numbers 2 and 6.

If	Do
all cross-links are Open	step 35
a cross-link is in a state other than Open	step 2
2	Record the link number of the cross-links that are not open.
	Note: The link number (2 or 6) is on the right of the word LINK on the MAP response. In the example in step 1, link 2 is the closed link.
3	To manually busy one of the closed cross-links, type
	>BSY LINK unit_no link_no
	and press the Enter key.
	where

Restoring LIM unit cross-links (continued)

unit_no
is the number of the LIM unit (0 or 1) where the cross-link is closed

link_no
is the number of the cross-link (2 or 6)

- 4 To return the closed cross-link that you busied in step 3 to service, type
- >RTS LINK unit_no link_no**
- and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) where the cross-link is closed

link_no
is the number of the cross-link (2 or 6)

Example input:

>RTS LINK 0 2

If the RTS command	Do
passed	step 28
failed, and the system generated a card list	step 5
failed, and the system did not generate a card list	step 29

- 5 Record the location, description, slot number, product engineering code (PEC), and the PEC suffix of the cards on the list.
- 6 Determine the state of the LIM unit you are working on.

If the state of the LIM unit	Do
is ManB	step 21
is Istb	step 7

- 7 To access the F-bus level of the MAP display, type
- >FBUS**
- and press the Enter key.

Example of a MAP display:

LIM 1 ISTb

	Links_00S	Taps_00S							
Unit0:	ISTb	.						19	
Unit1:	InSv	.						2	
	Tap:	0	4	8	12	16	20	24	28 32
FBus0:	ManB	BBBB	BBBB	BBBB	BBBB	----	----	----	---B BB--
FBus1:	InSv	...M.	I...S..	....	----	----	----	----	....

Restoring LIM unit cross-links (continued)

Note: In the example, B under a tap number means that the F-bus is manual busy or that the controlling LIM unit is system busy or manual busy, a dot (.) means that the tap is in service, M means that the tap is manual-busy, I means that the tap is in-service trouble, S means that the tap is system-busy tap, and a dash (-) means the tap is unequipped.

8



WARNING

Possible loss of service

Make sure that the mate F-bus and the taps for equipped and online nodes are in service. Perform this action before you manually busy the LIM unit that is in service trouble. Failure to proceed in this order can isolate application-specific units (ASU) on link interface shelves 1, 2, and 3.

Determine the state of the mate F-bus.

Note: The F-bus 1 is the mate if you work on F-bus LIM unit 0. The F-bus 0 is the mate F-bus if you work on LIM unit 1. The F-bus state appears on the right of the words FBus0 or FBus1 in the example MAP display in step 7.

If the state of the mate F-bus	Do
is InSv or ISTb	step 11
is other than listed here	step 9

9 Perform the procedure *Clearing a PM LIMF major alarm* in this document to return the mate F-bus to service. Complete the procedure and return to this point.

10 To access the F-bus level of the MAP display, type

>PM;POST LIM unit_no;FBUS

and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1)

11 Determine the state of the taps on the mate F-bus.

Note: The tap states appear in the two rows of characters under the numbers 0 to 35 (or 0 to 23). The tap states appear in the example MAP display in step 7.

If the taps on the mate F-bus	Do
are in service (.) or in-service trouble (I)	step 14

Restoring LIM unit cross-links (continued)

	If the taps on the mate F-bus	Do
	are manually busy (M) or system busy (S)	step 12
12	Perform the correct alarm clearing procedure in this document to return the taps to service. Complete the procedure and return to this point.	
13	To access the F-bus level of the MAP display, type >PM;POST LIM unit_no;FBUS and press the Enter key. <i>where</i> unit_no is the number of the LIM unit (0 or 1) in use	
14		



WARNING
Loss of service
Manually busy the F-bus for the in-service trouble LIM unit before you manually busy the LIM unit. Failure to proceed in this order causes a loss of messaging for all ASUs in the link peripheral processor (LPP) or enhanced LPP (ELPP) that carry traffic.

To manually busy the F-bus for the LIM unit, type
>BSY FBUS fbus_no
and press the Enter key.
where
fbus_no
is the number of the F-bus (0 or 1)

If the response	Do
is LIM x FBus y Busy initiated. LIM x FBus y Busy passed.	step 16

Restoring LIM unit cross-links (continued)

	If the response	Do
	is LIM x FBus y Busy requText>ires confirmation because the following NIUs may be active on this bus... NIU xx unit 0 NIU xx unit 1 Please confirm ("YES", "Y", "NO", or "N"):	step 15
15	To confirm the command, type >YES and press the Enter key. <i>Example of a MAP display:</i> <pre> Tap: 0 4 8 12 16 20 24 28 32 FBus0: ManB BBBB BBBB BBBB BBBB ---- ---- ---- ---B BB-- FBus1: InSv ---- ---- ---- </pre> LIM 1 FBus 0 Busy initiated. LIM 1 FBus 0 Busy passed. Note: In the example, F-bus 0 was manually busy.	
16	To force the LIM unit to busy, type >BSY UNIT unit_no FORCE and press the Enter key. <i>where</i> unit_no is the number of the LIM unit (0 or 1) <i>Example of a MAP response:</i>	

Restoring LIM unit cross-links (continued)

LIM 1 UNIT 0 Busy initiated.

If the response is	Do
LIM x UNIT y Busy requires confirmation because the action will abort the current imaging process on LIM x UNIT y. Do you wish to proceed? Please confirm ("YES", "Y", "NO", or "N"):	step 17
LIM n UNIT n Busy requires confirmation because the action may cause a SEVERE system OUTAGE by isolating other nodes. Please confirm ("YES", "Y", "NO", or "N"):	step 18
Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed? Please confirm ("YES", "Y", "NO", or "N"):	step 19

Restoring LIM unit cross-links (continued)

	If the response is	Do
	Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y and UNIT z. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed? Please confirm ("YES", "Y", "NO", or "N"):	step 20
	anything else	step 21
17	The LIM unit you are working on is imaging. Contact your next level of support to determine when it is safe to proceed. Continue with the rest of this procedure when instructed to do so.	
18	The mate LIM unit is not in service. Busing the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.	
19	The LIM unit you are working on is imaging. The mate unit is not in service. Busing the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.	
20	The LIM unit you are working on and the mate unit are imaging. The mate unit is not in service. Busing the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.	
21	Replace the NT9X17 card for this unit. Perform the correct card replacement procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
22	To load the LIM unit, type >LOADPM UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the LIM unit (0 or 1)	
	If the LOADPM command	Do
	passed	step 23

Restoring LIM unit cross-links (continued)

	If the LOADPM command	Do
	failed, and the system did not generate a card list	step 34
	failed, and the system generated a card list	step 24
23	To return the LIM unit to service, type >RTS UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the LIM unit (0 or 1) to return to service	
	If the RTS command	Do
	passed	step 27
	failed, and the system generated a card list	step 24
	failed, and the system did not generate a card list	step 29
24	Replace the NT9X23 card for this unit. Perform the correct card replacement procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
25	To load the LIM unit, type >LOADPM UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the LIM unit (0 or 1)	
	If the LOADPM command	Do
	passed	step 26
	is other than listed here	step 34
26	To return the LIM unit to service, type >RTS UNIT unit_no and press the Enter key. <i>where</i>	

Restoring LIM unit cross-links (continued)

unit_no

is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 27
failed, and the system generated a card list	step 34
failed, and the sytem did not generate a card list	step 29

- 27** To return the cross-link to service, type
>RTS LINK unit_no link_no
 and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1)

link_no

is the number of the cross-link (2 or 6)

Example input:

>RTS LINK 0 2

If the RTS command	Do
passed	step 28
is other than listed here	step 29

- 28** To determine the state of the cross-links, type
>TRNSL unit_no
 and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1)

If	Do
all cross-links are Open	step 35
the cross-link you work on is Open and other cross-links are not Open	step 2
the cross-link you work on is not Open	step 29

Restoring LIM unit cross-links (continued)

At the LPP or ELPP

29 Example of an LPP MAP display:

```
LIM 1 ISTb
Links_00S  Taps_00S
Unit0:  ISTb      .      19
Unit1:  InSv      .      2
Tap:  0  4  8  12  16  20  24  28  32
FBus0: ManB      BBBB BBBB BBBB BBBB ---- ---- ---- ---B BB--
FBus1: InSv      ...M. I...S.. .... ---- ---- ---- ---.  ..--
```

Determine if the cross-link cables plug into the interface cards on both sides of the LMS shelf.

If the cables	Do
are plugged in	step 34
are not plugged in	step 30

30 Plug the cables back into the interface cards on both ends of the local message switch (LMS) shelf.

At the MAP display

31 To return the LIM unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 32
failed	step 34

32 To return the cross-link to service, type

>RTS LINK unit_no link_no

and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1)

link_no

is the number of the cross-link (2 or 6)

Restoring LIM unit cross-links (end)

Example input:

>RTS LINK 0 2

If the RTS command	Do
passed	step 33
is other than listed here	step 34

- 33 To determine the state of the cross-links, type
>TRNSL unit_no
and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

If	Do
all cross-links are Open	step 35
the cross-link you work on is Open and other cross-links are not Open	step 2
the cross-link you work on is not Open and you did not attempt to restore the cross-link on the mate LIM unit	step 2
any cross-links are in a state other than Open and you worked on both LIM units	step 34

- 34 For additional help, contact the next level of support.
- 35 The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Returning LIM-to-MS links to service

Application

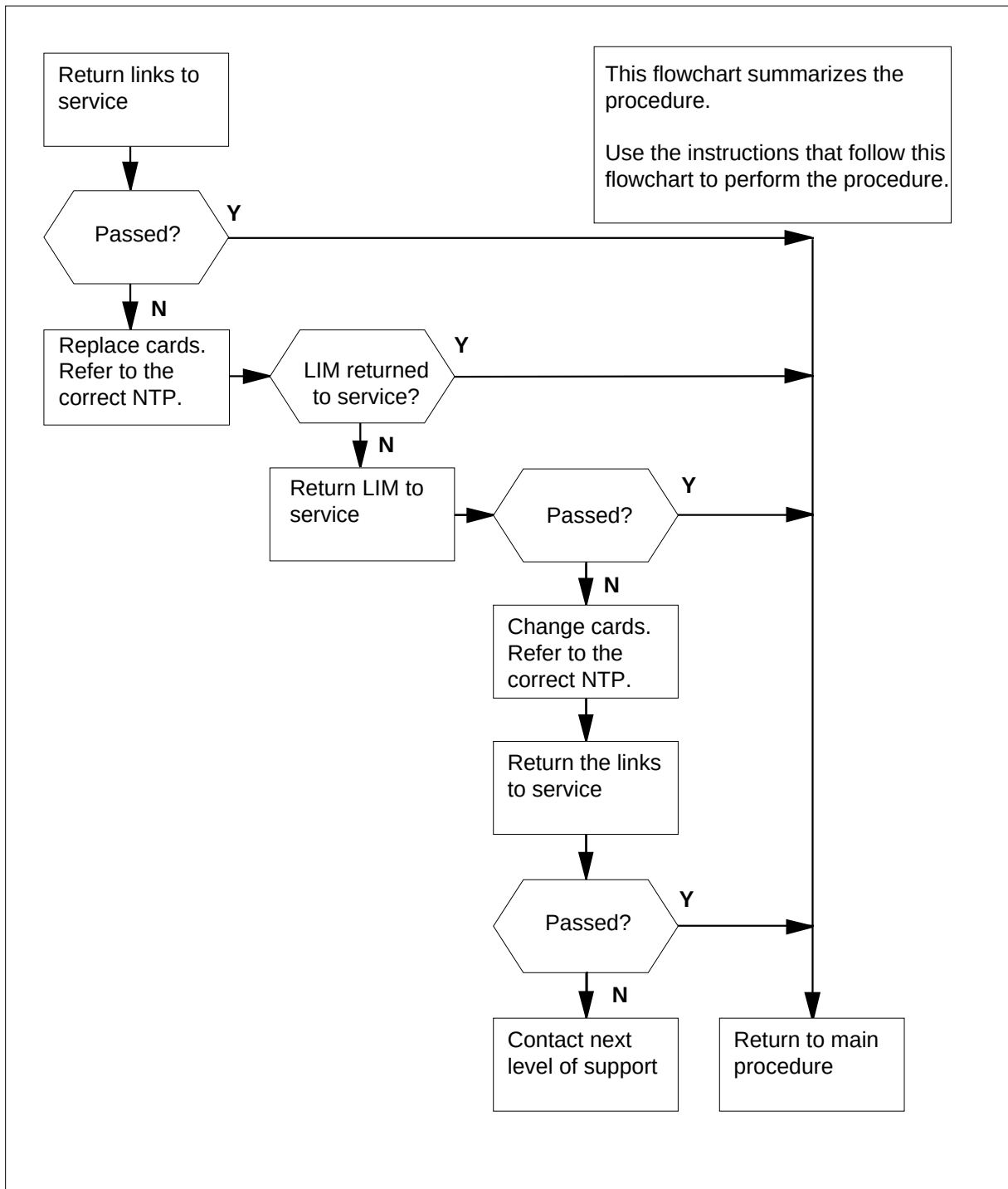
Use this procedure to return the links to service between the link interface module (LIM) to the message switch (MS) to service.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Returning LIM-to-MS links to service (continued)

Summary of Returning LIM-to-MS links to service



Returning LIM-to-MS links to service (continued)

Returning LIM-to-MS links to service



DANGER
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. Use of this procedure can cause equipment damage or loss of service.



WARNING
Delay in the return of equipment to service
If the system generates more than one card list, replace all cards on a short card list before you replace any cards on a full card list.

At the MAP display

- 1 To determine the state of the LIM unit cross-links, type
>TRNSL unit_no
and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 - MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Other end closed
LIM 1 UNIT 0 LINK 2 (9:2 - LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 - MS 0:21:1) Other end closed
LIM 1 UNIT 0 LINK 5 (10:1 - MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 - LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the previous example, links 0, 1, 4, and 5 go from the LIM to the MS.

- 2 Determine if any LIM-to-MS link has a status other than Open.

If	Do
all LIM-to-MS links are Open	step 73
any LIM-to-MS link is in any other state	step 3

Returning LIM-to-MS links to service (continued)

- 3 Record the MS number, card number, and port number of all LIM-to-MS links that have a status other than Open.

Note: The MS number, card number, and port number appear on the right of the word MS on the MAP example in step 1. In the example, link 1 (which is Other end closed). The MS number of link 1 is 0. The card number is 20. The port number is 0.

- 4 Select a link from the list recorded in step 3.

- 5 To access the Shelf 0 level of the MAP display, type

>MAPCI;MTC;MS;SHELF 0

and press the Enter key.

- 6 To post the card number for the link that you selected in step 4, type

>CARD card_no

and press the Enter key.

where

card_no

is the number of the card for the link that you selected in step 4

- 7 To make sure that one or more links from the LIM terminate on the MS card you posted, type

>TRNSL ms_no PORT port_no

and press the Enter key.

where

ms_no

is the number of the MS (0 or 1) for the link that you selected in step 4

port_no

is the number of the port (0 to 3) for the link that you selected in step 4

Example input:

>TRNSL 0 PORT 0

Example of a MAP response:

Site	Flr	RPos	Bay_id	Shf	Description	Slot	EqPEC
HOST	01	A00	DPCC 0	39	MS 0:0:10	16	9X17AA FRNT
HOST	01	A00	DPCC 0	39	MS 0:0:10	16	9X23BA BACK

Port 0=LIM 2 (OK :Opened)

Note: In the example response, Port 0=LIM 2 indicates that a link from LIM 2 terminates on port 0. In the second line of text, 0:0:10 indicates that card 10, on MS 0 shelf 0 is posted.

Returning LIM-to-MS links to service (continued)

8

**WARNING****Possible action that affects service**

Do not busy all of the ports for the MS. A loss of traffic can occur if you busy the last port for the MS to the LIM. A loss of traffic can also occur when you return the first port to service after you busy all the ports.

To manually busy the port for the link that you selected in step 4, type

>BSY ms_no PORT port_no

and press the Enter key.

where

ms_no

is the number of the MS (0 or 1) for the link that you selected in step 4

port_no

is the number of the port (0 to 3) for the link that you selected in step 4

Example of a MAP response:

Request to MAN BUSY MS:1 shelf:0 card:10 port:0 submitted
Request to MAN BUSY MS:1 shelf:0 card:10 port:0 passed

If the BSY command	Do
passed	step 9
failed	step 72

9

To test the port, type

>TST ms_number PORT port_number

and press the Enter key.

where

ms_number

is the number of the MS (0 or 1) that contains the affected card

port_number

is the number of the system busy port (0 to 127)

Example of a MAP response:

Request to TEST 00S MS:0 shelf:0 card:4 port 1 submitted.
Request to TEST 00S MS:0 shelf:0 card:4 port 1 passed.

If the TST command	Do
passed	step 25

Returning LIM-to-MS links to service (continued)

	If the TST command	Do
	passed with Istb , and the system generates a card list	step 10
	failed, and the system generates a card list	step 10
	other than listed here	step 72
10	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the first card on the list.	
11	To access the MS level of the MAP display, type >MS and press the Enter key.	
12	Determine the clocking configuration. Note: The clocking configuration appears under the Clock header of the MAP display.	
	If the MS that contains the card that you want to replace is	Do
	the slave MS, indicated by Slave under the Clock header	step 16
	the master MS, indicated by Master or M Free under the Clock header	step 13
13	To switch clock mastership, type >SWMAST and press the Enter key. <i>Example of a MAP response:</i> Request to Switch Clock Mastership MS: 0 submitted. Request to Switch Clock Mastership MS: 0 passed.	
	If the SWMAST command	Do
	passed	step 15
	failed	step 14
14	Perform the procedure <i>Failure to switch clock mastership</i> in this document. Complete the procedure and return to this point.	
15	Wait 10 min to make sure the MS is stable. Continue this procedure.	

Returning LIM-to-MS links to service (continued)

- 16** To manually busy the MS that contains the card that you want to replace, type
>BSY ms_number
 and press the Enter key.
where

ms_number

is the number of the MS (0 or 1) that contains the card that you want to replace

Example of a MAP response:

Request to MAN BUSY MS: 0 submitted.
 Request to MAN BUSY MS: 0 passed.

If the response is	Do
P-side nodes will be isolated-taken Out Of Service. BSY Aborted.	step 72
Remaining links to P-side nodes are unstable.	step 72
Request to MAN BUSY MS:0 passed	step 17
Request to MAN BUSY MS:1 passed	step 17
Request to MAN BUSY MS:0 failed	step 72
Request to MAN BUSY MS:1 failed	step 72
other than listed here	step 72

- 17** To replace the card, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 18** To perform an out-of-service test on the manually busy MS, type

>TST ms_number

and press the Enter key.

where

ms_number

is the number of the manual busy MS (0 or 1)

If the TST command	Do
passed	step 22
passed with Istb, and the system generates a card list	step 19
passed with Istb, and you replaced all the cards on the list	step 72

Returning LIM-to-MS links to service (continued)

	If the TST command	Do
	failed, and you replaced all the cards on the list	step 72
	failed, and the system generates a card list	step 20
	other than listed here	step 72
19	Record the location, description, slot number, PEC, and PEC suffix of the next card on the list. Go to step 17.	
20	Determine if you replaced all the cards on the list.	
	If you	Do
	replaced all the cards on the list	step 72
	did not replace all the cards on the list	step 21
21	Record the location, description, slot number, PEC, and PEC suffix of the first card listed that you did not replace. Go to step 17.	
22	To return the manual busy MS to service, type >RTS ms_number and press the Enter key. <i>where</i> ms_number is the number of the manual busy MS (0 or 1) <i>Example of a MAP response:</i> Request to RTS MS: 0 submitted. Request to RTS MS: 0 passed.	
	If the RTS command	Do
	passed	step 23
	failed	step 72
23	To access the Shelf level of the MAP, type >SHELF and press the Enter key. <i>Example of a MAP Display:</i>	

Returning LIM-to-MS links to service (continued)

```
Shelf 0                      1 1 1 1
Card   1 2 3 4 5 6 7 8 9 0 1 2 3
Chain
MS 0   . . . M . . . . . . . .
MS 1   . . . . . . . . . . . .
```

- 24 To post the card number for the link that you selected in step 4, type
>CARD card_number
and press the Enter key.

where
card_number
is the number of the affected card (6 to 25)

Example of a MAP response:

```
Card 04 CMIC Interface Card Port: 0 1
MS 0                      I          . M
MS 1                      I          . .
```

- 25 To return the port to service, type
>RTS ms_number PORT port_number
and press the Enter key.

where
ms_number
is the number of the MS (0 or 1) for the link that you selected in step 4
port_number
is the number of the port (0 to 3) for the link that you selected in step 4

Example of a MAP response:

```
Request to RTS MS:1 shelf:0 card:10 port:0 submitted
Request to RTS MS:1 shelf:0 card:10 port:0 passed
```

If the RTS command	Do
passed, and you worked on all MS ports that you recorded in step 3	step 26
passed, and you did not work on all MS ports that you recorded in step 3	step 4
failed, and you worked on all MS ports that you recorded in step 3	step 26

Returning LIM-to-MS links to service (continued)

	If the RTS command	Do
	failed, and you did not work on all MS ports that you recorded in step 3	step 4
26	Determine if you returned all MS ports to service that you recorded in step 3.	
	If you	Do
	returned all MS ports to service	step 27
	did not return all MS ports to service	step 72
27	To access the PM level of the MAP display, type >PM	
	and press the Enter key.	
28	To post the LIM that lost links to the MS, type >POST LIM lim_no	
	and press the Enter key.	
	where lim_no is the number of the LIM (0 to 16) that lost links to the MS	
	Example of a MAP Display:	
	LIM 1 ISTb	
	Unit0: ISTb	Links_00S 2. Taps_00S 0
	Unit1: InSv	. 0
29	Determine the state of the LIM unit that you worked on when you started this procedure.	
	If the state of the LIM unit is	Do
	ISTb	step 32
	ManB	step 30
30	To determine if the links between the LIM unit and the MS are open, type >TRNSL unit_no	
	and press the Enter key.	
	where unit_no is the number of the LIM unit (0 or 1) you are working on	

Returning LIM-to-MS links to service (continued)

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 - MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Open
LIM 1 UNIT 0 LINK 2 (9:2 - LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 - MS 0:21:1) Open
LIM 1 UNIT 0 LINK 5 (10:1 - MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 - LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the previous example, links 0, 1, 4, and 5 go from the LIM to the MS.

If all links are	Do
Open	step 31
other than listed here	step 51

- 31** To return the LIM unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 73
failed, and the system generated a card list	step 52
failed, and the system did not generate a card list	step 72

- 32** To determine if the links between the LIM unit and the MS are open, type

>TRNSL unit_no

and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1)

Example of a MAP response:

Returning LIM-to-MS links to service (continued)

```
LIM 1 UNIT 0 LINK 0 (9:0 - MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Open
LIM 1 UNIT 0 LINK 2 (9:2 - LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 - MS 0:21:1) Open
LIM 1 UNIT 0 LINK 5 (10:1 - MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 - LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

If all links are	Do
Open	step 33
other than listed here	step 65

- 33** Determine if the LIM unit state changes from in-service trouble to in-service. Wait 8 min.

Note: In the example in step 32, the LIM unit state appears on the right of the LIM1.

If in 8 min the LIM unit state is	Do
InSv	step 73
ISTb	step 34

- 34** To display more information about the fault, type

```
>QUERYPM UNIT unit_no FLT
```

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

If the response	Do
indicates that a fault is present, and the system generated a card list	step 36
is other than listed here	step 35

- 35** To test the LIM unit, type

```
>TST UNIT unit_no
```

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Returning LIM-to-MS links to service (continued)

Example of a MAP response:

LIM 4 UNIT 1 Test initiated.

If the TST command	Do
passed	step 73
failed, and the system generated a card list	step 36
failed, and the system did not generate a card list	step 72

- 36
- Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.
- 37
- To access the F-bus level of the MAP display, type
>FBUS
and press the Enter key.

Example of a MAP Display:

```
LIM 1 ISTb
Unit0:  ISTb      .
Unit1:  InSv      .
Tap:    0  4  8  12  16  20  24  28  32
FBus0:  ManB      BBBB BBBB BBBB BBBB ---- ---- ---- ---B BB--
FBus1:  InSv      ...M .I.. .S.. .... ---- ---- ---- ---. --
```

Note: In the previous example, B under a tap number indicates that the F-bus is manual busy. The B also indicates the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual busy tap. An I indicates an in-service trouble tap. An S indicates a system busy tap. A hyphen (-) indicates a tap that is not equipped.

38



WARNING
Possible loss of service
Make sure that the mate F-bus is in service before you busy the LIM unit that is in-service trouble. Make sure that the taps for equipped and online nodes are also in service before you manually busy the LIM unit that is in service trouble. Failure to proceed in this order can isolate application-specific units (ASU) on link interface shelves 1, 2, and 3.

Returning LIM-to-MS links to service (continued)

Determine the state of the mate F-bus.

Note: F-bus 1 is the mate F-bus if you work on LIM unit 0. The F-bus 0 is the mate F-bus if you work on LIM unit 1. The F-bus state appears on the right of the words FBus0 or FBus1 in the example MAP display in step 37.

	If the state of the mate F-bus is	Do
	InSv or ISTb	step 41
	other than listed here	step 39
39	Perform the procedure <i>Clearing a PM LIMF major alarm</i> in this document to return the mate F-bus to service. Complete the procedure and return to this point.	
40	To access the F-bus level of the MAP display, type >MAPCI;MTC;PM;POST LIM lim_no;F-BUS and press the Enter key. <i>where</i> lim_no is the number of the LIM (0 to 16) that you are working on	
41	Determine the state of the taps on the mate F-bus. Note: The tap states appear in the two rows of characters under the numbers 0 to 35 (or 0 to 23). The tap states appear in the example in step 37.	
	If the taps on the mate F-bus are	Do
	in service (.) or in-service trouble (I)	step 44
	manually busy (M) or system busy (S)	step 42
42	Perform the correct alarm clearing procedure in this document to return the taps to service. Complete the procedure and return to this point.	
43	To access the F-bus level of the MAP display, type >MAPCI;MTC;PM;POST LIM lim_no;FBUS and press the Enter key. <i>where</i> lim_no is the number of the LIM (0 to 16) that you are working on	

Returning LIM-to-MS links to service (continued)

44



WARNING
Loss of service
You must busy the F-bus for the in-service trouble LIM unit you are working on before you busy the LIM unit. Failure to proceed in this order can cause a loss of messaging for all ASUs in the LPP that carry the traffic.

To manually busy the F-bus for the LIM unit you are working on, type

>BSY FBUS fbus_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

If the response is	Do
LIM x FBus y Busy initiated. LIM x FBus y Busy passed.	step 46
LIM x FBus y Busy requires confirmation because the following NIUs may be active on this bus...	step 45
NIU xx unit 0 NIU xx unit 1	

Please confirm ("YES", "Y", "NO", or "N"):

45 To confirm the command, type

>YES

Example of a MAP:

```

Tap:  0    4    8   12   16   20   24   28   32
FBus0: ManB  BBBB BBBB BBBB BBBB ---- ---- ---- --B BB--
FBus1: InSv   .... .... .... .... ---- ---- ---- --. ....
```

LIM 1 FBus 0 Busy initiated.
LIM 1 FBus 0 Busy passed.

Note: In the example, F-bus 0 is manually busy.

46 To force the LIM unit to busy, type

>BSY UNIT unit_no FORCE

and press the Enter key.

Returning LIM-to-MS links to service (continued)

where

unit_no

is the number of the LIM unit (0 or 1)

Example of a MAP response:

LIM 1 UNIT 0 Busy initiated.

If the response is	Do
LIM x UNIT y Busy requires confirmation because the action will abort the current imaging process on LIM x UNIT y. Do you wish to proceed? Please confirm ("YES", "Y", "NO", or "N"):	step 47
LIM x UNIT y Busy requires confirmation because the action may cause a SEVERE system OUTAGE by isolating other nodes. Please confirm ("YES", "Y", "NO", or "N"):	step 48
Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed? Please confirm ("YES", "Y", "NO", or "N"):	step 49

Returning LIM-to-MS links to service (continued)

	If the response is	Do
	Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y and UNIT z. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed? Please confirm ("YES", "Y", "NO", or "N"):	step 50
	anything else	step 54
47	The LIM unit you are working on is imaging. Contact your next level of support to determine when it is safe to proceed. Continue with the rest of this procedure when instructed to do so.	
48	The mate unit is not in service. Busing the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.	
49	The LIM unit you are working on is imaging. The mate unit is not in service. Busing the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.	
50	The LIM unit you are working on and the mate unit are imaging. The mate unit is not in service. Busing the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.	
51	To test the LIM unit, type >TST UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the LIM unit (0 or 1) <i>Example of a MAP response:</i> LIM 4 UNIT 1 Test initiated.	
	If the TST command	Do
	passed	step 64
	failed, and the system generated a card list	step 53

Returning LIM-to-MS links to service (continued)

	If the TST command	Do
	failed, and the system did not generate a card list	step 72
52	To test the LIM unit, type >TST UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the LIM unit (0 or 1) <i>Example of a MAP response:</i> LIM 4 UNIT 1 Test initiated.	
	If the TST command	Do
	passed	step 73
	failed, and the system generated a card list	step 53
	failed, and the system did not generate a card list	step 72
53	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.	
54	To reset the manual busy LIM unit, type >PMRESET UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the manual busy LIM unit (0 or 1)	
	If the PMRESET command	Do
	passed	step 63
	failed	step 55
55	To load the LIM unit, type >LOADPM UNIT unit_no and press the Enter key. <i>where</i>	

Returning LIM-to-MS links to service (continued)

unit_no

is the number of the LIM unit to reload (0 or 1)

	If the LOADPM command	Do
	passed	step 63
	other than listed here	step 56
56	Replace the NT9X17 card for this unit. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
57	To reload the LIM unit, type >LOADPM UNIT unit_no and press the Enter key. where unit_no is the number of the LIM unit to reload (0 or 1)	
	If the LOADPM command	Do
	passed	step 63
	failed, and you did not replace the NT9X23 (NT9X62 for an LPP with fiber links) card for this unit	step 59
	failed, and you replaced the NT9X23 (NT9X62 for an LPP with fiber links) card for this unit	step 58
58	Make sure you replaced all the cards on the list that you recorded.	
	If you	Do
	did not replace all the cards on the list you recorded	step 61
	replaced all the cards on the list you recorded	step 72
59	Replace the NT9X23 (NT9X62 for an LPP with fiber links) card for this unit. Perform the correct procedure in the <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	
60	Go to step 57.	
61	Replace the next card on the list you recorded. Perform the correct procedure in the <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.	

Returning LIM-to-MS links to service (continued)

62 Go to step 57.

63 To return the LIM unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 64
failed	step 72

64 To determine if the LIM-to-MS links are open, type

>TRNSL unit_no

and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1) that lost its MS links

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 - MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Other end closed
LIM 1 UNIT 0 LINK 2 (9:2 - LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 - MS 0:21:1) Other end closed
LIM 1 UNIT 0 LINK 5 (10:1 - MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 - LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the example, links 0, 1, 4, and 5 go from the LIM to the MS.

If the states of all the LIM-to-MS links are	Do
Open	step 73
other than listed here	step 65

65 Record the following information for all LIM to MS links that are not open.

- LIM number
- LIM unit number
- link number
- LIM card number
- LIM port number

Returning LIM-to-MS links to service (continued)

- MS number
- MS card number
- MS port number

Note: The example in step 64 shows LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Other end closed. This line in the MAP response indicates that a DS30 (SR128 for an LPP with fiber links) link (link 1) terminates on LIM 1, unit 0, card 09R, port 1. The DS30 (SR128 for an LPP with fiber links) link (link 1) also terminates on MS 0, logical card 20, port 0.

- 66 The links that you recorded in step 65 can have faults. Replace any cards that have faults.
- 67 To access the Shelf 0 level of the MAP display, type
>MAPCI;MTC;MS;SHELF 0
 and press the Enter key.
- 68 To post the logical MS card number that you recorded in step 65, type
>CARD card_no
 and press the Enter key.
where
card_no
 is the logical card number that you recorded in step 65
- 69 To determine the MS slot number for the NT9X23 or NT9X62 (for an LPP with fiber links) paddleboard on which the DS30 or SR128 (for an LPP with fiber links) link between the LIM and MS terminates, type
>TRNSL ms_no PORT port_no
 and press the Enter key.
where
ms_no
 is the number of the MS (0 or 1) that you recorded in step 65
port_no
 is the number of a port (0 to 3) that you recorded in step 65
- Note:** For each MS logical card number that you recorded in step 65, there is a slot number that belongs to an NT9X23 (NT9X62 for an LPP with fiber links) paddleboard.

Example input:

>TRNSL 0 PORT 0

Example of a MAP response for an LPP:

Site	Flr	RPos	Bay_id	Shf	Description	Slot	EqPEC
HOST	01	A00	DPCC	0 39	MS 0:0:10	16	9X17AA FRNT
HOST	01	A00	DPCC	0 39	MS 0:0:10	16	9X23BA BACK

Port 0=LIM 2 (OK :Opened)

Example of a MAP response for an LPP with fiber links:

Returning LIM-to-MS links to service (end)

```

Site      Flr RPos Bay_id Shf  Description Slot EqPEC
HOST      01  A00  DPCC   0 39 MS 0:0:10   16   9X17AD FRNT
HOST      01  A00  DPCC   0 39 MS 0:0:10   16   9X62BB BACK
Port 0=LIM 2 (OK :Opened)

```

Note: The line MS 0:0:10 16 9X23BA BACK, appears in the example response. This line indicates that a DS30 link (SR128 for an LPP with fiber links) terminates on an NT9X23 (NT9X62 for an LPP with fiber links) card in slot 16R, on MS 0, shelf 0, logical card 10. The DS30 (SR128 for an LPP with fiber links) link is between the LIM and MS.

- 70** Record the MS slot number for the NT9X23 (NT9X62 for an LPP with fiber links) paddleboard on which the DS30 (SR128 for an LPP with fiber links) link between the LIM and MS terminate.
- 71** Determine if you recorded the MS slot number for all MS logical card numbers that you recorded in step 65.

If you	Do
recorded all the slot numbers	step 72
did not record all the slot numbers	step 68

- 72** For additional help, contact the next level of support.
- 73** The procedure is complete. Return to the main procedure that sent you to this procedure and continue as directed.

Returning LIM-to-MS links to service for an ELPP

Application

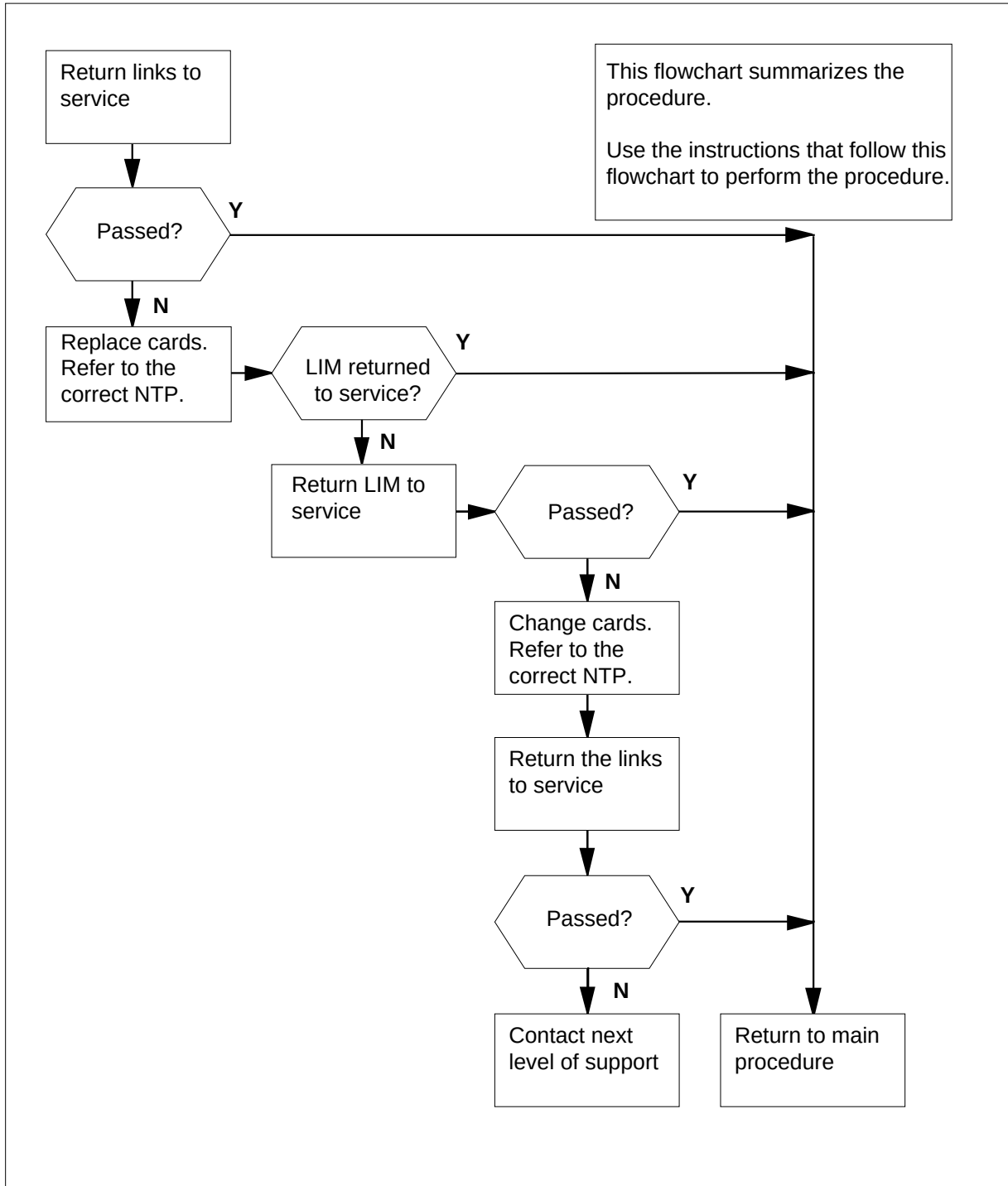
Use this procedure to return to service SR128 links between the link interface module (LIM) and the message switch (MS) in the enhanced link peripheral processor (ELPP).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Returning LIM-to-MS links to service for an ELPP (continued)

Summary of Returning LIM-to-MS links to service for an ELPP.



Returning LIM-to-MS links to service for an ELPP (continued)

Returning LIM-to-MS links to service for an ELPP



DANGER
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. Use of this procedure can cause equipment damage or loss of service.



WARNING
Delay in the return of equipment to service
If the system generates more than one card list, replace all the cards on a short card list before you replace any cards in a full card list.

At the MAP display

- 1 To determine the state of the LIM unit cross-links, type
>TRNSL unit_no
and press the Enter key.
where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 - MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Other end closed
LIM 1 UNIT 0 LINK 2 (9:2 - LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 - MS 0:21:1) Other end closed
LIM 1 UNIT 0 LINK 5 (10:1 - MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 - LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the previous example, links 0, 1, 4, and 5 go from the LIM to the MS.

- 2 Determine if any LIM-to-MS link has a state other than Open.

If	Do
all LIM-to-MS links are Open	step 74
any LIM-to-MS link is in any other state	step 3

Returning LIM-to-MS links to service for an ELPP (continued)

- 3 Record the MS number, card number, and port number of all LIM-to-MS links that have a state other than Open.

Note: The MS number, card number, and port number appear on the right of the word MS on the MAP example in step 1. In the example, link 1 (which is Other end closed). The MS number of link 1 is 0. The card number is 20. The port number is 0.

- 4 Select a link from the list recorded in step 3.

- 5 To access the Shelf 0 level of the MAP display, type

>MAPCI;MTC;MS;SHELF 0

and press the Enter key.

- 6 To post the card number for the link that you selected in step 4, type

>CARD card_no

and press the Enter key.

where

card_no

is the number of the card for the link that you selected in step 4

- 7 To make sure that one or more links from the LIM that you are working on terminate on the MS card you posted, type

>TRNSL ms_no PORT port_no

and press the Enter key.

where

ms_no

is the number of the MS (0 or 1) for the link that you selected in step 4

port_no

is the number of the port (0 to 3) for the link that you selected in step 4

Example input:

>TRNSL 0 PORT 0

Example of a MAP response:

Site	Flr	RPos	Bay_id	Shf	Description	Slot	EqPEC
HOST	01	A00	DPCC 0	39	MS 0:0:10	16	9X17AD FRNT
HOST	01	A00	DPCC 0	39	MS 0:0:10	16	9X62BB BACK

Port 0=LIM 2 (OK :Opened)

Note: In the example response, Port 0=LIM 2 indicates that a link from LIM 2 terminates on port 0. In the second line of text, 0:0:10 indicates that card 10, on MS 0, shelf 0 is posted.

Returning LIM-to-MS links to service for an ELPP (continued)

8

**WARNING****Possible action that affects service**

Do not busy all of the ports for the MS. A loss of traffic can occur if you busy all ports for the MS to the LIM links. A loss of traffic can also occur when you return the first port to service after you busy all the ports.

To manually busy the port for the link that you selected in step 4, type

>BSY ms_no PORT port_no

and press the Enter key.

where

ms_no

is the number of the MS (0 or 1) for the link that you selected in step 4

port_no

is the number of the port (0 to 3) for the link that you selected in step 4

Example of a MAP response:

Request to MAN BUSY MS:1 shelf:0 card:10 port:0 submitted
Request to MAN BUSY MS:1 shelf:0 card:10 port:0 passed

If the BSY command	Do
passed	step 9
failed	step 73

9

To test the port, type

>TST ms_number PORT port_number

and press the Enter key.

where

ms_number

is the number of the MS (0 or 1) that contains the affected card

port_number

is the number of the system-busy port (0 to 127)

Example of a MAP response:

Request to TEST 00S MS:0 shelf:0 card:4 port 1 submitted.
Request to TEST 00S MS:0 shelf:0 card:4 port 1 passed.

If the TST command	Do
passed	step 25

Returning LIM-to-MS links to service for an ELPP (continued)

	If the TST command	Do
	passed with Istb , and the system generates a card list	step 10
	failed, and the system generates a card list	step 10
	other than listed here	step 73
10	Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the first card on the list.	
11	To access the MS level of the MAP display, type >MS and press the Enter key.	
12	Determine the clocking configuration. Note: The clocking configuration appears under the Clock header of the MAP display.	
	If the MS that contains the card that you want to replace is	Do
	the slave MS, indicated by Slave under the Clock header	step 16
	the master MS, indicated by Master or M Free under the Clock header	step 13
13	To switch clock mastership, type >SWMAST and press the Enter key. <i>Example of a MAP response:</i> Request to Switch Clock Mastership MS: 0 submitted. Request to Switch Clock Mastership MS: 0 passed.	
	If the SWMAST command	Do
	passed	step 15
	failed	step 14
14	Perform the procedure <i>Failure to switch clock mastership</i> in this document. Complete the procedure and return to this point.	
15	Wait 10 min to make sure the MS is stable. Continue this procedure.	

Returning LIM-to-MS links to service for an ELPP (continued)

- 16** To manually busy the MS that contains the card that you want to replace, type
>BSY ms_number
 and press the Enter key.

where

ms_number

is the number of the MS (0 or 1) that contains the card that you want to replace

Example of a MAP response:

Request to MAN BUSY MS: 0 submitted.
 Request to MAN BUSY MS: 0 passed.

If the response is	Do
P-side nodes will be isolated-taken Out Of Service. BSY Aborted.	step 73
Remaining links to P-side nodes are unstable.	step 73
Request to MAN BUSY MS:0 passed	step 17
Request to MAN BUSY MS:1 passed	step 17
Request to MAN BUSY MS:0 failed	step 73
Request to MAN BUSY MS:1 failed	step 73
other than listed here	step 73

- 17** To replace the card, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

- 18** To perform an out-of-service test on the manual-busy MS, type

>TST ms_number

and press the Enter key.

where

ms_number

is the number of the manual-busy MS (0 or 1)

If the TST command	Do
passed	step 22
passed with Istb, and the system generates a card list	step 19

Returning LIM-to-MS links to service for an ELPP (continued)

	If the TST command	Do
	passed with Istb , and you re-placed all the cards on the list	step 73
	failed, and you replaced all the cards on the list	step 73
	failed, and the system generates a card list	step 20
	other than listed here	step 73
19	Record the location, description, slot number, PEC, and PEC suffix of the next card on the list. Go to step 17.	
20	Determine if you replaced all the cards on the list.	
	If you	Do
	replaced all the cards on the list	step 73
	did not replace all the cards on the list	step 21
21	Record the location, description, slot number, PEC, and PEC suffix of the first card listed that you did not replace. Go to step 17.	
22	To return the manual busy MS to service, type >RTS ms_number and press the Enter key. <i>where</i> ms_number is the number of the manual busy MS (0 or 1) <i>Example of a MAP response:</i> Request to RTS MS: 0 submitted. Request to RTS MS: 0 passed.	
	If the RTS command	Do
	passed	step 23
	failed	step 73
23	To access the Shelf level of the MAP, type >SHELF	

Returning LIM-to-MS links to service for an ELPP (continued)

and press the Enter key.

Example of a MAP display:

```
Shelf 0                      1 1 1 1
Card   1 2 3 4 5 6 7 8 9 0 1 2 3
Chain
MS 0   . . . M . . . . . . . .
MS 1   . . . . . . . . . . . .
```

24 To post the card number for the link that you selected in step 4, type

>CARD card_number

and press the Enter key.

where

card_number
is the number of the affected card (6 to 25)

Example of a MAP response:

```
Card 04 CMIC Interface Card Port: 0 1
MS 0           I           . M
MS 1           I           . .
```

25 To return the port to service, type

>RTS ms_number PORT port_number

and press the Enter key.

where

ms_number
is the number of the MS (0 or 1) for the link that you selected in step 4

port_number
is the number of the port (0 to 3) for the link that you selected in step 4

Example of a MAP response:

```
Request to RTS MS:1 shelf:0 card:10 port:0 submitted
Request to RTS MS:1 shelf:0 card:10 port:0 passed
```

If the RTS command	Do
passed, and you worked on all MS ports that you recorded in step 3	step 26
passed, and you did not work on all MS ports that you recorded in step 3	step 4

Returning LIM-to-MS links to service for an ELPP (continued)

	If the RTS command	Do
	failed, and you worked on all MS ports that you recorded in step 3	step 26
	failed, and you did not work on all MS ports that you recorded in step 3	step 4
26	Determine if you returned all MS ports to service that you recorded in step 3.	
	If you	Do
	returned all MS ports to service	step 27
	did not return all MS ports to service	step 73
27	To access the PM level of the MAP display, type >PM and press the Enter key.	
28	To post the LIM that lost links to the MS, type >POST LIM lim_no and press the Enter key. <i>where</i> lim_no is the number of the LIM (0 to 16) that lost links to the MS <i>Example of a MAP display:</i>	
	<pre> LIM 1 ISTb 00S 00S_Taps Links LIS1 LIS2 LIS3 Unit0: ISTb 2 . . . Unit1: InSv </pre>	
29	Determine the state of the LIM unit that you worked on when you started this procedure.	
	If the state of the LIM unit is	Do
	ISTb	step 32
	ManB	step 30
30	To determine if the links between the LIM unit and the MS are open, type >TRNSL unit_no and press the Enter key.	

Returning LIM-to-MS links to service for an ELPP (continued)

where

unit_no
is the number of the LIM unit (0 or 1) you are working on

Example of a MAP response:

LIM 1 UNIT 0 LINK 0 (9:0 - MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Open
LIM 1 UNIT 0 LINK 2 (9:2 - LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 - MS 0:21:1) Open
LIM 1 UNIT 0 LINK 5 (10:1 - MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 - LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.

Note: In the previous example, links 0, 1, 4, and 5 go from the LIM to the MS.

If all links are	Do
Open	step 31
other than listed here	step 52

- 31 To return the LIM unit to service, type
>RTS UNIT unit_no
and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 74
failed, and the system generated a card list	step 53
failed, and the system did not generate a card list	step 73

- 32 To determine if the links between the LIM unit and the MS are open, type
>TRNSL unit_no
and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) that you are working on

Example of a MAP response:

Returning LIM-to-MS links to service for an ELPP (continued)

```
LIM 1 UNIT 0 LINK 0 (9:0 - MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Open
LIM 1 UNIT 0 LINK 2 (9:2 - LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 - MS 0:21:1) Open
LIM 1 UNIT 0 LINK 5 (10:1 - MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 - LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

If all links are	Do
Open	step 33
other than listed here	step 66

- 33** Determine if the LIM unit state changes from in-service trouble to in-service. Wait 8 min.

Note: In the example in step 32, the LIM unit state appears on the right of the LIM1.

If in 8 min the LIM unit state is	Do
InSv	step 74
ISTb	step 34

- 34** To display more information about the fault, type

```
>QUERYPM UNIT unit_no FLT
```

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

If the response	Do
indicates that a fault is present, and the system generated a card list	step 36
is other than listed here	step 35

- 35** To test the LIM unit, type

```
>TST UNIT unit_no
```

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Returning LIM-to-MS links to service for an ELPP (continued)

Example of a MAP response:

LIM 4 UNIT 1 Test initiated.

If the TST command	Do
passed	step 74
failed, and the system generated a card list	step 36
failed, and the system did not generate a card list	step 73

36 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

37 To access the LIS level of the MAP display, type

>LIS lis_no

and press the Enter key.

where

lis_no

is the number of the link interface shelf (LIS) (1 to 3)

Example of a MAP display:

```
LIM 1 ISTb      00S      00S_Taps
              Links LIS1 LIS2 LIS3
Unit0: ISTb    2      .      .      .
Unit1: InSv    2      .      .      .

LIS 1      Tap: 0      4      8
FBus0:  ManB  BBBB    BBBB  ----
FBus1:  InSv   ...M    .I..  .S..
```

Note: In the previous example, B under a tap number indicates that the F-bus is manual busy. The B also indicates the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual busy tap. An I indicates an in-service trouble tap. An S indicates a system busy tap. A hyphen (-) indicates a tap that is not equipped.

Returning LIM-to-MS links to service for an ELPP (continued)

38

**WARNING****Possible loss of service**

Make sure that the mate F-bus is in service before you busy the LIM unit that is in-service trouble. Make sure that the taps for equipped and online nodes are also in service before you manually busy the LIM unit that is in service trouble. Failure to proceed in this order can isolate application-specific units (ASU) on link interface shelves 1, 2, and 3.

Determine the state of the mate F-bus.

Note: F-bus 1 is the mate F-bus if you work on LIM unit 0. The F-bus 0 is the mate F-bus if you work on LIM unit 1. The F-bus state appears on the right of the words FBus0 or FBus1 in the example MAP display in step 37.

If the state of the mate F-bus is	Do
InSv or ISTb	step 41
other than listed here	step 39

39 Perform the procedure *Clearing a PM LIMF major alarm* in this document to return the mate F-bus to service. Complete the procedure and return to this point.

40 To access the LIS level of the MAP display, type
>MAPCI;MTC;PM;POST LIM lim_no;LIS lis_no
 and press the Enter key.
where

lim_no

is the number of the LIM (0 to 16) that you are working on

lis_no

is the number of the LIS (1 to 3) that you are working on

41 Determine the state of the taps on the mate F-bus.

Note: The tap states appear in the two rows of characters under the numbers 0 to 11. The tap states appear in the example in step 37.

If the taps on the mate F-bus are	Do
in service (.) or in-service trouble (I)	step 44
manually busy (M) or system busy (S)	step 42

Returning LIM-to-MS links to service for an ELPP (continued)

- 42
- Perform the correct alarm clearing procedure in this document to return the taps to service. Complete the procedure and return to this point.
- 43
- To access the LIS level of the MAP display, type

>MAPCI;MTC;PM;POST LIM lim_no;LIS lis_no

and press the Enter key.

where

lim_no

is the number of the LIM (0 to 16) that you are working on

lis_no

is the number of the LIS (1 to 3) that you are working on

44



WARNING

Loss of service

You must busy the F-bus for the in-service trouble LIM unit you are working on before you busy the LIM unit. Failure to proceed in this order can cause a loss of messaging for all ASUs in the ELPP that carry the traffic.

To manually busy the F-bus for the LIM unit you are working on, type

>BSY FBUS fbus_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

If the response is	Do
LIM x FBus y Busy initiated. LIM x FBus y Busy passed.	step 46
LIM x LIS y FBus z Busy requires confirmation because the action may cause a SEVERE system OUTAGE. The following NIU(s) may be active on this bus:NIU # unit # Do you wish to proceed with this operation? Please confirm ("YES", "Y", "NO", or "N"):	step 45

- 45
- To confirm the command, type

>YES

and press the Enter key.

Example of a MAP display:

Returning LIM-to-MS links to service for an ELPP (continued)

	Tap:	0	4	8
FBus0: ManB		BBBB	BBBB	BBBB
FBus1: InSv		....	....	....

LIM 1 FBus 0 Busy initiated.

LIM 1 FBus 0 Busy passed.

Note: In the example, F-bus 0 is manually busy.

- 46** Repeat steps 37 to 44 for the other two LISs.

If you did	Do
work on all three LISs	step 47
not work on all three LISs	step 37

- 47** To force the LIM unit to busy, type
>BSY UNIT unit_no FORCE
 and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1)

Example of a MAP response:

LIM 1 UNIT 0 Busy initiated.

If the response is	Do
LIM x UNIT y Busy requires confirmation because the action will abort the current imaging process on LIM x UNIT y. Do you wish to proceed? Please confirm ("YES", "Y", "NO", or "N"):	step 48
LIM x UNIT y Busy requires confirmation because the action may cause a SEVERE system OUTAGE by isolating other nodes. Please confirm ("YES", "Y", "NO", or "N"):	step 49

Returning LIM-to-MS links to service for an ELPP (continued)

	If the response is	Do
	Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed? Please confirm ("YES", "Y", "NO", or "N"):	step 50
	Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y and UNIT z. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed? Please confirm ("YES", "Y", "NO", or "N"):	step 51
	anything else	step 55
48	The LIM unit you are working on is imaging. Contact your next level of support to determine when it is safe to proceed. Continue with this procedure when instructed to do so.	
49	The mate unit is not in service. Busing the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.	
50	The LIM unit you are working on is imaging. The mate unit is not in service. Busing the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.	
51	The LIM unit you are working on and the mate unit are imaging. The mate unit is not in service. Busing the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.	
52	To test the LIM unit, type >TST UNIT unit_no and press the Enter key. <i>where</i>	

Returning LIM-to-MS links to service for an ELPP (continued)

unit_no

is the number of the LIM unit (0 or 1)

Example of a MAP response:

LIM 4 UNIT 1 Test initiated.

If the TST command	Do
passed	step 65
failed, and the system generated a card list	step 54
failed, and the system did not generate a card list	step 73

- 53** To test the LIM unit, type
>TST UNIT unit_no
 and press the Enter key.

where

unit_no

is the number of the LIM unit (0 or 1)

Example of a MAP response:

LIM 4 UNIT 1 Test initiated.

If the TST command	Do
passed	step 74
failed, and the system generated a card list	step 54
failed, and the system did not generate a card list	step 73

- 54** Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

- 55** To reset the manual busy LIM unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

unit_no

is the number of the manual busy LIM unit (0 or 1)

If the PMRESET command	Do
passed	step 64

Returning LIM-to-MS links to service for an ELPP (continued)

		If the PMRESET command	Do
		failed	step 56
56	To load the LIM unit, type >LOADPM UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the LIM unit to reload (0 or 1)		
		If the LOADPM command	Do
		passed	step 64
		other than listed here	step 57
57	Replace the NT9X17 card for this unit. Perform the correct procedure in <i>Card Replacement Procedures</i> . Complete the procedure and return to this point.		
58	To reload the LIM unit, type >LOADPM UNIT unit_no and press the Enter key. <i>where</i> unit_no is the number of the LIM unit to reload (0 or 1)		
		If the LOADPM command	Do
		passed	step 64
		failed, and you did not replace the NT9X62 card for this unit	step 60
		failed, and you replaced the NT9X62 card for this unit	step 59
59	Make sure you replaced all the cards on the list that you recorded.		
		If you	Do
		did not replace all the cards on the list you recorded	step 62
		replaced all the cards on the list you recorded	step 73

Returning LIM-to-MS links to service for an ELPP (continued)

- 60 Replace the NT9X62 card for this unit. Perform the correct procedure in the *Card Replacement Procedures*. Complete the procedure and return to this point.
- 61 Go to step 58.
- 62 Replace the next card on the list you recorded. Perform the correct procedure in the *Card Replacement Procedures*. Complete the procedure and return to this point.
- 63 Go to step 58.
- 64 To return the LIM unit to service, type
>RTS UNIT unit_no
 and press the Enter key.
where
unit_no
 is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 65
failed	step 73

- 65 To determine if the LIM-to-MS links are open, type
>TRNSL unit_no
 and press the Enter key.
where
unit_no
 is the number of the LIM unit (0 or 1) that lost its MS links

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 - MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Other end closed
LIM 1 UNIT 0 LINK 2 (9:2 - LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 - MS 0:21:1) Other end closed
LIM 1 UNIT 0 LINK 5 (10:1 - MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 - LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the example, links 0, 1, 4, and 5 go from the LIM to the MS.

If the states of all the LIM-to-MS links are	Do
Open	step 74
other than listed here	step 66

Returning LIM-to-MS links to service for an ELPP (continued)

- 66** Record the following information for all LIM-to-MS links that are not open.
- LIM number
 - LIM unit number
 - link number
 - LIM card number
 - LIM port number
 - MS number
 - MS card number
 - MS port number
- Note:** The example in step 65 shows LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Other end closed. This line in the MAP response indicates that a SR128 link (link 1) terminates on LIM 1, unit 0, card 09R, port 1. The SR128 link (link 1) also terminates on MS 0, logical card 20, port 0.
- 67** The links that you recorded in step 66 can have faults . Replace any cards that have faults.
- 68** To access the Shelf 0 level of the MAP display, type
>MAPCI;MTC;MS;SHELF 0
 and press the Enter key.
- 69** To post the logical MS card number that you recorded in step 66, type
>CARD card_no
 and press the Enter key.
where
card_no
 is the logical card number that you recorded in step 66
- 70** To determine the MS slot number for the NT9X62 paddleboard on which the SR128 link between the LIM and MS terminates, type
>TRNSL ms_no PORT port_no
 and press the Enter key.
where
ms_no
 is the number of the MS (0 or 1) that you recorded in step 66
port_no
 is the number of a port (0 to 3) that you recorded in step 66
- Note:** For each MS logical card number that you recorded in step 66, there is a slot number that belongs to an NT9X62 paddleboard.
- Example input:*
>TRNSL 0 PORT 0
- Example of a MAP response:*

Returning LIM-to-MS links to service for an ELPP (end)

```

Site      Flr RPos Bay_id Shf  Description  Slot EqPEC
HOST      01  A00  DPCC    0  39 MS 0:0:10   16  9X17AD FRNT
HOST      01  A00  DPCC    0  39 MS 0:0:10   16  9X62BB BACK
Port 0=LIM 2 (OK :Opened)

```

Note: The line MS 0:0:10 16 9X62BB BACK, appears in the example response. This line indicates that a SR128 link terminates on an NT9X62 card in slot 16R, on MS 0, shelf 0, logical card 10. The SR128 link is between the LIM and MS.

- 71** Record the MS slot number for the NT9X62 paddleboard on which the SR128 link between the LIM and MS terminate.
- 72** Determine if you recorded the MS slot number for all MS logical card numbers that you recorded in step 66.

If you

Do

recorded all the slot numbers step 73

did not record all the slot
numbers step 69

-
- 73** For additional help, contact the next level of support.
 - 74** The procedure is complete. Return to the main procedure that sent you to this procedure and continue as directed.

Running a C7BERT

Application

Use this procedure to perform the following:

- local or remote loopback on an NT9X77AA, NT9X78BA, NT9X78CA, NT9X78DA or NT9X78DB card for LIUBASIC
- local or remote loopback on an NTEX26AA channelized access link
- link fault sectionalization
- CCS7 bit error rate test (C7BERT)
- inject bit errors during C7BERT

Use this procedure to run the CCS7 bit error rate test (C7BERT).

Definition

Bit error rate tests measure the quality of a CCS7 digital transmission path.

Run a C7BERT under the following conditions:

- before you put a CCS7 signaling link into service
- when you isolate faults

Common procedures

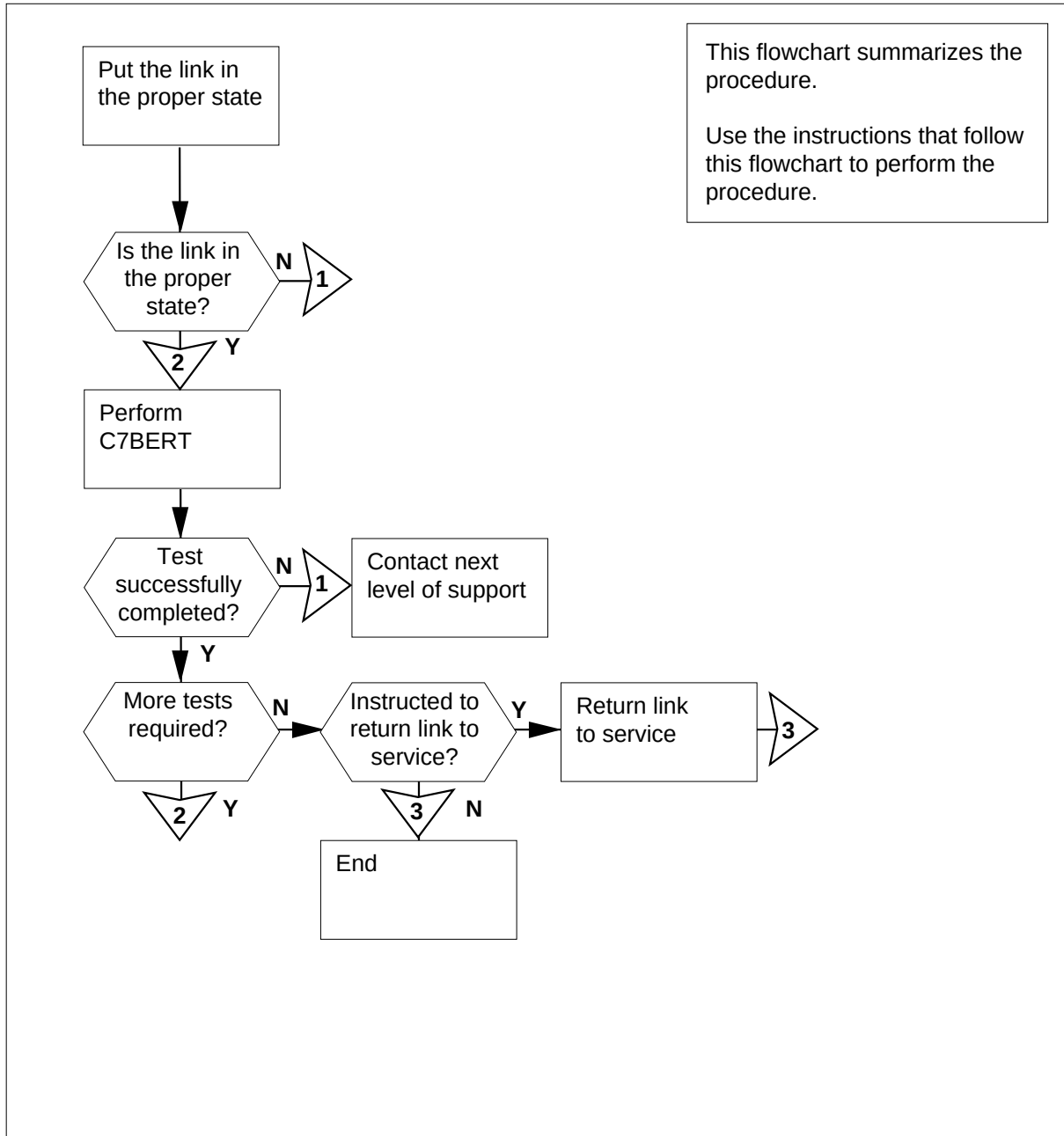
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Running a C7BERT (continued)

Summary of Running a C7BERT



Running a C7BERT (continued)

Running a C7BERT

ATTENTION

To run link fault sectionalization (LFS) the SOC option TEL0007 must have the RTU set to "Y" and the state set to "on".

ATTENTION

If link fault sectionalization (LFS) is activated, an anomaly in the NT9X78BA and NT9X78CA cards can cause latch past to occur. When the last DS0DP is a BA or CA paddle board, LFS may latch past the last DS0DP link.

For example, if the fifth and last device in a link is a BA or CA card, LFS may latch the sixth or seventh DS0DP.

Before running this procedure, check the number and type of devices on a link. This information helps reduce the link diagnosis time.

At the MAP terminal

- 1 Contact the next level of support to obtain the following information:
 - how the test stops (manually or automatically)
 - if reports are necessary and how many times each hour (1 to 12)
- 2 If you perform a remote loopback, inform operating company personnel at the far-end office that
 - you must busy and deactivate the link
 - operating company personnel must busy and deactivate the link at that end
- 3 To access the C7LKSET level of the MAP display, type
>MAPCI;MTC;CCS;CCS7;C7LKSET
 and press the Enter key.

Example of a MAP response:

	Traf	Sync						Link
LK	Stat	Stat	Resource	Stat	Physical	Access	Stat	Action

- 4 To post the LINKSET that includes the link that you want to test, type
>POST C linkset_name
 and press the Enter key.

Running a C7BERT (continued)

where

linkset_name

is the name of the LINKSET (as defined in table C7LKSET)

Example of a MAP response:

```

      Traf Sync
LK Stat Stat Resource Stat Physical Access Stat Link
0 OffL DAct LIU7 12 OffL DS0A Action
1 ManB DAct LIU7 13 InSv DS0A
Size of Posted Set = 2

```

If the LINKSET	Do
has a minimum of five entries	step 5
has a maximum of four entries	step 6

- 5 To display the rest of the links in the LINKSET, type

>NEXT

and press the Enter key.

- 6 Determine the state of the LIU7 for the link you want to test.

Note: The LIU7 state appears under the STAT header on the right of Resource.

If the LIU7 state	Do
is SysB or OffL	step 7
is ManB	step 10
is InSv or ISTb	step 12
is other than listed here	step 67

- 7 To access the PM level of the MAP display, type

>PM

and press the Enter key.

Example of a MAP display:

```

      SysB   ManB   OffL   CBsy   ISTb   InSv
PM          1      10      12      0      6      49

```

- 8 To post the LIU7, type

>POST LIU7 liu7_no

and press the Enter key.

Note: The number of the LIU7 is under the Resource header of the MAP display. In the example in step 4, the LIU7 connected to link 1 is 13.

Running a C7BERT (continued)

where

liu7_no

is the number of the LIU7 connected to the link you want to test

Example of a MAP response:

LIU7 13 InSv

9 To force the LIU7 to busy, type

>BSY FORCE

and press the Enter key.

If the BSY command	Do
passed	step 10
failed	step 67

10 To reset the LIU7, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 11
failed	step 67

11 To return the LIU7 to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	return to C7LKSET level of MAP
failed	step 67

12 Determine the traffic state of the link that you want to test.

Note: The traffic state of the link appears under the Traf Stat header of the MAP display.

If the traffic state	Do
is ManB	step 15
is other than listed here	step 13
is other than listed here	step 14

Running a C7BERT (continued)

- 13** To inhibit the link that you want to test, type

>INH link_no

and press the Enter key.

where

link_no

is the number of the link that you want to test (0 to 15)

If the INH command	Do
passed	step 14
failed	step 67

- 14** To manually busy the link, type

>BSY link_no

and press the Enter key.

where

link_no

is the number of the link that you want to test (0 to 15)

If the BSY command	Do
passed	step 12
failed	step 67

- 15** Determine the synchronization state of the link.

Note: The synchronization state of the link appears under the Sync Stat header.

Example of a MAP response:

	Traf	Sync							Link
LK	Stat	Stat	Resource	Stat	Physical	Access	Stat		Action
0	OffL	DAct	LIU7 12	OffL	DS0A				
1	ManB	DAct	LIU7 13	InSv	DS0A				

If the synchronization state	Do
is DAct	step 16
is other than listed here	step 17

- 16** To activate the link, type

>ACT link_no

and press the Enter key.

where

Running a C7BERT (continued)

link_no

is the number of the link that you want to test (0 to 15)

If the ACT command	Do
passed	step 17
failed	step 67

- 17** To deactivate the link, type
>DEACT link_no FORCE
 and press the Enter key.
where

link_no

is the number of the link that you want to test (0 to 15)

Note: The response can take a maximum of 10 min.

If the DEACT command	Do
passed	step 18
failed	step 67

- 18** To access the C7BERT level of the MAP display, type
>C7BERT
 and press the Enter key.
- 19** To perform a local loopback, proceed to step 20
 To perform a remote loopback, proceed to step 21
 To perform a link fault sectionalization, proceed to step 67

- 20** To activate a local loopback, type
>PMLLOOP LOCON link_no
 and press the Enter key.

where

link_no

is the number of the link that you want to test (0 to 15)

If the response	Do
is Link 1: Loopback Local on completed	step 30
is Link 1: Failed - PMLLOOP <Local|Remote> is already ac- tive	step 48 or 49

Running a C7BERT (continued)

	If the response	Do
	is Link 1: Failed - C7BERT already active on this link	step 23
	is This command is not implemented	step 22
	is Link nn: Failed - PM not equipped with 9X78DA or 9X78DB	step 22
	is Link 1: Loopback Local on completed. WARNING: In DTE mode, the V.35 clock must be present for C7BERT to pass	step 67
	is other than listed here	step 67
21	To activate a remote loopback, type >PMLLOOP RMTON link_no and press the Enter key. <i>where</i> link_no is the number of the link that you want to test (0 to 15)	
	If the response	Do
	is Link 1: Loopback Remote On completed	step 30
	is Link 1: Failed - PM- LOOP <Local|Remote> is already active	step 48 or 49
	is Link 1: Failed - C7BERT already active on this link	step 23
	is This command is not implemented	step 22
	is Link 1: Loopback Remote On completed. WARNING: In DTE mode, the V.35 clock must be present for C7BERT to pass	step 67

Running a C7BERT (continued)

	If the response	Do
	is Failed – Unable to seize trunk	Check the DTC that corresponds and try the remote loopback again.
	is Failed – Unable to set up NIU connection (NIU-LIU)	Check the NIU that corresponds and try the remote loopback again.
	is other than listed here	step 67
22	PM loop functionality is not available on your switch.	
	If	Do
	you want to run a C7BERT	step 24
	other than listed here	step 67
23	To stop the present C7BERT, type >STOP link_no and press the Enter key. <i>where</i> link_no is the number of the link that you entered in PMLOOP command Note: The STOP command overrides any set stop time without warning.	
	If the response	Do
	is Link 1: C7BERT stopped	repeat PMLOOP
	is other than listed here	step 67
24	Apply manual loopbacks to the network elements you want to test.	
25	To determine if a stop time is set, type >SETSTOP link_no STATUS and press the Enter key. <i>where</i> link_no is the number of the link (0 to 15) on which the C7BERT runs	
	If the response	Do
	is Link nn: Stop time set at: time	step 26

Running a C7BERT (continued)

	If the response	Do
	is Link nn: No stop time has been set	step 27
	is other than listed here	step 67
26	To clear the stop time, type >SETSTOP link_no CLEAR and press the Enter key. <i>where</i> link_no is the number of the link on which the C7BERT runs	
	If the response	Do
	is Stop time cleared	step 27
	is other than listed here	step 67
27	To set the new stop time, type >SETSTOP link_no SET day hours minutes and press the Enter key. <i>where</i> link_no is the number of the link (0 to 15) on which the C7BERT runs day is the day you want the test to stop automatically (MON, TUE, WED, THU, FRI, SAT or SUN) hours is the hour you want the test to stop automatically (0 to 23) minutes is the minute you want the test to stop automatically (00 to 59) <i>Example input:</i> >SETSTOP 3 SET MON 10 30 Note: The example entry sets the stop time for link 3 on Monday at 10:30 a.m.	
	If the response	Do
	is Link nn: Stop time set at: 19xx/yy/zz hh:mm:00.000 ddd	step 28

Running a C7BERT (continued)

	If the response	Do
	is other than listed here	step 67
28	Determine if the stop time is correct.	
	If the stop time	Do
	is correct	step 29
	is not correct	step 26
29	Wait until the stop time. Go to step 45.	
30	To start the C7BERT, type >START link_no and press the Enter key. <i>where</i> link_no is the number of the link that you want to test (0 to 15)	
	If the response	Do
	is Link n: C7BERT started	step 31
	is Link n:Failed - Link state is invalid for C7BERTLink must be ManB and DAct (or LFS)	step 6
	is other than listed here	step 67
31	To display the test results of the C7BERT, type >QUERY link_no PR and press the Enter key. <i>where</i> link_no is the number of the link that you test (0 to 15) <i>Example of a MAP response:</i>	

Running a C7BERT (continued)

```

query 1 pr
Link 1: C7BERT query
Run Time      :      662   Err Free Secs:      662
Tx Frames     :    19016   Rx Sync Errs :      0
Rx Frames     :    19019   Rx Bad Frames:      0
Rx Bit Errors :      0     Rx Bits       : 38931896
Bit Err Rate  : 0 x 10-15

```

If the response	Do
is a display of C7BERT statistics	step 32
is other than listed here	step 67

- 32** Determine if the transmission of any Tx frames occurred.

Note: The number of frames transmitted appears on the right of the Tx Frames header of the MAP display. In the example in step 31, the number of frames transmitted is 19 016 .

If Tx frames	Do
transmitted	step 33
did not transmit	step 67

- 33** The test runs correctly. The system generates test results when:

- you request reports
- you stop the test manually
- you stop the test automatically at a set time

Determine your next action.

Note: If a switch restart occurs when a C7BERT runs on a link, the test stops automatically. The test also stops when the LIU7 associated with the link fails.

If	Do
you want to request reports at exact intervals	step 40
you want to stop the test manually	step 44
you want to stop the test automatically at a set time	step 50

Running a C7BERT (continued)

	If	Do
	the link connects to a step 34 NT9X77AA or a NT9X78BA/CA/DA/DB card and you want to inject bit errors	
34	To display C7BERT results, type >QUERY link_no PR and press the Enter key. <i>where</i> link_no is the number of the link to test (0 to 15) <i>Example of a MAP response:</i> Link 1: C7BERT query Run Time : 1224 Err Free Secs: 1133 Tx Frames : 32538 Rx Sync Errs : 0 Rx Frames : 32580 Rx Bad Frames: 1 Rx Bit Errors: 0 Rx Bits : 66673662 Bit Err Rate : 1 x 10 ⁻⁸	
	If the response	Do
	is a result of test statistics	step 35
	is other than listed here	step 67
35	Record the number of Rx bit errors. Note: In the example in step 34, the number of bit errors received appears on the right of Rx bit errors.	
36	To inject bit errors, type >INJERR link_no and press the Enter key. <i>where</i> link_no is the number of the link that you tested in step 30 <i>Example of a MAP response:</i> injerr 1	
	If the response	Do
	is Link 1: INJECT ERROR completed	step 37

Running a C7BERT (continued)

	If the response	Do
	is Link n:Failed - C7BERT is not active on this link	step 30
	is other than listed here	step 67
37	To display the results of injected bit errors, type >QUERY link_no PR and press the Enter key. <i>where</i> link_no is the number of the link to test (0 to 15) <i>Example of a MAP response:</i> Link 1: C7BERT query Run Time : 1134 Err Free Secs: 1133 Tx Frames : 32568 Rx Sync Errs : 0 Rx Frames : 32570 Rx Bad Frames: 1 Rx Bit Errors: 6 Rx Bits : 66670792 Bit Err Rate : 1 x 10 ⁻⁸	
	If the response	Do
	is a result of test statistics	step 38
	is other than listed here	step 67
38	Determine the result of injected bit errors. Note: In the example in step 37, the number of bit errors received appears on the right of Rx Bit Errors.	
39	Subtract the result of the C7BERT that you recorded in step 35 from the result that you obtained in step 38.	
	If the difference	Do
	is six	step 33
	is other than listed here	step 67
40	To determine if report requests occurred, type >REPORT link_no STATUS and press the Enter key. <i>where</i>	

Running a C7BERT (continued)**link_no**

is the number of the link (0 to 15) on which the C7BERT runs

If the response	Do
is Link nn: Report interval already set at: mm times per hour	step 41
is Link nn: Automatic query reporting is not active	step 42
is other than listed here	step 67

- 41** To clear the previous report interval, type

>REPORT link_no OFF

and press the Enter key.

*where***link_no**

is the number of the link on which the C7BERT runs

Example of a MAP response:

Link nn: Automatic query reporting has been terminated

- 42** To set the number of reports for each hour, type

>REPORT link_no ON number

and press the Enter key.

*where***link_no**

is the number of the link (0 to 15) on which the C7BERT runs

number

is the number of reports for each hour (1 to 12)

*Example input:***>REPORT 1 ON 6**

If the response	Do
is Link nn: Report interval set at: nn times per hour	step 43
is other than listed here	step 67

- 43** Determine if the report interval is correct.

If the interval	Do
is correct	step 33

Running a C7BERT (continued)

	If the interval	Do
	is not correct	step 41
44	To stop the C7BERT, type >STOP link_no and press the Enter key. <i>where</i> link_no is the number of the link (0 to 15) on which the C7BERT runs Note: The STOP command overrides any set stop time without warning.	
	If the response	Do
	is Link 1: C7BERT stopped with a display of test statistics	step 45
	is other than listed here	step 67
45	Give the results to the next level of support.	
	If the link	Do
	terminates on an NT9X77AA, NT9X78BA/CA/DA/DB, or NTEX26AA card. You ran a PM local or remote loopback. You must return the link to service	step 48 or 49
	terminates on an NT9X77AA, NT9X78BA/CA/DA/DB, or NTEX26AA card. You ran a PM local or remote loopback. You must perform more tests	step 48 or 49
	does not terminate on an NT9X77AA, NT9X78BA/CA/DA/DB, or NTEX26AA card	step 46
	is other than listed here	step 111
46	Remove the manual loopback across network elements.	
47	Your next step depends on the instructions that you received from the next level of support.	
	If	Do
	instructed to return the link to service	step 55
	instructed to perform more tests	step 24

Running a C7BERT (continued)

	If	Do
	other than listed here	step 111
48	To deactivate a local loopback, type >PMLLOOP LOCOFF link_no and press the Enter key. <i>where</i> link_no is the number of the link that you tested in step 20	
	If the response	Do
	is pmloop off 1Link 1: Loopback Local off completed	step 55
	is other than listed here	step 67
49	To deactivate a remote loopback, type >PMLLOOP RMTOFF link_no and press the Enter key. <i>where</i> link_no is the number of the link that you tested in step 20	
	If the response	Do
	is pmloop off 1Link 1: Loopback Remote off completed	step 55
	is other than listed here	step 67
50	To determine if a stop time is set, type >SETSTOP link_no STATUS and press the Enter key. <i>where</i> link_no is the number of the link (0 to 15) on which the C7BERT runs	
	If the response	Do
	is Link nn: Stop time set at:time	step 51

Running a C7BERT (continued)

	If the response	Do
	is Link nn: No stop time has been set	step 52
	is other than listed here	step 67
51	To clear the stop time, type >SETSTOP link_no CLEAR and press the Enter key. <i>where</i> link_no is the number of the link on which the C7BERT runs	
	If the response	Do
	is Stop time cleared	step 52
	is other than listed here	step 67
52	To set the new stop time, type >SETSTOP link_no SET day hours minutes and press the Enter key. <i>where</i> link_no is the number of the link (0 to 15) on which the C7BERT runs day is the day you want the test to stop automatically (MON, TUE, WED, THU, FRI, SAT, or SUN) hours is the hour you want the test to stop automatically (0 to 23) minutes is the minute you want the test to stop automatically (00 to 59) <i>Example input:</i> >SETSTOP 3 SET MON 10 30 Note: The example entry sets the stop time for link 3 on Monday at 10:30 a.m.	
	If the response	Do
	is Link nn: Stop time set at: 19xx/yy/zz hh:mm:00.000 ddd	step 53

Running a C7BERT (continued)

	If the response	Do
	is other than listed here	step 67
53	Determine if the stop time is correct.	
	If the stop time	Do
	is correct	step 54
	is not correct	step 51
54	Wait until the stop time. Go to step 45.	
55	To quit the C7BERT level of the MAP display, type >QUIT and press the Enter key.	
56	To activate the link on which the C7BERT ran, type >ACT link_no and press the Enter key. <i>where</i> link_no is the number of the link (0 to 15)	
	If the ACT command	Do
	passed	step 57
	failed	step 67
	generates a response other than listed here	step 67
57	Determine the synchronization state of the link. Note: The synchronization state appears under the Sync Stat header of the MAP display.	
	If the synchronization state	Do
	is Alnd	step 64
	is other listed here	step 58
58	Wait 8 min, and continue this procedure.	

Running a C7BERT (continued)

59	Determine the synchronization state of the link.						
<table> <tr> <th data-bbox="542 369 883 394">If the synchronization state</th><th data-bbox="987 369 1024 394">Do</th></tr> <tr> <td data-bbox="542 426 959 527">is not Alnd, and you did not ask the far-end office to activate the link</td><td data-bbox="987 426 1078 451">step 60</td></tr> <tr> <td data-bbox="542 558 959 625">is not Alnd, and you asked the far-end office to activate the link</td><td data-bbox="987 558 1078 583">step 62</td></tr> </table>		If the synchronization state	Do	is not Alnd, and you did not ask the far-end office to activate the link	step 60	is not Alnd, and you asked the far-end office to activate the link	step 62
If the synchronization state	Do						
is not Alnd, and you did not ask the far-end office to activate the link	step 60						
is not Alnd, and you asked the far-end office to activate the link	step 62						
60	Determine from office records the far-end office that connects to the linkset posted in step 4.						
61	Contact the far-end office. Tell operating company personnel at the location that: • you must busy and deactivate the link to align the link again • the link activates from both ends after you busy and deactivate the link Go to step 57.						
62	To deactivate the link, type >DEACT link_no FORCE and press the Enter key. <i>where</i> link_no is the number of the link that you activated in step 56						
63	Tell operating company personnel at the far-end office to activate the link. To activate the link from your end, type >ACT link_no and press the Enter key. <i>where</i> link_no is the number of the link that you activated in step 56						
<table> <tr> <th data-bbox="542 1440 802 1465">If the ACT command</th><th data-bbox="987 1440 1024 1465">Do</th></tr> <tr> <td data-bbox="542 1497 630 1522">passed</td><td data-bbox="987 1497 1078 1522">step 64</td></tr> <tr> <td data-bbox="542 1554 618 1579">failed</td><td data-bbox="987 1554 1078 1579">step 67</td></tr> </table>		If the ACT command	Do	passed	step 64	failed	step 67
If the ACT command	Do						
passed	step 64						
failed	step 67						
64	To return the link to service, type >RTS link_no and press the Enter key. <i>where</i>						

Running a C7BERT (continued)**link_no**

is the number of the link that you activated in step 56

If the RTS command**Do**

passed

step 65

failed

step 67

65 To uninhibit the link, type**>UINH link_no**

and press the Enter key.

*where***link_no**

is the number of the link that you activated in step 56

If the UINH command**Do**

passed

step 111

failed

step 67

66 For additional help, contact the next level of support.**67****ATTENTION**

To run link fault sectionalization (LFS) the SOC option TEL0007 must have the RTU set to "Y" and the state set to "on".

ATTENTION

If link fault sectionalization (LFS) is activated, an anomaly in the NT9X78BA and NT9X78CA cards can cause latch past to occur. When the last DS0DP is a BA or CA paddle board, LFS may latch past the last DS0DP link.

For example, if the fifth and last device in a link is a BA or CA card, LFS may latch the sixth or seventh DS0DP.

Before running this procedure, check the number and type of devices on a link. This information helps reduce the link diagnosis time.

68 To activate link fault sectionalization, type**>LFSLOOP START link_no element_type loopback_type occurrence**

and press the Enter key.

Running a C7BERT (continued)

where

link_no

is the number of the link that you want to test (0 to 15)

element_type

is the type of network element to use the loopback on
(DS0DP, OCUDP, CSU, NEI, or DSU)

loopback_type

is if the loopback is latching or non-latching (LATCH or
NONLATCH)

occurrence

is the occurrence of the element type where link fault
sectionalization is to initiate (1 to 16)

Example input:

>LFSLOOP START 1 DS0DP LATCH 1

69 The response that the system generates will determine your next step.

If the response	Do
is Link nn: LFS ON complete Looped back at element mm	step 80
Link nn: LFS ON complete Looped back at element mm WARNING: Physical loop may exist as confirmation byte not received.	step 80
is LFS a nonlatch sequence initiated for element mm. Run C7BERT to verify loop-back at element mm.	step 80
is Link nn: Failed - C7BERT already active on this link	step 73
is Link 1: Failed - LFS already active on this link	step 71
is Link nn: Has not gone into loopback. Element mm has not responded Link nn: LFS OFF complete	step 72
is Link nn: Has not gone into loopback. Link nn: LFS OFF complete	step 72
is Link nn: Failed - PM not equipped with 9X78DA or 9X78DB	step 70
is other than listed here	step 110

Running a C7BERT (continued)

70	PM loop functionality is not available on your switch.
	Do
	step 74
	step 110
71	To remove the link fault sectionalization already applied, type >LFSLOOP STOP link_no and press the Enter key. <i>where</i> link_no is the number of the link that you entered in step 67
	Do
	step 67
	step 110
72	Record the element type and occurrence specified in step 67. Note: The link fault sectionalization failed at the element type and occurrence that you specified. The failure occurred for one of the following reasons: • The element type and occurrence specified is beyond the location of the link problem. • The element type and occurrence are not present. Go to step 110.
73	To stop the current C7BERT, type >STOP link_no and press the Enter key. <i>where</i> link_no is the number of the link that you entered in step 67 Note: The STOP command overrides any set stop time without warning.
	Do
	step 67
	step 110
74	Apply manual loopbacks to the network elements you want to test.

Running a C7BERT (continued)

- 75 To determine if a stop time is set, type

>SETSTOP link_no STATUS

and press the Enter key.

where

link_no

is the number of the link (0 to 15) on which the C7BERT runs

If the response	Do

is Link nn: Stop time set at:time	step 76

is Link nn: No stop time has been set	step 77

is other than listed here	step 110

- 76 To clear the stop time, type

>SETSTOP link_no CLEAR

and press the Enter key.

where

link_no

is the number of the link on which the C7BERT runs

If the response	Do

is Stop time cleared	step 77

is other than listed here	step 110

- 77 To set the new stop time, type

>SETSTOP link_no SET day hours minutes

and press the Enter key.

where

link_no

is the number of the link (0 to 15) on which the C7BERT runs

day

is the day you want the test to stop automatically (MON, TUE, WED,

THU, FRI, SAT, or SUN)

hours

is the hour you want the test to stop automatically (0 to 23)

minutes

is the minute you want the test to stop automatically (00 to 59)

Example input:

>SETSTOP 3 SET MON 10 30

Running a C7BERT (continued)

Note: The example entry sets the stop time for link 3 on Monday at 10:30 a.m.

	If the response	Do
	is Link nn: Stop time set at: 19xx/yy/zz hh:mm:00.000 ddd	step 78
	is other than listed here	step 110
78	Determine if the stop time is correct.	
	If the stop time	Do
	is correct	step 79
	is not correct	step 76
79	Wait until the stop time. Go to step 95.	
80	To start the C7BERT, type >START link_no and press the Enter key. <i>where</i> link_no is the number of the link that you want to test (0 to 15)	
	If the response	Do
	is Link n: C7BERT started	step 81
	is Link n:Failed - Link state is invalid for C7BERTLink must be ManB and DAct (or LFS)	step 6
	is other than listed here	step 110
81	To display the test results of the C7BERT, type >QUERY link_no PR and press the Enter key. <i>where</i> link_no is the number of the link to test (0 to 15) <i>Example of a MAP response:</i>	

Running a C7BERT (continued)

```

query 1 pr
Link 1: C7BERT query
Run Time      :      662    Err Free Secs:      662
Tx Frames     :     19016   Rx Sync Errs :      0
Rx Frames     :     19019   Rx Bad Frames:      0
Rx Bit Errors:      0      Rx Bits       : 38931896
Bit Err Rate  : 0 x 10-15

```

If the response	Do
is a display of C7BERT statistics	step 82
is other than listed here	step 110

- 82** Determine if the transmission of any Tx frames occurred.
- Note:** The number of frames transmitted appears on the right of the Tx Frames header of the MAP display. In the example in step 31, the number of frames transmitted is 19 016 .

If Tx frames	Do
transmitted	step 83
did not transmit	step 110

- 83** The test runs correctly. The system generates test results when:

- you request reports
- you stop the test manually
- you stop the test automatically at a set time

Determine your next action

Note: If a switch restart occurs while a C7BERT runs on a link, the test stops automatically. The test stops when the LIU7 for the link fails.

If	Do
you want to request reports	step 90
you want to stop the test manually	step 94
you want to stop the test automatically at a set time	step 75
the link connects to a NT9X77AA or a NT9X78BA/CA/DA/DB card and you want to inject bit errors	step 84

Running a C7BERT (continued)

- 84 To display C7BERT results, type

>QUERY link_no PR

and press the Enter key.

where

link_no

is the number of the link that you want to test (0 to 15)

Example of a MAP response:

Link 1: C7BERT query

Run Time	:	1224	Err Free Secs:	1133
Tx Frames	:	32538	Rx Sync Errs :	0
Rx Frames	:	32580	Rx Bad Frames:	1
Rx Bit Errors:		0	Rx Bits	: 66673662
Bit Err Rate	:	1 x 10 ⁻⁸		

If the response	Do
is a display of test statistics	step 85
is other than listed here	step 110

- 85 Record the number of Rx bit errors.

Note: In the example in step 84, the number of bit errors received appears on the right of Rx bit errors.

- 86 To inject bit errors, type

>INJERR link_no

and press the Enter key.

where

link_no

is the number of the link that you tested in step 80

Example of a MAP response:

injerr 1

If the response	Do
is Link 1: INJECT ERROR completed	step 87
is Link n:Failed - C7BERT is not active on this link	step 80
is other than listed here	step 110

- 87 To display the result of injected bit errors, type

>QUERY link_no PR

Running a C7BERT (continued)

and press the Enter key.

where

link_no

is the number of the link to test (0 to 15)

Example of a MAP response:

```
Link 1: C7BERT query
Run Time      :      1134    Err Free Secs:      1133
Tx Frames     :      32568   Rx Sync Errs :         0
Rx Frames     :      32570   Rx Bad Frames:         1
Rx Bit Errors :         6    Rx Bits       : 66670792
Bit Err Rate  : 1 x 10-8
```

If the response	Do
is a result of test statistics	step 88
is other than listed here	step 110

- 88** Determine the result of injected bit errors.

Note: In the example in step 87, the number of bit errors received appears on the right of Rx Bit Errors.

- 89** Subtract the result of the C7BERT that you recorded in step 85 from the result that you obtained in step 88.

If the difference	Do
is six	step 83
is other than listed here	step 110

- 90** To determine if report requests occurred, type

>REPORT link_no STATUS

and press the Enter key.

where

link_no

is the number of the link (0 to 15) on which the C7BERT runs

If the response	Do
is Link nn: Report interval al-ready set at: mm times per hour	step 91
is Link nn: Automatic query re- porting is not active	step 92
is other than listed here	step 110

Running a C7BERT (continued)

- 91** To clear the previous report interval, type
>REPORT link_no OFF
 and press the Enter key.
where
link_no
 is the number of the link on which the C7BERT runs
MAP response:
 Link nn: Automatic query reporting has been terminated
- 92** To set the number of reports for each hour, type
>REPORT link_no ON number
 and press the Enter key.
where
link_no
 is the number of the link (0 to 15) on which the C7BERT runs
number
 is the number of reports for each hour (1 to 12)
Example input:
>REPORT 1 ON 6
- | If the response | Do |
|--|----------|
| is Link nn: Report interval set at:nn times per hour | step 93 |
| is other than listed here | step 110 |
- 93** Determine if the report interval is correct.
- | If the interval | Do |
|-----------------|---------|
| is correct | step 83 |
| is not correct | step 91 |
- 94** To stop the C7BERT, type
>STOP link_no
 and press the Enter key.
where
link_no
 is the number of the link (0 to 15) on which the C7BERT runs

Running a C7BERT (continued)

Note: The STOP command overrides any set stop time without warning.

	If the response	Do
	is Link 1: C7BERT stopped with a display of test statistics	step 95
	is other than listed here	step 110
95	Give the results to the next level of support.	
	If	Do
	the link terminates on an NT9X77AA or NT9X78BA/CA/DA/DB card. You ran a link fault sectionalization. You must return the link to service	step 99
	the link terminates on an NT9X77AA or NT9X78BA/CA/DA/DB card. You ran a link fault sectionalization. You must perform more tests	step 71
	link does not terminate on an NT9X77AA or NT9X78BA/CA/DA/DB card	step 96
	other than listed here	step 111
96	Remove the manual loopback across network elements.	
97	Your next step depends on the instructions that you received from the next level of support.	
	If	Do
	instructed to return the link to service	step 99
	instructed to perform more tests	step 74
	other than listed here	step 111
98	To remove the link fault sectionalization, type >LFSLOOP STOP link_no and press the Enter key. <i>where</i>	

Running a C7BERT (continued)

	link_no is the number of the link that you tested (0 to 15)								
	<table> <tr> <th>If the response</th><th>Do</th></tr> <tr> <td>is LFSLoop stop n Link n: LFS OFF complete</td><td>step 99</td></tr> <tr> <td>is other than listed here</td><td>step 110</td></tr> </table>	If the response	Do	is LFSLoop stop n Link n: LFS OFF complete	step 99	is other than listed here	step 110		
If the response	Do								
is LFSLoop stop n Link n: LFS OFF complete	step 99								
is other than listed here	step 110								
99	To quit the C7BERT level of the MAP display, type >QUIT and press the Enter key.								
100	To activate the link on which the C7BERT runs, type >ACT link_no and press the Enter key. <i>where</i> link_no is the number of the link (0 to 15) <table> <tr> <th>If the ACT command</th><th>Do</th></tr> <tr> <td>passed</td><td>step 101</td></tr> <tr> <td>failed</td><td>step 110</td></tr> <tr> <td>generates a result other than listed here</td><td>step 110</td></tr> </table>	If the ACT command	Do	passed	step 101	failed	step 110	generates a result other than listed here	step 110
If the ACT command	Do								
passed	step 101								
failed	step 110								
generates a result other than listed here	step 110								
101	Determine the synchronization state of the link. Note: The synchronization state appears under the Sync Stat header of the MAP display. <table> <tr> <th>If the synchronization state</th><th>Do</th></tr> <tr> <td>is Alnd</td><td>step 108</td></tr> <tr> <td>is other than listed here</td><td>step 102</td></tr> </table>	If the synchronization state	Do	is Alnd	step 108	is other than listed here	step 102		
If the synchronization state	Do								
is Alnd	step 108								
is other than listed here	step 102								
102	Wait 8 min, and continue the procedure.								
103	Determine the synchronization state of the link. <table> <tr> <th>If the synchronization state</th><th>Do</th></tr> <tr> <td>is not Alnd, and you did not ask the far-end office to activate the link</td><td>step 104</td></tr> </table>	If the synchronization state	Do	is not Alnd, and you did not ask the far-end office to activate the link	step 104				
If the synchronization state	Do								
is not Alnd, and you did not ask the far-end office to activate the link	step 104								

Running a C7BERT (continued)

	If the synchronization state	Do
	is not Alnd, and you asked the far-end office to activate the link	step 106
104	Determine from office records the far-end office that connects to the linkset you posted in step 4.	
105	Contact the far-end office. Tell operating company personnel at that location: • you must busy and deactivate the link in order to realign the link • the link must be activated from both ends after you busy and deactivate the link. Go to step 101.	
106	To deactivate the link, type >DEACT link_no FORCE and press the Enter key. where link_no is the number of the link that you activated in step 100	
107	Tell operating company personnel at the far-end office to activate the link. To activate the link from your end, type >ACT link_no and press the Enter key. where link_no is the number of the link that you activated in step 100	
	If the ACT command	Do
	passed	step 108
	failed	step 110
108	To return the link to service, type >RTS link_no and press the Enter key. where link_no is the number of the link that you activated in step 100	
	If the RTS command	Do
	passed	step 111
	failed	step 110

Running a C7BERT (end)

- 109 To uninhibit the link, type
 >UINH link_no
and press the Enter key.
where
 link_no
 is the number of the link that you activated in step 100

If the UINH command	Do
passed	step 111
failed	step 110

- 110 For additional help, contact the next level of support.
- 111 The procedure is complete.

Running a C7BERT for high-speed links

Application

Use this procedure to do the following:

- perform local or remote loopback on an NTEX78AA card for LIUBASIC
- perform far-end DS-1 ESF loopback (CARLOOP)
- inject bit errors during HSL C7BERT
- run the CCS7 bit error rate test for high-speed links (HSL C7BERT)

Note: Do not use CARLOOP loopback test for HSLs connected to an asynchronous transfer mode (ATM) switch. CARLOOP test for HSLs is only valid over a direct connection.

Definition

Bit error rate testing measures the quality of a CCS7 digital transmission path.

Run an HSL C7BERT in the following situations:

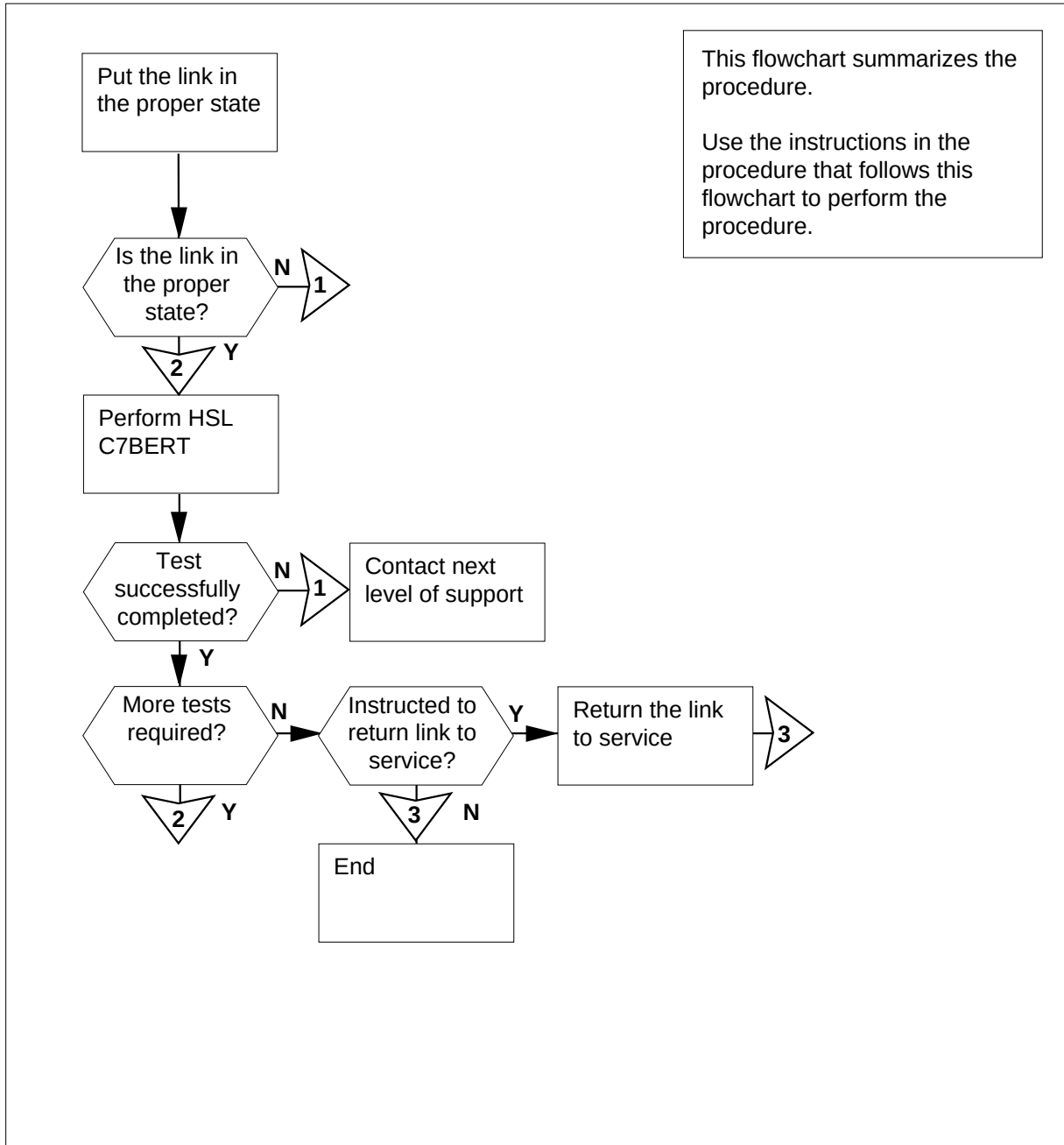
- before bringing a CCS7 high-speed signaling link into service
- when isolating faults

Common procedures

None

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart as a summary of the procedure. Follow the steps to perform the procedure.

Running a C7BERT for high-speed links (continued)**Summary of Running an HSL C7BERT**

Running a C7BERT for high-speed links (continued)

Running an HSL C7BERT



CAUTION

Risk of service interruption

The following procedure takes a CCS7 link out of service. Before proceeding, consult your next level of support to ensure network impact is minimized.

At the MAP terminal

- 1 Contact the next level of support to obtain the following information:
 - how to stop the test (manually or automatically)
 - if periodic reports are required and how many times each hour (1 to 12)
- 2 If you want to perform a remote loopback, inform personnel at the far-end office that
 - you want to busy and return the link to service
 - they must busy and return the link to service at their end

- 3 Enter the C7LKSET level of the MAP display by typing

>MAPCI;MTC;CCS;CCS7;C7LKSET

Press the Enter key.

Example of a MAP response:

	Traf	Sync							Link
LK	Stat	Stat	Resource	Stat	Physical	Access	Stat		Action

- 4 To post the linkset that includes the link that you want to test type

>POST C linkset_name

and press the Enter key.

where

linkset_name

is the name of the linkset (as defined in table C7LKSET)

Example of a MAP response:

	Traf	Sync							Link
LK	Stat	Stat	Resource	Stat	Physical	Access	Stat		Action
0	OffL	DAct	DLIU 12	OffL	DS1				
1	SysB	DAct	DLIU 13	InSv	DS1				

Size of Posted Set = 2

Running a C7BERT for high-speed links (continued)

- 5 Determine the state of the DLIU associated with the link to be tested.

Note: The DLIU state is shown under the Stat header to the right of the Resource header.

If the DLIU state is	Do
SysB, ManB, or OffL	step 6
InSv or ISTb	step 16
anything else	step 77

Note: The DLIU consists of two peripherals: the high-speed link router (HSLR) and the high-speed link interface unit (HLIU).

- 6 Enter the PM level of the MAP display by typing

>PM

Press the Enter key.

Example of a MAP display:

	SysB	ManB	OffL	CBsy	ISTb	InSv
PM	1	10	12	0	6	49

- 7 Post the HLIU by typing

>POST HLIU dliu_no

Press the Enter key.

Note: The number of the DLIU is under the Resource header of the MAP display. In the example in step 4, the HLIU connected to link 1 is 13.

where

dliu_no

is the number of the DLIU connected to the link you want to test

Example of a MAP response:

HLIU 13 InSv

If the HLIU state is	Do
SysB	step 8
OffL	step 9
ManB	step 10
InSv or ISTb	step 11

Running a C7BERT for high-speed links (continued)

- 8 Wait one to three minutes for the HLIU to change from SysB to InSv.

If After three minutes, if the state of the HLIU is	Do
InSv	step 11
SysB	step 77
anything else	step 77

- 9 Busy the HLIU by typing

>BSY

Press the Enter key.

If the BSY command	Do
passed	step 10
failed	step 77

- 10 Return the HLIU to service by typing

>RTS

Press the Enter key.

If the RTS command	Do
passed	step 11
failed	step 77

- 11 Post the HSLR by typing

>POST HSLR dliu_no

Press the Enter key.

where

dliu_no

is the number of the DLIU associated with the HSLR you want to post

If the state of the HSLR is	Do
InSv or ISTb	step 15
ManB	step 14
OffL	step 13
SysB	step 12

Running a C7BERT for high-speed links (continued)

- 12** Wait one to three minutes for the HSLR to change from SysB to InSv.
- | If After three minutes, if the state of the HSLR is | Do |
|---|---------|
| InSv | step 15 |
| SysB | step 77 |
| anything else | step 77 |
- 13** Busy the HSLR by typing
>BSY
Press the Enter key.
- | If the BSY command | Do |
|--------------------|---------|
| passed | step 15 |
| failed | step 77 |
- 14** Return the HSLR to service by typing
>RTS
Press the Enter key.
- | If the RTS command | Do |
|--------------------|---------|
| passed | step 15 |
| failed | step 77 |
- 15** Enter the C7LKSET level of the MAP display by typing
>MAPCI ; MTC ; CCS ; CCS7 ; C7LKSET
Press the Enter key.
- 16** Determine the traffic state of the link you want to test.
- Note:** The traffic state of the link is shown under the Traf Stat header of the MAP display. The synchronization state is shown under the Sync Stat header of the MAP display.
- | If the traffic and synchronization states are in the sequence given | Do |
|---|---------|
| Offl DAct | step 17 |
| Bsy DAct | step 18 |
| SysB DAct | step 22 |
| SysB SysB | step 20 |
-

Running a C7BERT for high-speed links (continued)

		If the traffic and synchronization states are in the sequence given	Do
		anything else	step 19
17	Busy the link by typing >BSY link_no Press the Enter key. <i>where</i> link_no is the number of the link you want to test (0 to 15)		
		If the BSY command	Do
		passed	step 19
		failed	step 77
18	Return the link to service by typing >RTS link_no Press the Enter key. This action places the link into the SysB/DAct state. <i>where</i> link_no is the number of the link you want to test (0 to 15)		
		If the RTS command	Do
		passed	step 22
		failed	step 77
19	Inhibit the link you want to test by typing >INH link_no Press the Enter key. <i>where</i> link_no is the number of the link you want to test (0 to 15)		
		If the INH command	Do
		passed	step 20
		failed	step 77
20	Manually busy the link by typing >BSY link_no Press the Enter key.		

Running a C7BERT for high-speed links (continued)

where

link_no

is the number of the link you want to test (0 to 15)

If the BSY command	Do
passed	step 21
failed	step 77

- 21** Return the link to service by typing

>RTS link_no

Press the Enter key. This action places the link into the SysB/DAct state.

where

link_no

is the number of the link you want to test (0 to 15)

If the RTS command	Do
passed	step 22
failed	step 77

- 22** Enter the C7BERT level of the MAP display by typing

>C7BERT

Press the Enter key.

If you want to	Do
perform a local loopback	step 23
perform a remote loopback	step 24
perform a far-end DS-1 ESF loop-back	step 32
run C7BERT	step 38
enable the high-speed signaling terminal (HST) to scan for control codes	step 62
perform an intermediate loopback C7BERT test	step 37

- 23** Activate a local loopback by typing

>PMLLOOP LOCON link_no

Press the Enter key.

Running a C7BERT for high-speed links (continued)

where

link_no

is the number of the link you want to test (0 to 15)

If the response is	Do
Link 1: Loopback Local on step 38 completed	
Link 1: Failed - PML00P <Lo- step 26 cal|Remote|Enable> is al- ready active	
Link 1: Failed - C7BERT al- step 31 ready active on this link	
Link 1: Failed - Link state step 16 is invalid for HSL PMLoop. Link must be SysB and DAct	
anything else	step 77

24 Activate a remote loopback by typing

>PML00P RMTON link_no

Press the Enter key.

where

link_no

is the number of the link you want to test (0 to 15)

Note: A remote loopback establishes a loopback for the far-end. The far-end must run C7BERT to test the quality of the link.

If the response is	Do
Link 1: Loopback Re- step 25 mote On completed	
Link 1: Failed - PM- step 26 LOOP <Local|Re- mote|Enable> is already active	
Link 1: Failed - step 31 C7BERT already active on this link	

Running a C7BERT for high-speed links (continued)

	If the response is	Do
	Link 1: Failed - Link state is invalid for HSL PMLoop. Link must be SysB and DAct	step 16
	anything else	step 77
25	Inform personnel at the far end that the remote loopback is active and the far end personnel can begin their tests. After the far-end tests are finished, release the loopback by typing >PMLOOP RMTOFF link_no Press the Enter key. <i>where</i> link_no is the number of the link you entered in PMLOOP command	
	If the PMLOOP command	Do
	passed and you want to perform-more C7BERT procedures	step 22
	passed and you do not want to perform C7BERTprocedures	step 67 other
	failed	step 77
26	Enter the PM level of the MAP display by typing >PM Press the Enter key.	
27	Post the HLIU by typing >POST HLIU dliu_no Press the Enter key.	
28	Clear the loopback state by typing >LOOPBK C Press the Enter key.	
	If the response is	Do
	LoopBk passed	step 29
	anything else	step 77

Running a C7BERT for high-speed links (continued)

- 29 Enter the C7LKSET level of the MAP display by typing

>MAPCI;MTC;CCS;CCS7;C7LKSET

Press the Enter key.

- 30 Enter the C7BERT level of the MAP display by typing

>C7BERT

Press the Enter key.

If you want to	Do

activate a local loopback	step 23

activate a remote loopback	step 24

- 31 Stop the existing HSL C7BERT by typing

>STOP link_no

Press the Enter key.

where

link_no

is the number of the link you entered in step 23 or 24

Note: The STOP command overrides any preset stop time without warning.

If you want to	Do

activate a local loopback	step 23

activate a remote loopback	step 24

- 32 Contact personnel at the far end to confirm that the far-end signaling terminal is able to receive control codes.

Note: If the equipment type is DMS, personnel at the far-end can determine the signaling terminal status as follows:

- Type *PM* and press the Enter key to access the PM level of the MAP display.
- Type *POST HLIU dliu_no* and press the Enter key to post the HLIU.
- Type *LOOPBK S* and press the Enter key to display the terminal status.

Users of equipment that is not DMS should contact their next level of support to obtain the procedures for their equipment.

- 33 Activate the far-end DS-1 ESF loopback from your end by typing

>CARLOOP START link_no loopback_type

Press the Enter key.

where

link_no

is the number of the link you want to test (0 to 15)

Running a C7BERT for high-speed links (continued)

loopback_type

indicates if the loopback is line (R) or payload (P)

Example input:

>CARLOOP START 1 R

- 34** Your next step depends on the response.

If the response is	Do
Link nn: DS-1 ESF Loop ON complete Carrier line loopback at far-end paddle-board	step 38
Link nn: Failed - C7BERT already active on this link	step 35
Link 1: Failed - Far-end DS-1 ESF already active on this link	step 36
Link nn: Failed - Has not gone into loopback.	step 77
anything else	step 77

- 35** Stop the existing HSL C7BERT by typing

>STOP link_no

Press the Enter key.

where

link_no

is the number of the link you entered in step 33

Note: The STOP command overrides any preset stop time without warning.

If the response is	Do
Link 1: C7BERT stopped	step 33
anything else	step 77

- 36** Remove the far-end DS-1 ESF loopback already applied by typing

>CARLOOP STOP link_no

Press the Enter key.

where

link_no is the number of the link you entered in step 33	
If the response is	Do
CARLoop stop nLink n: DS-1 ESF OFF complete	step 33
anything else	step 77
37	Contact personnel at the intermediate point and request a loopback.
38	Start the HSL C7BERT by typing >START link_no Press the Enter key. <i>where</i> link_no is the number of the link you want to test (0 to 15)
If the response is	Do
Link n: C7BERT started	step 39
Link n:Failed - Link state is in- valid for HSL C7BERTLink must be SysB/DAct or SysB/CAR	step 16
anything else	step 77
39	Display the test results of the HSL C7BERT by typing >QUERY link_no PR Press the Enter key. <i>where</i> link_no is the number of the link being tested (0 to 15) <i>Example of a MAP response:</i>

Running a C7BERT for high-speed links (continued)

```

query 1 pr
Link 1: C7BERT query
Run Time      :      662   Err Free Secs:      662
Tx Frames     :    19016   Rx Sync Errs :      0
Rx Frames     :    19019   Rx Bad Frames:      0
Rx Bit Errors :      0     Rx Bits       : 38931896
Bit Err Rate  : 0 x 10-15

```

If the response is	Do
a display of HSL C7BERT statistics	step 40
anything else	step 77

- 40** Determine if any Tx frames were transmitted.

Note: The number of frames transmitted appears to the right of the Tx Frames header of the MAP display. In the example in step 39, the number of frames transmitted is 19 016 .

If	Do
any Tx frames were transmitted	step 41
no Tx frames were transmitted	step 77

- 41** The test is running correctly.

Test results generate when:

- the periodic reporting function is active
- operating company personnel stop the test manually
- the test stops automatically at a pre-set time

Note: If a switch restart occurs when an HSL C7BERT is running on a link, the test stops automatically. The test also stops automatically if the HLIU associated with the link fails.

If	Do
you want to request periodic reports	step 53
you want to stop the test manually	step 57
you want to stop the test automatically at a pre-set time	step 42
you want to inject bit errors	step 47

Running a C7BERT for high-speed links (continued)

- 42** Determine if a stop time has been set by typing
>SETSTOP link_no STATUS
Press the Enter key.
where
link_no
is the number of the link (0 to 15) on which the HSL C7BERT is running
- | If the response is | Do |
|------------------------------------|---------|
| Link nn: Stop time set at: time | step 43 |
| Link nn: No stop time has been set | step 44 |
| anything else | step 77 |
- 43** Clear the stop time by typing
>SETSTOP link_no CLEAR
Press the Enter key.
where
link_no
is the number of the link on which the HSL C7BERT is running
- | If the response is | Do |
|--------------------|---------|
| Stop time cleared | step 44 |
| anything else | step 77 |
- 44** Set the new stop time by typing
>SETSTOP link_no SET day hours minutes
Press the Enter key.
where
link_no
is the number of the link (0 to 15) on which the HSL C7BERT is running
day
is the day on which you want the test to stop automatically (MON, TUE, WED, THU, FRI, SAT, or SUN)
hours
is the hour at which you want the test to stop automatically (0 to 23)
minutes
is the minute at which you want the test to stop automatically (00 to 59)
Example input:
>SETSTOP 3 SET MON 10 30

Running a C7BERT for high-speed links (continued)

Note: The example entry sets the stop time for link 3 on Mondays at 10:30 a.m.

	If the response is	Do
	Link nn: Stop time set at: step 45 19xx/yy/zz hh:mm:00.000 ddd	
	anything else	step 77
45	Determine if the stop time is correct.	
	If the stop time is	Do
	correct	step 46
	incorrect	step 43
46	Wait until the stop time. Go to step 58.	
47	Display HSL C7BERT results by typing >QUERY link_no PR Press the Enter key. <i>where</i> link_no is the number of the link being tested (0 to 15) <i>Example of a MAP response:</i> Link 1: C7BERT query Run Time : 1224 Err Free Secs: 1133 Tx Frames : 32538 Rx Sync Errs : 0 Rx Frames : 32580 Rx Bad Frames: 1 Rx Bit Errors: 0 Rx Bits : 66673662 Bit Err Rate : 1 x 10 ⁻⁸	
	If the response is	Do
	a display of test statistics	step 48
	anything else	step 77
48	Record the number of Rx bit errors. Note: In the example in step 47, the number of bit errors received appears to the right of Rx bit errors.	
49	Inject bit errors by typing >INJERR link_no	

Running a C7BERT for high-speed links (continued)

Press the Enter key.

where

link_no

is the number of the link you tested in step 38

Example of a MAP response:

injerr 1

If the response is	Do
Link 1: INJECT ERROR completed	step 50
Link n:Failed - C7BERT is not active on this link	step 38
anything else	step 77

- 50** Display the result of injecting bit errors by typing

>QUERY link_no PR

Press the Enter key.

where

link_no

is the number of the link that you want to test (0 to 15)

Example of a MAP response:

```
Link 1: C7BERT query
Run Time      :      1134   Err Free Secs:      1133
Tx Frames     :      32568  Rx Sync Errs :         0
Rx Frames     :      32570  Rx Bad Frames:         1
Rx Bit Errors:         1    Rx Bits       : 66670792
Bit Err Rate  : 1 x 10-8
```

If the response is	Do
a display of test statistics	step 51
anything else	step 77

- 51** Determine the result of injecting bit errors.

Note: In the example in step 50, the number of bit errors received appears to the right of Rx Bit Errors.

Running a C7BERT for high-speed links (continued)

- 52** Subtract the result of the HSL C7BERT recorded in step 48 from the result obtained in step 50. This action checks for correct bit error rate (BER) circuit operation.

If the difference is	Do
1	step 41
anything else	step 77

- 53** Determine if periodic reports have been requested by typing

>REPORT link_no STATUS

Press the Enter key.

where

link_no

is the number of the link (0 to 15) on which the HSL C7BERT is running

If the response is	Do
Link nn: Automatic query re- porting set at: mm times per hour	step 54
Link nn: Automatic query re- porting is not active	step 55
anything else	step 77

- 54** Clear the previous report interval by typing

>REPORT link_no OFF

Press the Enter key.

where

link_no

is the number of the link on which the HSL C7BERT is running

MAP response:

Link nn: Automatic query reporting has been terminated

- 55** Set the number of reports per hour by typing

>REPORT link_no ON number

Press the Enter key.

where

link_no

is the number of the link (0 to 15) on which the HSL C7BERT is running

number

is the number of reports per hour (1 to 12)

Running a C7BERT for high-speed links (continued)

Example input:

>REPORT 1 ON 6

	If the response is	Do
	Link nn: Report interval set at:nn times per hour	step 56
	anything else	step 77
56	Determine if the report interval is correct.	
	If the interval is	Do
	correct	step 41
	incorrect	step 54
57	Stop the HSL C7BERT by typing >STOP link_no Press the Enter key. <i>where</i> link_no is the number of the link (0 to 15) on which the HSL C7BERT is running Note: The STOP command overrides any preset stop time without warning.	
	If the response is	Do
	Link 1: C7BERT stopped	step 58
	anything else	step 77
58	Give the results to the personnel responsible for the next level of support. Your next step depends on the instructions received from your next level of support.	
	If	Do
	the far-end DS-1 loopback is established	step 60
	the local loopback is established	step 59
	an intermediate loopback is established	step 61
59	Remove the local loopback by typing >PMLLOOP LOCOFF link_no Press the Enter key.	

Running a C7BERT for high-speed links (continued)

where

link_no

is the number of the link you tested (0 to 15)

	If the response is	Do
	pmloop off and more tests are required	step 22
	pmloop off and you want to exit from C7BERT	step 67
	anything else	step 77
60	Remove the far-end DS-1 ESF loopback by typing >CARLOOP STOP link_no Press the Enter key.	
	where	
	link_no is the number of the link you tested (0 to 15)	
	If the response is	Do
	Link n: DS-1 ESF OFF complete and more tests are required	step 22
	Link n: DS-1 ESF OFF complete and you want to exit C7BERT	step 67
	anything else	step 77
61	Tell personnel at the intermediate point to remove the intermediate loopback.	
	If you want to	Do
	run more tests	step 22
	exit from C7BERT	step 67
62	Enter the PM level of the MAP display by typing >PM Press the Enter key.	
63	Post the HLIU by typing >POST HLIU dliu_no Press the Enter key.	
64	Enable the HST to scan for control codes by typing >LOOPBK E	

Running a C7BERT for high-speed links (continued)

Press the Enter key.

If the response is	Do
loopbk passed	step 65
anything else	step 77

- 65** Wait for the far end to finish testing. When far-end testing is complete, clear the loopback state by typing

>LOOPBK C

Press the Enter key.

If the response is	Do
loopbk passed	step 66
anything else	step 77

- 66** Enter the C7LKSET level of the MAP display by typing

>MAPCI;MTC;CCS;CCS7;C7LKSET

Press the Enter key.

If	Do
more tests are required	step 22
you want to exit C7BERT	step 67

- 67** Quit the C7BERT level of the MAP display by typing

>QUIT

Press the Enter key.

- 68** Activate the link on which the HSL C7BERT was running by typing

>ACT link_no

Press the Enter key.

where

link_no

is the number of the link (0 to 15)

If the ACT command	Do
passed	step 69
failed	step 77

Running a C7BERT for high-speed links (continued)

- 69** Determine the synchronization state of the link.
- Note:** The synchronization state appears under the Sync Stat header of the MAP display.
- | If the synchronization state is | Do |
|---------------------------------|---------|
| Sync | step 76 |
| anything else | step 70 |
- 70** Wait eight minutes, then continue the procedure.
- 71** Determine the synchronization state of the link.
- | If the synchronization state is | Do |
|--|---------|
| SysB, and you have not asked the far-end office to activate the link | step 73 |
| SysB, and you have asked the far-end office to activate the link | step 72 |
- 72** Use office records to determine which far-end office connects to the linkset posted in step 4.
- 73** Contact the far-end office. Tell the personnel there that you will reactivate the link.
- 74** Tell personnel at the far-end office to activate the link.
- 75** Activate the link from your end by typing
- >ACT link_no**
- Press the Enter key.
- where*
- link_no**
is the number of the link you activated in step 68
- | If the ACT command | Do |
|--------------------|---------|
| passed | step 76 |
| failed | step 77 |
- 76** Uninhibit the link by typing
- >UINH link_no**
- Press the Enter key.
- where*

Running a C7BERT for high-speed links (end)

link_no

is the number of the link you activated in step 68

If the UINH command	Do

passed	step 78
failed	step 77

77 For additional help, contact the personnel responsible for the next level of support.

78 You have completed this procedure.

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