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DMS-100 Family

North American DMS-100

Recovery Procedures

LEC0015 and up Standard 14.02 May 2001

NORTEL NETWORKS™

DMS-100 Family

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Contents

Recovery Procedures

About this document

How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the next software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but rereleased in the same software release cycle. For example, the second release of a document in the same software release cycle is 01.02.

To determine which version of this document applies to the software in your office and how documentation for your product is organized, check the release information in *Product Documentation Directory,* 297-8991-001.

References in this document

The following documents are referred to in this document:

- *Alarm Clearing and Performance Monitoring Procedures*
- *Bellcore Format Automatic Message Accounting Reference Guide*, 297-1001-830
- *Card Replacement Procedures*
- *DMS-100 Family Commands Reference Manual*, 297-1001-822
- *Log Report Reference Manual*
- *Magentic Tape Reference Manual,* 297-1001-118
- *Operational Measurements Reference Manual*
- *Routine Maintenance Procedures*

As of NA0011 (LEC and LET) and EUR010 (EUR) releases, any references to the data schema section of the *Translations Guide* will be mapped to the *Customer Data Schema Reference Manual*.

What precautionary messages mean

The types of precautionary messages used in Nortel Networks documents include attention boxes and danger, warning, and caution messages.

An attention box identifies information that is necessary for the proper performance of a procedure or task or the correct interpretation of information or data. Danger, warning, and caution messages indicate possible risks.

Examples of the precautionary messages follow.

ATTENTION - Information needed to perform a task

ATTENTION

If the unused DS-3 ports are not deprovisioned before a DS-1/VT Mapper is installed, the DS-1 traffic will not be carried through the DS-1/VT Mapper, even though the DS-1/VT Mapper is properly provisioned.

DANGER - Possibility of personal injury

DANGER

Risk of electrocution

Do not open the front panel of the inverter unless fuses F1, F2, and F3 have been removed. The inverter contains high-voltage lines. Until the fuses are removed, the high-voltage lines are active, and you risk being electrocuted.

WARNING - Possibility of equipment damage

WARNING

Damage to the backplane connector pins

Align the card before seating it, to avoid bending the backplane connector pins. Use light thumb pressure to align the card with the connectors. Next, use the levers on the card to seat the card into the connectors.

CAUTION - Possibility of service interruption or degradation

CAUTION
Possible loss of service
Before continuing, confirm that you are removing the card from the inactive unit of the peripheral module. Subscriber service will be lost if you remove a card from the active unit.

How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

Input prompt (>)

An input prompt (>) indicates that the information that follows is a command:

```
>BSY
```

Commands and fixed parameters

Commands and fixed parameters that are entered at a MAP terminal are shown in uppercase letters:

```
>BSY CTRL
```

Variables

Variables are shown in lowercase letters:

```
>BSY  CTRL  ctrl_no
```

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

```
FP 3 Busy CTRL 0: Command request has been submitted.

FP 3 Busy CTRL 0: Command passed.
```

1 System recovery controller

This chapter describes the operation of the system recovery controller (SRC). The subsequent sections explain the operation of the SRC as follows:

About the system recovery controller on this page describes the SRC functions, triggers, and dependencies.

SRC recovery methods in this document describes how the SRC recovers PMs, and lists the PMs that the SRC recovers.

How to monitor SRC operation in this document describes the responses on the MAP (maintenance and administration position) display when the SRC is recovering a node. This section also describes the logs generated during node recovery, SRC failure, and how to manually override the SRC.

About the system recovery controller

The SRC coordinates recovery activities in a DMS switch. The SRC optimizes recovery through the correct use of resources and automatic operation.

The SRC coordinates the recovery of nodes in the DMS switch so that when one node is dependant on another for operation, the node which is depended upon must be inservice before a recovery attempt is made on the dependant node. As it progresses through the dependancy hierarchy, the SRC schedules recovery activities to run at appropriate times, thereby reducing the length of outages.

The SRC makes several attempts to recover a node. During each recovery attempt, the SRC performs a more detailed analysis. If necessary, the SRC reloads a node's software and returns the node to service as part of a full recovery process. When the SRC reloads a node, removal of the node from service occurs for a period of time, so the SRC only reloads nodes when required.

SRC functions

The SRC coordinates the recovery activities of different subsystems outside the DMS-core, also refered to as the computing module (CM).

The subsystems include the following:

- the message switch (MS)
- network (JNET or ENET)
- series I, II, and III peripheral modules (PM).

Figure Figure 1-1, "System recovery controller" on page 1-3 shows how the SRC interfaces with the DMS-core and with the subsystems.

The SRC performs the following functions:

- The dependency manager of the SRC enforces inter-subsytem dependencies. Before the SRC recovers a node, the subsystems, the subsystems that the node depends on must be operating.
- The group manager groups nodes for broadcast loading in conditions where the process applies. The SRC sends common commands to a group of nodes at the same time, instead of one after another.
- The concurrent activity manager balances the amount of recovery work against other activities that occur on the switch. The SRC attempts to recover as many critical subsystems as the CM allows.
- The SRC initiates recovery applications and monitors each step in the application to make sure that the application ends quickly.

The SRC coordinates two separate activities for series II XMS-based PMs (XPM) and line concentrating modules (LCM):

- system recovery of PM nodes after core restart or core switch of activity through the use of the dependency manager

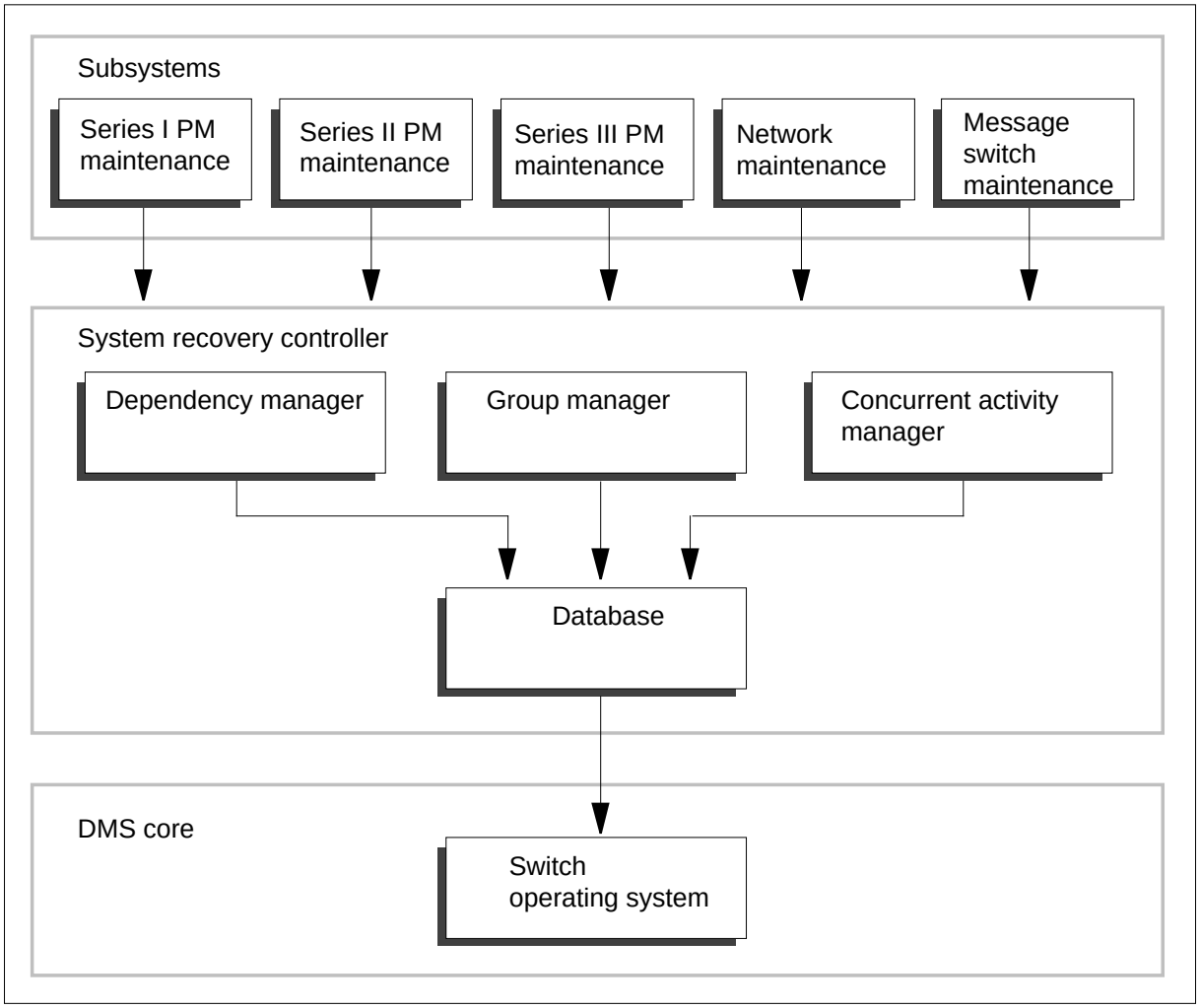
  Note: System recovery of DLMs and IPEs does not always occur on core switch of activity.

- loading of PM units after system maintenance detects a load loss through the use of the group manager

For LCMs, an audit verifies the node status of each LCM unit before the execution of the recovery activity. If both units are SysB, the audit executes and forces the units into service. If one unit is SysB, an evaluation of the fault occurs and the SRC attempts a recovery. A recovery attempt occurs a maximum of three times in 1-min intervals.

One connection is present between the two activities that the SRC coordinates. The connection is that PM maintenance initiated through the dependency manager can lead to loading of one or more PM units.

Figure 1-1 System recovery controller



Required SRC conditions for PM recovery

The PM recovery that the SRC coordinates requires the following conditions:

- all equipment must have power
- for automatic broadcast loading, series II XPMs must have NT6X45BA or newer processor cards installed

  Note: Series II XPMs with pre-NT6X45BA control cards are loaded one by one instead of in groups for broadcast loading.

- all PM load names (including series I PM load names) must be entered in table PMLOADS

SRC triggers

The following events trigger the SRC to query and, if necessary, begin recovery of subsystems:

- warm restart of the core
- cold restart of the core
- reload-restart of the core
- loss of load in a PM
- manual RESTART SWACT, ABORT SWACT, or NORESTART SWACT of the core

Additional SRC triggers to load series II XMS-based PMs again

There are four additional triggers for the SRC to reload series II XPMs:

- the XPM reports a memory parity error during a periodic audit by the switch operating system
- the ROM/RAM query step in the series II XPM return-to-service task detects a loss of load
- the initialization of the series II XPM during a return-to-service task fails two consecutive times. This failure indicates a problem with the software load
- the ROM/RAM query step in the series II XPM system busy task detects a load loss

Core restarts

During a restart, the switch operating system initializes again. Reinitialization restores the operating system software and the subsystems outside the DMS-core to a known, steady state.

A system restart includes initialization of the modules in the CM, MS, network, and PMs. A system restart also includes the restoration of services.

The period of a restart is the time taken to recover the whole system to the point that all services are available again.

The symbol A1 flashes on the reset terminal interface (RTIF) when initialization of the software in the CM is complete. The recovery for the rest of the system starts after the flashing A1 appears.

The following list describes how each type of restart affects calls in progress and billing data:

- A warm restart of the core is the least severe of restart. Audits of XPMs occur. The XPMs remain in service during a warm restart. Calls in progress that reached the talking state continue. Any calls that did not reach the talking state are disconnected. Any calls that disconnect during the restart are disconnected after the restart is complete and the system records billing data.
- A cold restart of the core is more severe than a warm restart. Audits of XPMs occur. The XPMs remain in service during a cold restart. Calls that reach the talking state retain the connections during the restarts. The calls can disconnect if their connections are used again by new calls after the restart . There is no record made of calls in progress during a cold restart and no billing data is recorded for these calls. A manual cold restart occurs on DTCs while the equipment is in service. This manual cold restart means that all calls are dropped, but the two units are removed from service one at a time. This process minimizes the length of the XPM outage.
- A reload-restart of the core is the most severe restart. During a reload-restart, all PMs initialize again. All calls in progress are dropped. Loss of billing data for the dropped calls occurs.

Loss of load in a PM

The removal of a card loaded with software causes a loss of load in a PM. The interruption of power to a card loaded with software also causes a loss of load in a PM. A PM becomes system busy when a loss of load occurs. The SRC begins recovery when system maintenance detects a loss of load.

Manual commands

The SRC initializes PMs again after the use of one of the following manual commands during an upgrade of BCS software:

- RESTART SWACT
- ABORT SWACT
- NORESTART SWACT

SRC dependency manager

For some recovery actions on objects to occur, other objects must be in a given state to support the action. The dependency manager of the SRC uses the set

of dependencies that applies to the type of restart to manage object dependencies . The SRC dependency manager prevents failure caused by early starts. The SRC dependency manager also reduces recovery times.

An object is any entity in the DMS switch. An object can be:

- physical (for example, an ENET plane, an XPM, an IPML, or a set of lines)
- a service (for example, line trunk server [LTS] call processing)
- software (for example, an entry code)
- an event, (for example, the initialization of core software)

Management of dependencies

The action on the dependent object must not proceed until the object depended on is in the required state. The dependency manager makes sure that the object satisfies the requirements for an action on an object, before the action proceeds.

Dependencies are specified for each action for each object. Examples of dependencies in DMS include

- one part of the software that must initialize before another
- ordered initialization of nodes to make sure that paths to the nodes are in service before a recovery attempt of a node occurs
- data that must download to a node after other nodes return to service
- the recovery of a service in one node after the recovery of other parts of the service in other nodes

A dependency can change when for one type of recovery needs it but not another. For example, an action can have different dependencies in different restart types. The SRC provides the applications with the means of indicating which dependencies are applicable.

SRC group manager

PMs can be grouped for bulk maintenance action. The group manager coordinates the PM groups. The group manager designates one PM as the “seed" PM in a group. The CM sends messages to the seed PM. The seed PM forwards the messages to the other PMs in the group.

Note: Series I PMs do not support broadcast loading. The group manager does not group the series I PMs.

The group manager uses several standards when it groups PMs for a bulk action. For example, when the SRC broadcast loads to nodes, the group manager can use the following:

- a group of PMs with the same node type
- a group of PMs with the same load file name
- a group of PMs with the same loading method

How to group series II XMS-based PMs

The group manager uses the following standards when it groups series II XPMs together for broadcast loading:

- the load file name
- the CMR (class modem resource) file name
- the presence of 6X45BA or higher controller cards

For example, two XPMs can have the same load file name and have NT6X45BA controller cards, but have different CMR file names. The group manager puts these two XPMs in different groups.

The XPMs that cannot be in the same group with other XPM units for broadcast loading are single-loaded. The XPMs are single-loaded when the XPM units do not have the hardware to support broadcast loading. The XPMs are also single-loaded when the XPMs cannot be in a group with other units during dynamic grouping. The group manager only groups the XPMs that have NT6X45BA or higher controller cards. The XPMs that do not have NT6X45BA or higher controller cards are not in the same group as other XPMs. This condition occur even if the other XPMs have the same load files. The SRC continues to coordinate single loading for purposes of concurrency management.

Static and dynamic groups

You can identify PMs in the same group from datafill. The datafill specifies the load file names and hardware configurations of the PMs. The system maintains these static groups automatically over time as the datafill changes. During recovery, the SRC forms dynamic groups from the subgroups based on which elements require recovery and availability of resources to perform the recovery.

Broadcast loading

Broadcast loading is a bulk action. Broadcast loading can operate on more than one PM at the same time. To save time, the SRC performs an action on a group of PMs instead of many separate PMs.

Automatic broadcast loading sends a request to load software to several PMs at the same time.

After the SRC receives a request to load a static group member, the SRC builds a dynamic group. The SRC uses the combination of the following two methods to form the group:

- The SRC queries the group members for loss of load with the ROM/RAM query message. The SRC only queries XPMs with NT6X45BA or higher controller cards
- The SRC waits for autoload requests from the group members over a short period of time. The SRC submits the autoload requests after the equipment fails to return to service. The SRC identifies the cause of the failure as a load loss or faults in the load.

The system notifies the SRC when a system-busy unit requires loading. The SRC group manager creates a group of PMs that can be broadcast-loaded.

When the SRC forms a group, it coordinates the broadcast loading. If a PM has only one unit that requires broadcast loading, the PM drops from the group. The SRC submits a normal load request for the unit. To save system resources, the SRC uses broadcast loading even when the group contains only one PM. Broadcast loading saves system resources because when both units require broadcast loading, unit 0 sends the load messages to unit 1.

If the SRC does not recover a group of PMs, the SRC attempts automatic broadcast loading again. If the second attempt fails, the SRC attempts to recover the PMs one by one.

Note: The SRC performs automatic broadcast loading on the following PMs:

- XPMs (data entered in table LTCINV)
- line concentrating modules (LCM) (data entered in table LCMINV)
- digital line modules (DLM) (data entered in table DLMINV)
- IPEs (data entered in table IPEINV)

There is a limit of eight broadcast load groups in a DMS switch at any one time.

Note 1: Series I PMs do not support broadcast loading.

Note 2: LCMs/DLMs/IPEs that subtend remote cluster controller (RCC) can be broadcast-loaded only with other LCMs/DLMs/IPEs that subtend RCCs. LCMs/DLMs/IPEs that subtend line group controller/ line trunk controller (LGC/LTC) XPMs can be broadcast-loaded only with other LCMs/DLMs/IPEs that subtend LGC/LTC XPMs. LCMs that subtend RCCs and LCMs/DLMs/IPEs that in turn subtend LGC/LTC XPMs cannot be broadcast-loaded together.

Limit of concurrent load activities

The SRC monitors and controls the number of concurrent PM loading tasks. Single loading of XPMs does not use the grouping capability of the SRC. The SRC continues to provide control in the form of concurrency management.

The system can use all of its resources to load other units or groups. If the system uses all resources, the SRC queues single units and groups of PMs, while it waits for resources. The SRC can load eight load sets at the same time. A set is a single unit or several units that are in a group.

While the units wait in the queue for resources, the MAP display shows a system recovery progress message for each unit in the queue. The units or groups in the queue start to load when resources become available. Groups have priority over single units when the system allocates resources.

Example of automatic broadcast loading

This section consists of examples of how automatic broadcast loading recovers series II PMs from dead and partly dead offices.

Dead office

A dead office occurs when the -48 V dc A and B power feeds to the power distribution centers (PDC) become lost or interrupted. The loss of power causes a complete switch outage. When the system restores power, the following actions occur:

- The DMS-core reboots.
- The reboot of the DMS-core triggers a reload restart of the CM and MS and ENET (if applicable) software.
- The reload-restart of the DMS-core starts the SRC.
- The SRC monitors the recovery of the MS and network to determine when PM recovery can start. The SRC determines when PM recovery can starts, based on dependencies that the dependency manager enforces.
- When the SRC begins PM recovery, the SRC notes the absence of a software load in the PM.
- The SRC adds the PM to a group for broadcast loading.

- When all PMs that need loading are in the group, or 6 min after the first PM joined the group, the SRC begins the broadcast-load.

  Note: If the system requires more than eight automatic broadcast loading requests at the same time, the concurrent activity manager queues the excess.

- The PM software in the DMS-core starts the return-to-service task when broadcast loading is complete. The SRC single loads PMs that failed to broadcast load.

Partial outage

A partial outage occurs when one or more PM frames lose DC power. After power returns to the PM, the following actions occur:

- The PM maintenance base software on the DMS core detects the absence of a software load in a PM.
- The SRC queries other PMs that share the same grouping criteria to see if they also need reloading.
- The maintenance base software for the PM on the DMS-core triggers the SRC to group these PMs for broadcast loading.
- When all PMs that need loading are in the group, or 6 min after first PM joined the group, the SRC begins the broadcast-load.

  Note: If the system requires more than eight automatic broadcast loading requests at the same time, the concurrent activity manager queues the excess.

- The PM software in the DMS-core starts the return-to-service task when broadcast loading is complete. The SRC single loads PMs that failed to broadcast load.

Automatic single loading

The SRC single loads PMs that the SRC cannot group for broadcast loading.

Note: The SRC single loads series II XPMs that have pre-NT6X45BA controller cards and are in table LTCINV.

SRC recovery methods

The SRC recovers PMs by either single- or broadcast-loading. However, the type of recovery depends on the type of PM and the version of controller card in the PM. Some features of the SRC do not work on specified series II XPMs with pre-NT6X45BA controller cards.

Series I PMs that the SRC automatically recovers

The SRC automatically single loads the following PMs, if these PMs do not carry traffic, regardless of the type of controller card:

- Austrian digital line module (ATM)
- digital carrier module Austria (DCA)
- digital carrier module Austria (DCM250)
- digital carrier module (DCM)
- digital carrier module (DCMT)
- digital echo suppressor (DES)
- digital line module (DLM)
- digital trunk module (DTM)
- integrated services module (ISM)
- intelligent peripheral equipment (IPE)
- line digital trunk (LDT)
- line module (LM)
- maintenance (trunk) module Austria (MMA)
- maintenance trunk module (MTM)
- maintenance trunk module Austria (MTMA)
- office alarm unit (OAU)
- package trunk module (PTM)
- remote carrier module SLC-96 (RCS)
- remote concentrator terminal (RCT)
- remote digital terminal (RDT (IDT))
- remote line module (RLM)
- small remote unit (SRU)
- service trunk module (STM)
- trunk module (TM)
- trunk module 2 (TM2)
- trunk module 4 (TM4)
- trunk module 8 (TM8)

Series II PMs that the SRC automatically recovers

The SRC automatically groups and broadcast loads the following PMs, if the C-side PMs support broadcast-loading. To support broadcast loading, the

C-side PMs must have an NT6X45BA or higher controller card. To support broadcast loading, you must enter data into the correct tables.

- Austrian LCM (ALCM)
- enhanced LCM (ELCM)
- international LCM (ILCM)
- line concentrating module (LCM)
- enhanced LCM (LCME)
- LCM for ISDN offices (LCMI)

Series II XMS-based PMs that the SRC automatically recovers

The SRC automatically recovers the following series II XPMs, if they do not carry traffic. If an NT6X45BA controller card is present, the SRC groups and broadcast loads these XPMs. If a pre-NT6X45BA controller card is present, the SRC single loads these XPMs. The SRC single loads DLMs and IPE units that cannot group for broadcast loading.

- Austrian digital trunk controller (ADTC)
- Austrian line group controller (ALGC)
- digital line module (DLM)
- digital trunk controller (DTC)
- ISDN digital trunk controller (DTCI)
- intelligent peripheral equipment (IPE)
- international digital trunk controller (IDTC)
- international line group controller (ILGC)
- international line trunk controller (ILTC)
- line group controller (LGC)
- ISDN line group controller (LGCI)
- line trunk controller (LTC)
- ISDN line trunk controller (LTCI)
- PCM30 digital trunk controller (PDTC)
- PCM30 line group controller (PLGC)
- subscriber carrier module-100 rural (SMR)
- subscriber carrier module-100S (SMS)
- subscriber carrier module-100 urban (SMU)
- Turkish digital trunk controller (TDTC)
- Turkish line trunk controller (TLTC)

- Turkish line group controller (TLGC)
- TOPS message switch (TMS)

The system single loads the following series II XPMs regardless of the type of NT6X45 card and without assistance of the SRC:

- Austrian RCC (ARCC)
- emergency standalone (ESA)
- RCC with ESA forced down option (FRCC)
- message switch and buffer (MSB)
- remote cluster controller (RCC)
- RCC for ISDN offices (RCCI)
- dual RCC-CPM based domestic (RCC2)
- RCC offshore (RCO2)
- SONET RCC (SRCC)
- TOPS message switch (TMS)
- Turkish RCC (TRCC)

Series III LPP-based PMs that the SRC automatically recovers

The SRC groups and broadcast loads the following series III LPP-based PMs:

- link interface module (LIM)
- Common Channel Signaling 7 (CCS7) link interface unit (LIU7)
- high-speed link interface unit (HLIU)
- high-speed link router (HSLR)
- CCS7 server (SVR7)
- network interface unit (NIU)
- X.25/X.75 link interface unit (XLIU)
- Ethernet interface unit (EIU)
- frame relay interface unit (FRIU)
- voice processing unit (VPU)

How to monitor SRC operation

You can use the MAP terminal and log reports to monitor the SRC recovery of nodes. This section describes the indicators that the SRC uses to communicate the status of the automatic recovery of a subsystem. The SRC communicates when the automatic recovery is pending, in progress, complete, or failed. The SRC also communicates when manual attempts to override the SRC started.

MAP terminal displays

You can view the progress of the automatic recovery of the complete system or separate nodes at the SRSTATUS level of the MAP display. To view the progress, you can also post the PMs at the PM level of the MAP display.

The SRSTATUS level of the MAP display arranges the recovery information into recovery views. The recovery views are arranged hierarchically from the system level at the top, to individual nodes (or groups of nodes) at the lower levels.

SRSTATUS level commands

The following commands are available at the SRSTATUS level of the MAP display.

VIEW

Use this command to navigate between the different recovery views. The syntax for the command is:

```
>VIEW  view_name
```

where

view_name
is one of SYSTEM, UP, OTHER, or a character string thatcorresponds to the name of a registered recovery view that isnot at the bottom of the order.

LIST

This command lists all nodes in the specified recovery view. You can use the state option to list all nodes in the specified recovery view in the specified recovery state. The syntax for the command is:

```
>LIST  <view_name>  <recovery_state>
```

where

view_name
is one of SYSTEM, UP, OTHER, or a character stringthat corresponds to the name of a registered recoveryview that is not at the bottom of the hierarchy

recovery_state
is one of PEND, INPROG, COMP, FAILED, orNOTNEEDED

HELP

This command shows help information for the SRSTATUS level of the MAP display.

QUIT

This command exits the SRSTATUS level of the MAP display.

The MAP displays on the following pages show the different views available at the SRSTATUS level of the MAP display.

Figure 1-2 System recovery controllerSRSTATUS level MAP display - SYSTEM view

```
    CM     MS    IOD     Net       PM      CCS     Lns     Trks     Ext     APPL
     •      •     •     6LCM      2 RSC     •    110 GC      •       •       •
                         *C*       *C*            *C*
 SRSTATUS
          OVERALL STATUS Pend:  18%        InProg: 9%   Comp: 70%   Fail: 3%
 0  Quit   VIEW: SYSTEM                                          11:52:34
 2  View_       Pend InPrg  Comp    Fail           Pend InPrg  Comp    Fail
 3  List_ MS     0    0      2       0     IOD      5    5      30      2
 4        NET    0    0      6       0     Other    21   3      13      3
 5        SER1   0    1      6       0
 6        SER2   1    1      60      1
 7        SER3   11   8      30      1
 8
 9        SRSTATUS:
10
11
12
13
14
15
16
17
18
   OPERATOR
Time  11:52
```

The preceding example shows the SYSTEM view of the SRSTATUS level MAP display. From the SYSTEM view, you can list the status of the MS or network (JNET or ENET). From the SYSTEM view, you can access the SER1, SER2, and SER3 PM views.

The following is an example response to the command "**LIST MS**":

```
MS 0                 Recovery complete
MS 1                  Recovery failed
```

The following is an example response to the command "**LIST JNET**":

```
JNET 0 0             Recovery complete
JNET 1 0             Recovery complete
JNET 0 1             Recovery failed
JNET 1 1             Recovery failed
JNET 0 2             Recovery complete
JNET 1 2             Recovery complete
JNET 0 3             Recovery failed
JNET 1 3              Recovery failed
```

Figure 1-3 SRSTATUS level MAP display - SER1 view

```
   CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
    •      •     •    6LCM      2 RSC     •   110 GC      •       •      •
                      *C*       *C*           *C*
SRSTATUS
         OVERALL STATUS Pend:  18%        InProg: 9%   Comp: 70%   Fail: 3%
 0  Quit   VIEW: SER1                                          11:52:34
 2  View_      Pend   Inprg   Comp   Fail         Pend   InPrg   Comp   Fail
 3  List_ TMs     4       0     10     16
 4
 5
 6
 7
 8
 9
10
11
12
13
14
15
16
17
18
  OPERATOR
Time  11:52
```

The preceding example shows the SER1 view of the SRSTATUS level MAP display. From the SER1 view, you can list the status of the LMs. From the SER1 view, you can access the TMS, DCMS, and OTHER PM views.

From the TM view, you can list the status of the following PM types: TM8, MTM, ATM, STM, DTM, CTM, PTM, RMM, and OAU.

From the DCM view, you can list the status of the following PM types: DCM, DCMT, DCM250, DSM, and DES.

From the OTHER view, you can list the status of the following PM types: TM2, TM4, TMA, MMA, TAN, and T8A.

Figure 1-4 SRSTATUS level MAP display - SER2 view

```
   CM     MS    IOD     Net       PM      CCS     Lns     Trks     Ext     APPL
    •      •     •     6LCM      2 RSC     •    110 GC     •        •       •
                        *C*       *C*            *C*
 SRSTATUS
          OVERALL STATUS Pend:  18%        InProg: 9%   Comp: 70%   Fail: 3%
 0  Quit    VIEW: SER2                                              11:52:34
 2  View_       Pend   Inprg   Comp   Fail         Pend   InPrg   Comp   Fail
 3  List_ XPMs    6       2      8      1
 4        LCDs    7       0      8      2
 5
 6
 7
 8
 9
10
11
12
13
14
15
16
17
18
   OPERATOR
Time  11:52
```

The preceding example shows the SER2 view of the SRSTATUS level MAP display. From the SER2 view, you can list the status of ICRMs and TPCs. From the SER2 view, you can access the LCDS and XPMs PM views.

From the LCD view, you can list the status of the following PM types: RCS, RCU, RCT, IPE, and DLM. From the LCDS view, you can access the LCM view. From the LCMS view, you can list the status of the following PM types: LCM, ILCM, ALCM, ELCM, LCME, LCMI, and SRU.

From the XPMS view, you can list the status of ESAs. From the XPMS view, you can access the DTC, LTC, MSB, LGC, SCM, RCC, and OTHER PM views.

From the DTC view, you can list the status of the following PM types: DTC, TDTC, IDTC, DTCI, PDTC, and ADTC.

From the LTC view, the you can list the status of the following PM types: LTC, ILTC, and TLTC.

From the MSB view, you can list the status of MSB6s and MSB7s.

From the LGC view, you can list the status of the following PM types: LGC, TLGC, ILGC, PLGC, and ALGC.

From the SCM view, you can list the status of the following PM types: SMR, SMA, SMU, SMS, SMSR, and SMA2.

From the RCC view, you can list the status of the following PM types: TRCC, SRCC, RCC2, PRCC, RCO2, RCC, ARCC, and RCCI.

From the OTHER view, you can list the status of the following PM types: TMS, ICP, and CSC.

The following example shows the XPMS view of the SRSTATUS level MAP display.

Figure 1-5 SRSTATUS level MAP display - XPMS view

```
   CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
    ●      ●     ●    6LCM      2 RSC     ●    110 GC     ●       ●       ●
                      *C*       *C*            *C*
SRSTATUS
         OVERALL STATUS Pend:  18%        InProg: 9%   Comp: 70%   Fail: 3%
0  Quit   VIEW: XPMS                                          11:52:34
2  View_       Pend   Inprg   Comp   Fail         Pend   InPrg   Comp   Fail
3  List_ DTCs     1       0      2      2
4        LTCs     3       0      4      0
5        MSBs     0       1      0      0
6        RCCs     1       0      2      1
7        ESA      1       1      0      0
8
9
10
11
12
13
14
15
16
17
18
  OPERATOR
Time  11:52
```

Figure 1-6 SRSTATUS level MAP display - SER3 view

```
   CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
    •      •     •    6LCM      2 RSC     •   110 GC      •       •      •
                      *C*       *C*           *C*
 SRSTATUS
          OVERALL STATUS Pend:  18%        InProg: 9%   Comp: 70%   Fail: 3%
 0  Quit   VIEW: SER3                                          11:52:34
 2  View_       Pend   Inprg   Comp   Fail         Pend   InPrg   Comp   Fail
 3  List_ LIM     0       0      0      2
 4        LIU7    2       0      0      0
 5        NIU     0       0      0      0
 6        XLIU   35       0      0      0
 7        EIU     2       0      0      0
 8        HLIU    0       0      0      0
 9        HSLR    0       0      0      0
10        SVR7    0       0      0      0
11
12
13
14
15
16
17
18
   OPERATOR
Time  11:52
```

The preceding example shows the SER3 view of the SRSTATUS level MAP display. From the SER3 view, you can list the status of the following PM types: LIM, LIU7, HLIU, HSLR, NIU, XLIU, EIU, FRIU, VPU, and SVR7.

The MAP display examples on the following pages show the information that appears for a posted DTC during automatic recovery.

Note: During an inquiry about a PM in a group, the MAP terminal displays the status and progress of the first PM in that group. The status of the PM does not appear until the SRC completes the broadcast loading for the whole group.

Figure 1-7 PM level MAP display of a system-busy DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                        *C*       *C*           *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit       PM    10         0         22        11        1         12
 2  Post_      DTC   3          0         0         0         0         0
 3  Listset
 4             DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_     Unit0: Act     SysB
 6  Tst_       Unit1: Inact   SysB
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

In the preceding MAP display, several critical alarms appear. Unit 0 and unit 1 of the posted DTC are system busy. The system-busy state of the DTC produces a critical alarm. The SRC also triggers recovery activity for the other PMs that the SRC can recover.

Figure 1-8 MAP display of a system-busy DTC during a ROM/RAM query

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                        *C*       *C*           *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit       PM    10         0         22        11        1         12
 2  Post_      DTC   3          0         0         0         0         0
 3  Listset
 4             DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_     Unit0: Act     SysB   Mtce    ROM/RAM Query
 6  Tst_       Unit1: Inact   SysB   Mtce    ROM/RAM Query
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during a ROM/RAM query of a system-busy DTC. The next switch operating system (SOS) audit notes the system-busy state. The audit initiates system maintenance in order to return the DTC to service.

During the period that the DTC returns to service, a ROM/RAM query determines the state of the PM. During that period, a ROM/RAM query also determines if the PM needs to be loaded again. The ROM/RAM query requires less than 1 min to finish. The preceding figure shows a loss of software load.

Figure 1-9 MAP display of a system-busy DTC that waits for the SRC to begin recovery

```
     CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
      •      •    •    6LCM      2 RSC     •   110 GC      •       •      •
                         *C*       *C*           *C*
DTC                    SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10         0         22        11        1         12
 2  Post_        DTC   3          0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    System Recovery
 6  Tst_         Unit1: Inact   SysB   Mtce    System Recovery
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of system maintenance that determines if auto loading is necessary after the system detects a loss of load during the return-to-service task. The DMS-core displays a system recovery message for the DTC until the recovery process starts.

The message indicates that the system flagged the load arrangement for the DTC to the SRC. While the message appears, the group manager groups similar PMs, if necessary, and allocates DMS-core resources.

Figure 1-10 MAP display of the load process that resets a system busy DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*            *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    /Reset
 6  Tst_         Unit1: Inact   SysB   Mtce    /Reset
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display after the SRC initiates a maintenance action to perform the loading. The SRC performs a reset, as part of the loading process. The reset starts the firmware of the DCT again to a known, steady state. The reset can last 15 to 20 s.

Figure 1-11 MAP display of the DMS-core that identifies a DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*            *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    /Status
 6  Tst_         Unit1: Inact   SysB   Mtce    /Status
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during the identification of a DTC as part of the loading process. The loading process reports the status to the DTC. The message gives the DTC a node number. The DTC uses the node number to communicate with the DMS-core. The process can last from 2 s to a maximum of 1 min.

Figure 1-12 MAP display of the DMS-core that queries the ROM firmware of a DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •     6LCM      2 RSC     •    110 GC     •       •      •
                        *C*       *C*           *C*
DTC                   SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit       PM     10         0         22        11        1         12
 2  Post_      DTC    3          0         0         0         0         0
 3  Listset
 4             DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_     Unit0: Act     SysB   Mtce    ROM/RAM Query
 6  Tst_       Unit1: Inact   SysB   Mtce    ROM/RAM Query
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of the load process. The load process performs a ROM/RAM query to determine the ROM firmware that is present in the DTC. The ROM/RAM query is necessary before the ROM tests begin because there are different ROM tests for different firmware. This query lasts less than 1 min.

Figure 1-13 MAP display of the load process that tests the firmware of a DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*            *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    NonDestr ROMtst
 6  Tst_         Unit1: Inact   SysB   Mtce    NonDestr ROMtst
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during the load process tests of the DTC firmware. The load process tests the firmware with a ROM test that is not destructive. This test can last from 1 to 10 min. The length of time that the test lasts depends on the firmware.

Figure 1-14 MAP display of the DMS-core that loads software again into a DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*            *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    /Loading:520K  (48%)
 6  Tst_         Unit1: Inact   SysB   Mtce    /Loading:520K  (48%)
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during the period that the DMS-core loads software again into a DTC. The load process reloads the software after the memory has passed the ROM test. The size of the loaded software increases from 0 kbyte to the final size in 13-kbyte increments. The display value updates with each increment. The percent loaded figure indicates the loading progress. The percentage is based on the total size of the load. The loading time for a PM varies depending on the PM type, its load size, and the CPU resources available.

Figure 1-15 MAP display of the load process that runs a new software load on a DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •   110 GC      •       •      •
                        *C*       *C*           *C*
DTC                   SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit          PM    10         0         22        11        1         12
 2  Post_         DTC   3          0         0         0         0         0
 3  Listset
 4                DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_        Unit0: Act     SysB   Mtce    /Run
 6  Tst_          Unit1: Inact   SysB   Mtce    /Run
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during the period that the load process runs a new DTC software load. After the RAM is loaded, the load process signals the DTC to run the new software load. This begins the initialization of the modules in the DTC. This display lasts for less than 5 s, then the DTC begins initialization.

Figure 1-16 MAP display of a DTC that initializes DTC modules after a software load

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •   110 GC      •       •      •
                        *C*       *C*           *C*
DTC                   SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit          PM    10        0         22        11        1         12
 2  Post_         DTC   3         0         0         0         0         0
 3  Listset
 4                DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_        Unit0: Act     SysB   Mtce    Initializing
 6  Tst_          Unit1: Inact   SysB   Mtce    Initializing
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during the initialization of DTC modules after a software load. The message appears until the DTC initializes the modules. The DTC sends a message to the DMS-core when initialization is complete. The initialization time varies from 1 to 2.5 min.

Figure 1-17 MAP display of the load process that resets the data areas of a DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •   110 GC      •       •      •
                        *C*       *C*           *C*
DTC                   SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit          PM    10        0         22        11        1         12
 2  Post_         DTC   3         0         0         0         0         0
 3  Listset
 4                DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_        Unit0: Act     SysB   Mtce    /Clear Data
 6  Tst_          Unit1: Inact   SysB   Mtce    /Clear Data
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of the load process that resets DTC static data areas. The load process resets the static data areas of the DTC to a NIL state. Resetting the data takes less than 30 s.

Figure 1-18 MAP display of a static data download to a DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*           *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit          PM    10        0         22        11        1         12
 2  Post_         DTC   3         0         0         0         0         0
 3  Listset
 4                DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_        Unit0: Act     SysB   Mtce    /Static Data
 6  Tst_          Unit1: Inact   SysB   Mtce    /Static Data
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of the maintenance load process that downloads static data from the DMS-core to the DTC. Each PM has different static data. Static data is not broadcast loaded. The time required to enter the data can vary from less than 30 s to several minutes. The period of time depends on how the data is sent. The size of data varies with the configuration.

Figure 1-19 MAP display of a core that downloads executable files into a DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*            *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    Loading Execs
 6  Tst_         Unit1: Inact   SysB   Mtce    Loading Execs
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of the maintenance load process that downloads executable files into the data memory of the DTC.

Figure 1-20 MAP display of an in-service DTC

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*            *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  InSv   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     InSv
 6  Tst_         Unit1: Inact   InSv
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of the DTC after the loading process that the SRC coordinates is complete and the DTC returns to service. The in-service message indicates that the SRC completely recovered the DTC.

The time for PM recovery can vary from 15 to 60 min or longer. This period of time begins at reset and ends at in-service.

The time for recovery depends on the following conditions:

- the amount of call processing that occurs in the DMS-core
- the amount of CPU available in the DMS-core
- the amount of parallel recovery that occurs
- the size of the PM load file

The MAP display continues to display critical alarms for other PMs. Resources to recover other PMs are available because the SRC completed the recovery of the DTC.

Log reports

The system generates log reports during the SRC recovery process for complete and failed recovery attempts. Monitor the log reports to determine if the SRC completely recovered each node.

Log retrieval utility for emergency (E1 & E2) occurrences (DLOG)

This utility allows operating companies to capture all logs on permanent store. The logs include any logs that the log utility (LOGUTIL) can threshold or suppress in the LOGUTIL. Field support or Northern Telecom personnel can use the utility as a debugging tool. Field support or Northern Telecom personnel also can turn the utility ON or OFF.

The DLOG command is better than the LOGUTIL. The DLOG command uses DIRP to record unformatted logs on permanent store. Unformatted logs are compact logs that you cannot read. The DLOG is faster and shorter than LOGUTIL. The risk that the DLOG loses logs during peak activity is less than the risk that the LOGUTIL loses logs.

You can use the LOGFORMAT command to format logs later. You can use the SCANLOG command to scan logs for analysis. You can use the interface in the form of a Command Interpreter (CI) level called DLOG to format logs. This interface allows you to choose the format parameters you set by the DLOG command.

The current log formatting utility (LOGFORMAT CI) remains. A message that informs you of DLOG utility appears on your terminal.

Only one user can format logs at one time. Only one user can enter the DLOG command level at one time. If another user attempts to enter the DLOG level, a message appears on the terminal. The message states that the utility is in use.

DLOG nonmenu commands

The following sections describe the DLOG level non-menu commands.

DLOG

The DLOG level command allows you to enter the DLOG level. The default format setting is ALL logs included and no logs excluded.

STATUS

This subcommand displays the current DLOG format parameters (logs INCLUDED/EXCLUDED). The subcommand displays the earliest valid start time available for use with the FORMAT subcommand. The subcommand also shows information on the previous use of the DLOG command.

EXCLUDEALL

This subcommand removes all logs from the current set of logs that you format. If you do not use the INCLUDE subcommand after you use the EXCLUDEALL subcommand, you cannot format any logs.

INCLUDEALL

This subcommand resets the current set of logs that you format to ALL, which is the default value.

EXCLUDE

This subcommand removes logs from the current set of logs that you format. Use of this subcommand requires that logs are present. The entry of this subcommand validates logs.

INCLUDE

This subcommand adds logs to the current set of logs that you format. If the logs are already present, this subcommand is not necessary. The entry of this subcommand validates logs.

EXCLUDEPROTO

This subcommand excludes protologs from the format of the log executed by the FORMAT command. Protogs are special and specific logs. These protologs are TRAP, SWER, INIT, LOCK or INFO logs. When you quit out of DLOG, the system resets to include these protologs.

INCLUDEPROTO

This subcommand includes protologs in the format of the log executed by the FORMAT command. Protologs are special and specific logs. These protologs are TRAP, SWER, INIT, LOCK or INFO logs. The default is to include protologs in the format output.

FORMAT

This subcommand executes the formal formatting process. The following parameters are part of this subcommand in the listed order:

- <STARTTIME> and <ENDTIME>: These parameters specify the length of time that DLOG can format logs. You need both parameters. The syntax is YYMMDDHHMMMSS.
- <OUPUT OPTIONS>: You need this parameter. This parameter has two valid values:
  - — ToFile: If this keyword is specified, you must enter an output device that stores the final formatted file.
  - — To terminal: If this keyword is specified, the output appears on the screen.

FORMATFILE

You can use this subcommand to format DLOG data that is not formatted. To format DLOG data that is not formatted, enter a specified FILENAME. This procedure is the current functionality of the LOGFORMAT CI command.

- <FILENAME>: You need this parameter. This parameter is an unformatted DLOG file.
- <OUTPUT OPTIONS>: You need this parameter. This parameter has two valid values:
  - — ToFile: If this keyword is specified, you must enter an output device that stores the final formatted file.
  - — To terminal: If this keyword is specified, the output appears on the screen.
  - — <starting block> (0 to 4294967295): This is an optional parameter if the user knows what specific block number to start the formatting from instead of starting from the beginning block.

LISTFILES

This subcommand displays the raw DLOG files with their start and end times to the user. These are the files recorded in the internal DLOG table that are used with the format subcommand start and end times to locate the appropriate files to format.

QUIT

This subcommand exits the DLOG level.

For example, you can capture only PM logs that the system generated on a given day between set start and end times. The process starts when you enter the FORMAT command. The process includes the following steps:

- The software locates the appropriate file(s) which contain the logs based on the parameters that you entered.
- The formatting process begins. The process filters out the files and logs that do not fit the requirements. The result is a formatted DLOG file that only contains the specified logs.

The final file has a FILENAME of DLOG+date/time stamp with the current time, for example: DLOG940613102642. You can name the storage device that stores the final file.

Logs that relate to recovery

The system generates the following logs during the successful recovery of a PM:

- PM181 (indicates that a PM is at the ROM level)
- PM181 (indicates the PM that is not loaded)
- PM181 (indicates a reset PM)
- PM181 (indicates a transfer of load files to the PM)
- PM181 (indicates that static data cleared)
- PM181 (indicates that static data updated)

When the SRC fails to recover a PM, the system generates the following logs:

- PM117 (indicates that the recovery failed before loading)
- PM181 (indicates that loading failed during recovery)
- PM117 (indicates that the recovery failed after loading)

Log Report Reference Manual documents log reports.

Failure of SRC to recover a PM

During recovery, the system recovery message appears next to the name of the PM.

If the system cannot recovery the failed PM, the following actions occur:

- the PM remains system busy
- the system generates a log
- the system recovery message disappears

Note: If a series II XPM does not automatically recover, the system does not generate alarms or messages. If the XPM is system busy or manual busy, the system generates an alarm.

A problem that causes the SRC to fail to recover a PM also generate a log report or alarm. Operating company personnel must clear the problem before recovery of the PM. For information on how to clear alarms, refer to *Alarm and Performance Monitoring Procedures*.

If the failed PM remains system busy after the alarm clears, do not attempt manual recovery. Contact the next level of support to determine the next action to take.

Manual override of the SRC

WARNING
Contact ETAS or the next level of support
In the event of an equipment outage that affects service, contact the Emergency Technical Assistance Service (ETAS) of Nortel (Northern Telecom). Another option is to contact the next level of support. Contact ETAS or the next level of support before you override the software recovery controller (SRC).

CAUTION
Loss of service
Manual interruption during automatic system recovery actions may interrupt or prevent automatic recovery and extend service outage.

You can recover a PM manually while the SRC is recovering other PMs. Do not attempt to manually recover a PM during SRC operation before you contact the next level of support. Errors that occur during manual recovery can prolong service outage and hamper the best SRC's recovery steps.

You can manually override the SRC, if the SRC intervenes during manual maintenance activity on a PM. For example, you can override the SRC, if operating company personnel accidentally removed a PM from service. You can manually override the SRC at the PM level of the MAP display. Warnings appear to inform you how manual commands can affect the SRC.

The three commands that override the SRC are in the *DMS-100 Family Commands Reference Manual,* 297-1001-822. The three commands are:

- RECOVER
- BSY with the FORCE option
- the abort task (ABTK) command for series II PMs.

Note: The following warning appears on the MAP display when any of the preceding commands cancels a broadcast load:

```
Aborting maintenance on this PM will affect maintenance on other
PMs.
```

2 System level recovery procedures

Introduction to system level recovery procedures

This chapter contains procedures for performing system level recovery tasks for the DMS-100 switch. For each recovery task, you will find a procedure containing

- explanatory and context-setting information
- information
- step-action instructions

Explanatory and context-setting information

The first page of each procedure contains the following headings:

- Application (when to use the procedure)
- Action (how to use the flowchart and step-action instructions)

Summary flowchart

The flowchart is only a summary of the main actions, decision points, and possible paths you may take. Do not use the summary flowchart to perform the procedure. Instead, use it to preview what you will be doing and to prepare for it. For example, if you see that these instructions involve another office, you will know to advise that office before you begin the step-action instructions.

Step-action instructions

The step-action instructions tell you how to perform the recovery task. Normally you will perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and system information you use or see while performing the procedure. For help on DMS commands, see *DMS-100 Family Commands Reference Manual*, 297-10001-822

Booting a DMS switch

Application

Use this procedure to boot a DMS SuperNode or DMS SuperNode SE switch from system load module (SLM) disk or tape. Perform this procedure as instructed by the next level of support.

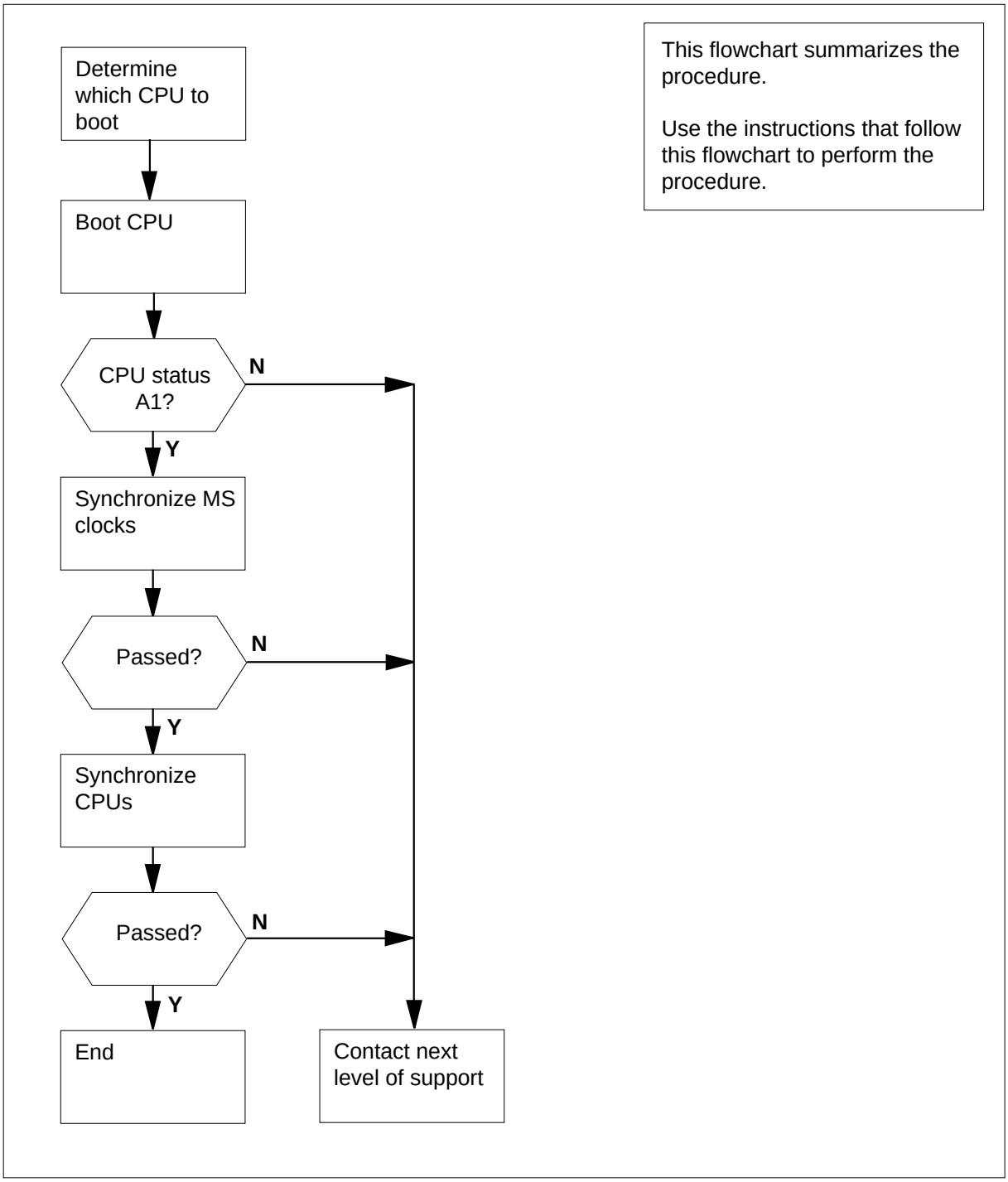
All calls drop when the switch boots.

Action

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

Booting a DMS switch (continued)

Summary of Booting a DMS switch



Booting a DMS switch (continued)

Booting a DMS switch

At your current location

1

CAUTION
Contact the next level of support
Do not attempt this procedure before you contact the next level of support.

WARNING
Extended service interruption
If you boot the switch from tape, the boot requires more recovery time than when you boot from disk. Make sure you boot from disk when possible. Call processing resumes more quickly after you boot from disk.

Determine from office records the name and location of the most recent office image file.

If the most recent image file	Do
resides on the SLM disk	step 2
resides on the SLM tape	step 2

At the CM reset terminal for the INACTIVE CPU

2

WARNING
Set the ITOC file
Ensure the ITOC file is set if the most recent image file resides on the SLM disk. This is necessary for proper system initialization.

To jam the inactive central processing unit (CPU), type

>\JAM

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

3 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
JAM DONE
```

At the CM reset terminal, ACTIVE or INACTIVE CPU

4

DANGER
BOOT command
A CPU mismatch occurs if you use the BOOT command when the CPUs are InSync. Mismatch handling and mismatch recovery can change the state of one of both CPUs. For example, the active CPU can reset the mate CPU during mismatch handling or recovering. Any in-progress commands such as BOOT terminate, as a result.

Determine if the computing module (CM) is in sync.

Note: A dot or EccOn under the Sync header means 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 5
is not in sync	step 11

5 Determine if the MAP display is available for issuing a drop CPU synchronization command.

If the MAP display	Do
is available	step 9
not available	step 6

At the CM reset terminal for the INACTIVE CPU

6 To restart the inactive CPU, type

>\RESTART

and press the Enter key.

RTIF response:

Booting a DMS switch (continued)

```
YES
```

7 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
RESTART DONE
```

8 Verify that the CPUs are out of sync.

If A1	Do
flashes	step 11
does not flash after 15 min	Repeat step 6, or contact your next level of support.

At the CM reset terminal for the INACTIVE CPU

9 Access the CM level of the MAP display, by typing

>MAPCI;MTC;CM

and pressing the Enter key.

10 Perform a drop CPU synchronization, by typing

>DpSync

and pressing the Enter key.

Note: The DpSync command must be used before you boot a DMS switch from any SLM device, tape or disk.

11 Determine which CPU to boot.

If the CPU is	Do
active	step 12
inactive	step 21

12 Determine the boot device (the most recent valid image).

If the boot device is from an	Do
SLM tape	step 13
SLM disk	step 17

At the CM reset terminal for the ACTIVE CPU

13

DANGER
BOOT command
A CPU mismatch occurs if you use the BOOT command when the CPUs are InSync. Mismatch handling and mismatch recovery can change the state of one of both CPUs. For example, the active CPU can reset the mate CPU during mismatch handling or recovering. Any in-progress commands such as BOOT terminate, as a result.

To override the active CPU, type

>\OVERRIDE

and press the Enter key.

RTIF response:

```
TEMP. RESET/JAM ENABLE
```

14 Boot the active CPU by typing

>\BOOT SLMslm_noT

and pressing the Enter key.

where

slm_no
is the number of the SLM (0 or 1) with the required tape load

15 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
BOOT INITIATED
```

16 Monitor the CM reset terminal for the active CPU to determine if the switch booted.

Note: When the switch boots, the reset terminal displays the response Booting, followed by different diagnostic messages. Alphanumeric addresses appear in the status bar. When the switch boot finishes, A1 flashes in the status bar.

If A1	Do
flashes	step 37

Booting a DMS switch (continued)

If A1	Do
does not flash after 15 min	Repeat step 6, or contact your next level of support.

At the CM reset terminal for the ACTIVE CPU

17

DANGER
BOOT command
A CPU mismatch occurs if you use the BOOT command when the CPUs are InSync. Mismatch handling and mismatch recovery can change the state of one of both CPUs. For example, the active CPU can reset the mate CPU during mismatch handling or recovering. Any in-progress commands such as BOOT terminate, as a result.

To override the active CPU, type

>\OVERRIDE

and press the Enter key.

RTIF response:

```
TEMP. RESET/JAM ENABLE
```

18 Boot the active CPU by typing

>\BOOT SLM_no

and pressing the Enter key.

where

slm_no
is the number of the SLM (0 or 1) with the required tape load

19 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
BOOT INITIATED
```

20 Monitor the CM reset terminal for the active CPU to determine if the switch booted.

Note: When the switch boots, the reset terminal displays the response Booting, followed by different diagnostic messages. Alphanumeric

Booting a DMS switch (continued)

addresses appear in the status bar. When the switch boot finishes, A1 flashes in the status bar.

If A1	Do
flashes	step 37
does not flash after 15 min	Repeat step 6, or contact your next level of support.

21 Determine the boot device (the most recent valid image).

If the boot device is from an	Do
SLM tape	step 22
SLM disk	step 30

22

DANGER
BOOT command
A CPU mismatch occurs if you use the BOOT command when the CPUs are InSync. Mismatch handling and mismatch recovery can change the state of one of both CPUs. For example, the active CPU can reset the mate CPU during mismatch handling or recovering. Any in-progress commands such as BOOT terminate, as a result.

Make sure that the SLM tape cartridge that contains the most recent image file is in the tape drive.

Booting a DMS switch (continued)

At the CM reset terminal for the INACTIVE CPU

23

DANGER
BOOT command
A CPU mismatch occurs if you use the BOOT command when the CPUs are InSync. Mismatch handling and mismatch recovery can change the state of one of both CPUs. For example, the active CPU can reset the mate CPU during mismatch handling or recovering. Any in-progress commands such as BOOT terminate, as a result.

To boot the inactive CPU, type

>\BOOT SLMslm_noT

and press the Enter key.

where

slm_no
is the number of the SLM (0 or 1) with the required tape load

Example input:

>\BOOT SLM0T

RTIF response:

```
BOOT Please confirm: (YES/NO)
```

24 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
BOOT INITIATED
```

25 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key.

RTIF response:

```
JAM RELEASE DONE
```

Booking a DMS switch (continued)

At the CM reset terminal for the ACTIVE CPU

26 To override the active CPU, type

>\OVERRIDE

and press the Enter key.

RTIF response:

```
TEMP. RESET/JAM ENABLE
```

27 To jam the active CPU, type

>\JAM

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

Note: An active CPU jam causes a switch of activity. A jam causes the active CPU to become inactive.

28 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
JAM DONE
```

29 Monitor the CM reset terminal for the active CPU to determine if the switch booted.

Note: When the switch boots, the reset terminal displays the response Booting, followed by different diagnostic messages. Alphanumeric addresses appear in the status bar. When the switch boot finishes, A1 flashes in the status bar.

If A1	Do
flashes	step 37
does not flash after 15 min	Repeat step 6, or contact your next level of support.

At the CM reset terminal for the INACTIVE CPU

30 To boot the inactive CPU, type

>\BOOT SLMslm_no

and press the Enter key.

where

slm_no
is the number of the SLM (0 or 1) that contains the most recent

Booting a DMS switch (continued)

image file

Example input:

>\BOOT SLM0

RTIF response:

```
BOOT Please confirm: (YES/NO)
```

31 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
BOOT INITIATED
```

32 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key.

RTIF response:

```
JAM RELEASE DONE
```

At the CM reset terminal for the ACTIVE CPU

33 To override the active CPU, type

>\OVERRIDE

and press the Enter key.

RTIF response:

```
TEMP. RESET/JAM ENABLE
```

34 To jam the active CPU, type

>\JAM

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

Note: An active CPU jam causes a switch of activity. A jam causes the active CPU to become inactive.

35 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
JAM DONE
```

36 Monitor the CM reset terminal for the active CPU to determine if the switch booted.

Note: When the switch boots, the reset terminal displays the response Booting, followed by different diagnostic messages. Alphanumeric addresses appear in the status bar. When the switch boot finishes, A1 flashes in the status bar.

If A1	Do
flashes	step 37
does not flash after 15 min	Repeat step 6, or contact your next level of support.

At the MAP terminal

37 Determine if you must log in.

Note: The message Please Login indicates that you must log in. Your office parameters determine if the system can log you in automatically.

Example of a MAP response:

```
Please Login.
```

If	Do
you must log in	step 38
the system logged you in automatically	step 42

38 Press the Break key.

Example of a MAP response:

```
?
```

39 To log in to the MAP terminal, type

>LOGIN

and press the Enter key.

Example of a MAP response:

```
Enter User Name
```

40 To enter the user name, type

>user_name

and press the Enter key.

Booting a DMS switch (continued)

where

user_name
is the name of the user for the account

Example of a MAP response:

```
Enter Password
```

41 To enter the password, type

>password

and press the Enter key.

where

password
is the password for the account

Example of a MAP response:

```
 SuperNode1 Logged in on 1993/03/11 at 20:37:17.
```

42 To access the MS Clock level of the MAP display, type

>MAPCI;MTC;MS;CLOCK

and press the Enter key.

43 To synchronize the clocks, type

>SYNC

and press the Enter key.

If the SYNC command	Do
passed	step 44
failed	step 51

44 To access the CM level of the MAP display, type

>CM

and press the Enter key.

45 Determine if the CPUs are in sync.

Note: A dot symbol under the Sync header indicates that the CPUs are in sync. The word No indicates that the CPUs are not in sync.

If the CPUs	Do
are in sync	step 52
are not in sync	step 46

Booting a DMS switch (continued)

46 Contact the next level of support to determine if you can synchronize the CPUs.

If you	Do
can synchronize the CPUs	step 47
cannot synchronize the CPUs	step 52

47 Determine if the inactive CPU jammed.

Note: The word yes under the Jam header indicates that the CPU jammed. The area is blank if the CPU did not jam.

If the inactive CPU	Do
jammed	step 48
did not jam	step 49

At the CM reset terminal for the INACTIVE CPU

48 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key.

RTIF response:

```
JAM RELEASE DONE
```

At the MAP terminal

49 To synchronize the CPUs, type

>SYNC

and press the Enter key.

If the response	Do
indicates the SYNC command passed	step 52
indicates a problem with mismatches makes the CPUs not in sync. Analyze the mismatch logs before you sync again.Do you wish to continue?Please Confirm(“YES", “Y", or “NO", "N")(SuperNode/SuperNode SE series 70 only)	step 50
is other than listed here	step 51

50 (SuperNode/SuperNode SE Series 70 only)

To deny the action, type

>NO

Booting a DMS switch (end)

and press the Enter key.

Go to step 51.

51 For additional help, contact the next level of support.

52 The procedure is complete.

DMS-Spectrum Peripheral Module recovery process

Application

Use this procedure to monitor the DMS-Spectrum Peripheral Module (SPM) recovery process after a system-power-loss or dead-office recovery.

The SPM automatically recovers from the following failure situations:

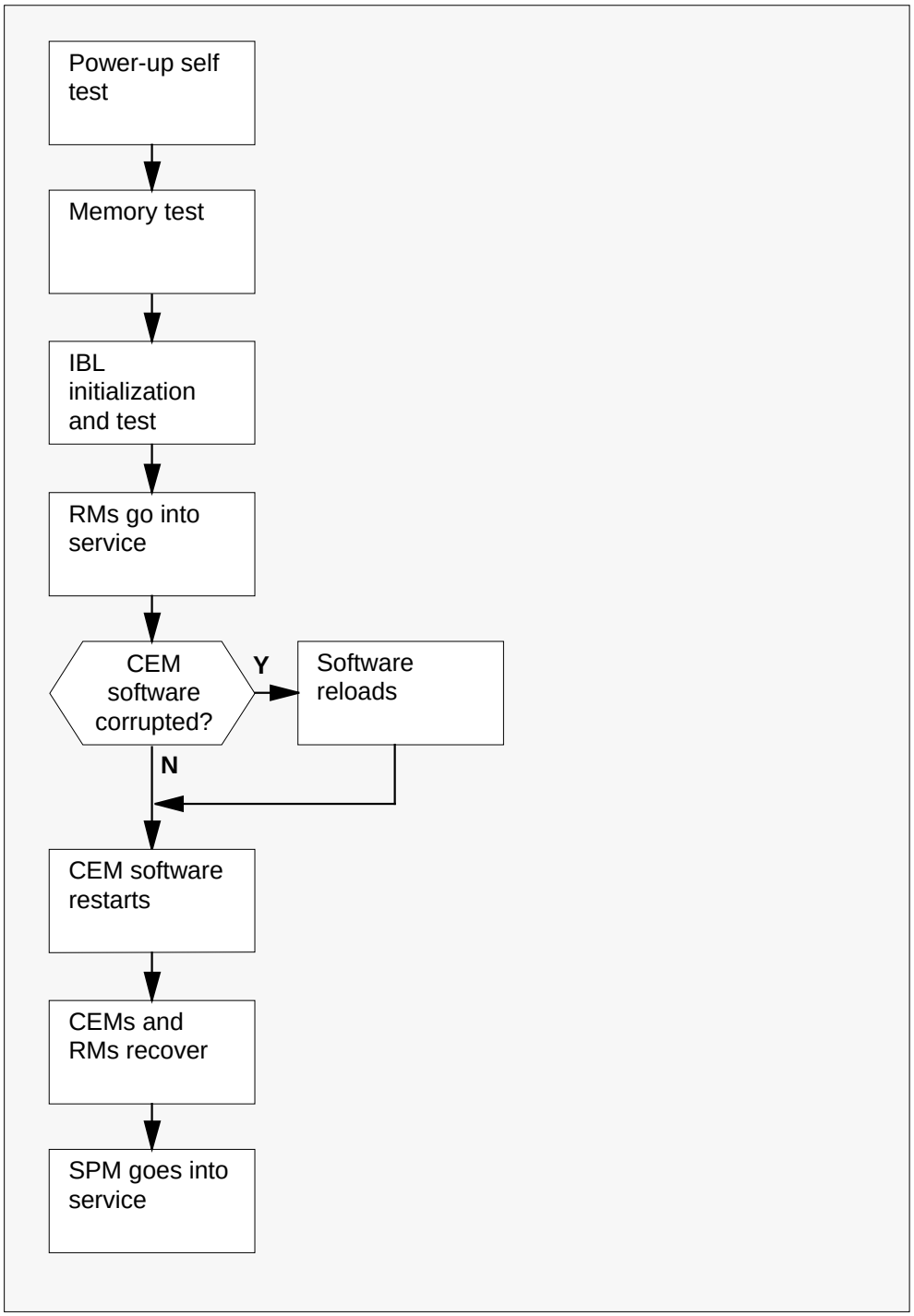
- dead office
- traffic overload
- office restart
- system power loss

Action

The following flowchart provides an overview of the process. Use the instructions in the step-action procedure that follows the flowchart to monitor the recovery process.

Note: The SPM automatically recovers from failure situations. This procedure describes how to monitor that process.

DMS-Spectrum Peripheral Module recovery process (continued)



DMS-Spectrum Peripheral Module recovery process (continued)

Monitoring the SPM recovery process

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 the SPM (0 to 63) being monitored

The following is an example of an SPM screen:

```
   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     SPM 11 INSV  Loc: Site HOST Floor 2 Row A  FrPos 0
 5 Trnsl
 6             Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
 7             DSP 2  1  A Insv  CEM 1  8  I Insv  -----  1 A Insv  --- -  8  - ----
 8             DSP 0  2 A Insv  OC3 0  9 A Insv  --- –  2 – ----  -----  9 A Insv
 9             DSP 1  3 I Insv  OC3 1 10 I Insv  --- –  3 – ----  --- – 10 – ----
10             DSP 3  4 I Insv  --- – 11 – ----  --- –  4 – ----  --- – 11 – ----
11 Disp_       --- –  5 – ----  --- – 12 – ----  --- –  5 – ----  --- – 12 – ----
12 Next        --- –  6 – ----  --- 4 13 A Insv  --- –  6 – ----  --- – 13 – ----
13 Select_     CEM 0  7 A Insv  --- 5 14 A Insv  --- –  7 – ----  --- – 14 – ----
14 QueryPM
15 ListAlm_
16
17
18

   14:12 >
```

DMS-Spectrum Peripheral Module recovery process (end)

3 Observe the status to the SPM modules during the recovery process.

If	Do
all modules do not indicate InSv	SPM alarm clearing and card replacement procedures
all modules indicate InSv	Step 4

4 You have completed this procedure. Return to the CI level of the MAP screen by typing

```
>QUIT ALL
```

and pressing the Enter key.

Performing a cold restart

Application

Use this procedure to perform a cold restart on a DMS SuperNode or DMS SuperNode SE switch. Perform this procedure as instructed by the next level of support.

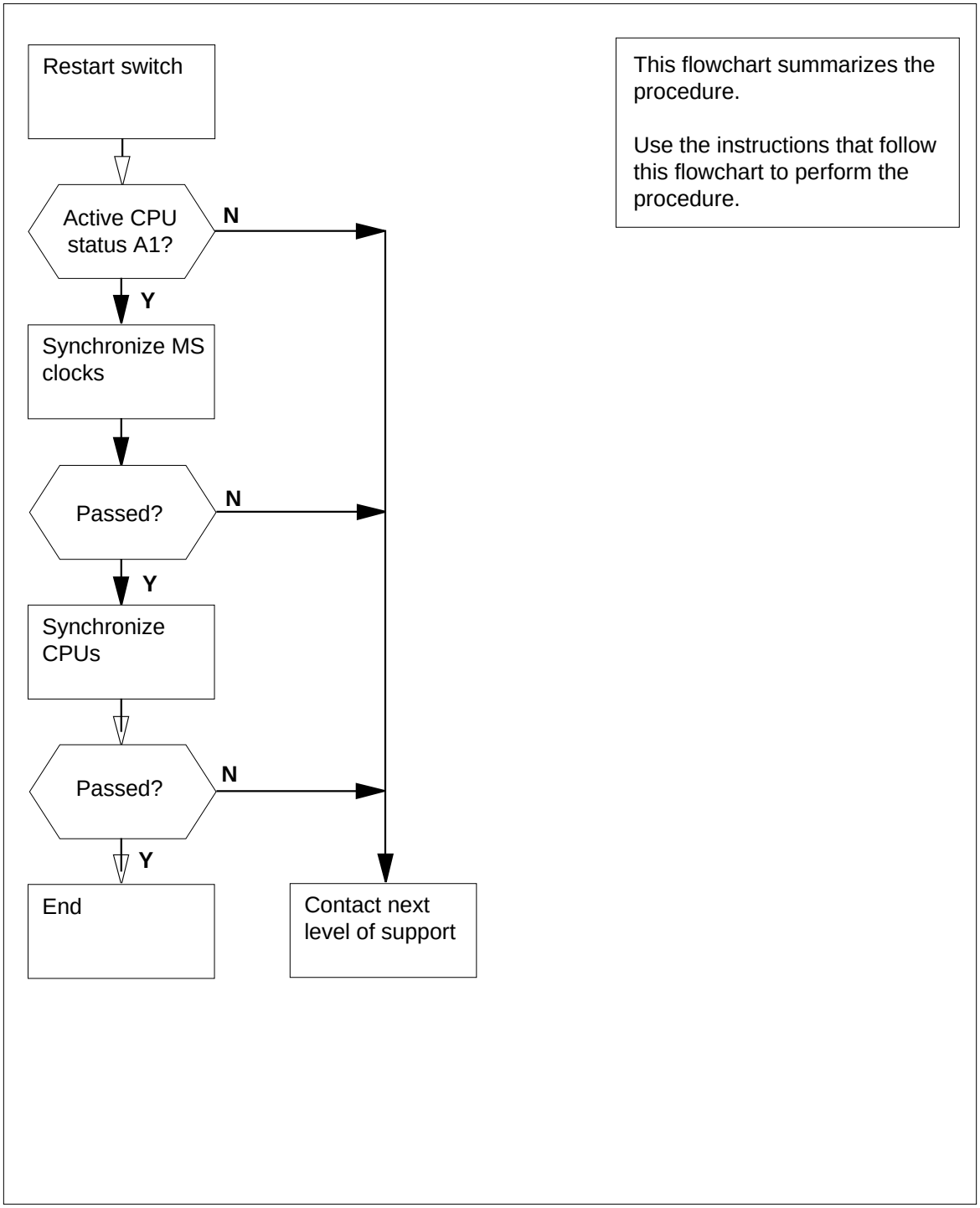
A cold restart is more severe than a warm restart, but less severe than a reload-restart. A cold restart is an initialization phase during which temporary storage deallocates and clears. All calls drop during the restart, and billing data does not record for these calls. Office configuration and translation data remain.

Action

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

Performing a cold restart (continued)

Summary of Performing a cold restart



Performing a cold restart

At your current location

1

WARNING
Contact your next level of support
Do not attempt this procedure before you contact the next level of support.

WARNING
Loss of Service
All calls drop during a cold restart.

WARNING
Extended service interruption
Make sure you execute the restart from a MAP terminal. Depending on the severity of the problem, MAP terminals can be out of service. If a MAP terminal is not available, perform the restart from the CM reset terminals.

Determine if you can use a MAP terminal to execute the restart.

If you	Do
can use a MAP terminal	step 2
cannot use a MAP terminal	step 6

At the MAP terminal

2 To access the CI level of the MAP display, type

```
>QUIT ALL
```

and press the Enter key.

3 To restart the switch, type

```
>RESTART  COLD ACTIVE
```

and press the Enter key.

Example of a MAP response:

Performing a cold restart (continued)

```
WARNING: This action will result in a CALL PROCESSING
OUTAGE.
Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

4 To confirm the command, type

>YES

and press the Enter key.

At the CM reset terminal for the ACTIVE CPU

5 Monitor the CM reset terminal for the active central processing unit (CPU) to determine if the switch restarted.

Note: When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

If A1	Do
flashes	step 16
does not flash after 5 min	step 30

At the CM reset terminal for the INACTIVE CPU

6 Check the status bar for the reset terminal to determine if the CPUs are in sync.

Note: The word Sync in the status bar indicates that the CPUs are in sync. The word NoSync indicates that the CPUs are not in sync.

If the CPUs	Do
are in sync	step 7
are not in sync	step 12

7 To jam the inactive CPU, type

>\JAM

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

8 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
JAM DONE
```

Performing a cold restart (continued)

9 To restart the inactive CPU, type

>\RESTART COLD

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

10 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
RESTART DONE
```

11 Wait for the CPUs to drop synchronization.

Note: The word NoSync appears in the reset terminal status bar when the CPUs drop synchronization.

At the CM reset terminal for the ACTIVE CPU

12 To override the active CPU, type

>\OVERRIDE

and press the Enter key.

RTIF response:

```
TEMP. RESET/JAM ENABLE
```

13 To restart the active CPU, type

>\RESTART COLD

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

14 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
RESTART DONE
```

Performing a cold restart (continued)

15 Monitor the CM reset terminal for the active CPU to determine if the switch restarted.

Note: When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

If A1	Do
flashes	step 16
does not flash after 5 min	step 30

At the MAP terminal

16

WARNING
Extended service interruption
The exact login procedure can vary, according to your office configuration. If you need additional help, contact the next level of support.

Determine if you must log in.

Note: The message Please Login indicates that you must log in. Your office parameters determine if the system can log you in automatically.

Example of a MAP response:

```
Please Login.
```

If	Do
you must login	step 17
the system logged you in automatically	step 21

17 Press the Break key.

Example of a MAP response:

```
?
```

18 To log in to the MAP terminal, type

`>LOGIN`

and press the Enter key.

Example of a MAP response:

```
Enter User Name
```

Performing a cold restart (continued)

19 To enter the user name, type

>user_name

and press the Enter key.

where

user_name
is the name of the user for the account

Example of a MAP response:

```
Enter Password
```

20 To enter the password, type

>password

and press the Enter key.

where

password
is the password for the account

Example of a MAP response:

```
SuperNode1 Logged in on 1993/03/11 at 20:37:17.
```

21 To access the MS Clock level of the MAP display, type

>MAPCI;MTC;MS;CLOCK

and press the Enter key.

22 To synchronize the clocks, type

>SYNC

and press the Enter key.

If the SYNC command	Do
passed	step 23
failed	step 30

23 To access the CM level of the MAP display, type

>CM

and press the Enter key.

24 Determine if the CPUs are in sync.

Note: A dot symbol under the Sync header indicates that the CPUs are in sync. The word No indicates that the CPUs are not in sync.

If the CPUs	Do
are in sync	step 31
are not in sync	step 25

Performing a cold restart (continued)

25 Determine from the next level of support if you can synchronize the CPUs.

If you	Do
can synchronize the CPUs	step 26
cannot synchronize the CPUs	step 31

26 Determine if the inactive CPU jammed.

Note: The word yes under the Jam header indicates that the CPU jammed. The area is blank if the CPU did not jam.

If the inactive CPU	Do
jammed	step 27
did not jam	step 28

At the CM reset terminal for the INACTIVE CPU

27 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key.

RTIF response:

```
JAM RELEASE DONE
```

At the MAP terminal

28 To synchronize the CPUs, type

>SYNC

and press the Enter key.

If the response	Do
indicates the SYNC command passed	step 31

indicates a problem with mismatches makes the CPUs not in sync. Analyze the mismatch logs before you sync again.
`Do you wish to continue?`
`Please Confirm("YES", "Y", or "NO", "N")`
	step 29

is other than listed here	step 30

Performing a cold restart (end)

29 (SN/ SNSE Series 70 only)

To deny the action, type

>NO

and press the enter key.

Go to step 30.

30 For additional help, contact the next level of support.

31 The procedure is complete.

Performing a reload-restart

Application

Use this procedure to perform a reload-restart on a DMS SuperNode or DMS SuperNode SE switch. Perform this procedure as instructed by the next level of support.

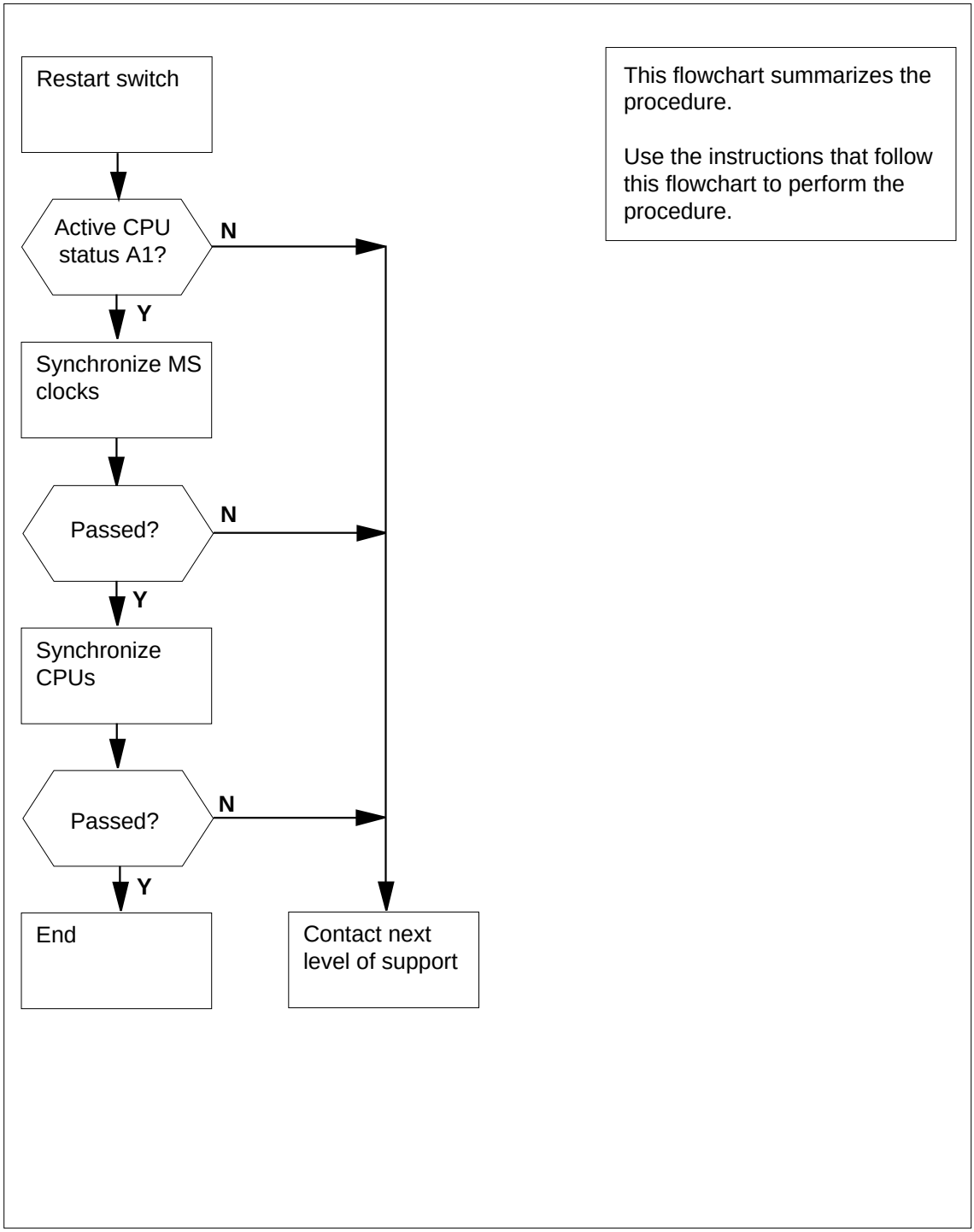
A reload-restart is more severe than a cold restart. A reload-restart simulates a reload of the current software into the switch. All calls drop during the restart, and billing data does not record for these calls. Office configuration and translation data remain.

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.

Performing a reload-restart (continued)

Summary of Performing a reload-restart



Performing a reload-restart (continued)

Performing a reload-restart

At your current location

1

WARNING
Contact the next level of support
Do not attempt this procedure before you contact the next level of support.

WARNING
Loss of service
All calls drop during a reload-restart, and billing data does not record.

WARNING
Extended service interruption
Execute the restart from a MAP terminal. According to the severity of the problem, MAP terminals can be out of service. If a MAP terminal is not available, perform the restart from the CM reset terminals.

Determine if you can use a MAP terminal to execute the restart.

If you	Do
can use a MAP terminal	step 2
cannot use a MAP terminal	step 6

At the MAP terminal

2 To access the CI level of the MAP display, type

```
>QUIT ALL
```

and press the Enter key.

3 To restart the switch, type

```
>RESTART RELOAD ACTIVE
```

and press the Enter key.

Example of a MAP response:

```
WARNING: This action will result in a call processing
outage.
Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

4 To confirm the command, type

>YES

and press the Enter key.

At the CM reset terminal for the ACTIVE CPU

5 Monitor the CM reset terminal for the active central processing unit (CPU) to determine if the switch restarted.

Note: When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

If A1	Do
flashes	step 16
does not flash after 5 min	step 30

At the CM reset terminal for the INACTIVE CPU

6 Determine from the reset terminal status bar if the CPUs are in sync

Note: The word Sync in the status bar indicates that the CPUs are in sync. The word NoSync indicates that the CPUs are not in sync.

If the CPUs	Do
are in sync	step 7
are not in sync	step 12

7 To jam the inactive CPU, type

>\JAM

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

8 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
JAM DONE
```

Performing a reload-restart (continued)

9 To restart the inactive CPU, type

>\RESTART RELOAD

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

10 To confirm the restart procedure, type

>YES

and press the Enter key.

RTIF response:

```
RESTART DONE
```

11 Wait for the CPUs to drop synchronization.

Note: The word NoSync appears in the reset terminal status bar when the CPUs drop synchronization.

At the CM reset terminal for the ACTIVE CPU

12 To override the active CPU, type

>\OVERRIDE

and press the Enter key.

RTIF response:

```
TEMP. RESET/JAM ENABLE
```

13 To restart the active CPU, type

>\RESTART RELOAD

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

14 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
RESTART DONE
```

15 Monitor the CM reset terminal for the active CPU to determine if the switch restarted.

Note: When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

If A1	Do
flashes	step 16
does not flash after 5 min	step 30

At the MAP terminal

16

WARNING
Extended service interruption
The exact login procedure can vary, according to your office configuration. If you need additional help, contact the next level of support.

Determine if you must log in.

Note: The message Please Login indicates that you must log in. Depending on your office parameters, the system can log you in automatically.

Example of a MAP response:

```
Please Login.
```

If	Do
you must log in	step 17
the system logged you in automatically	step 21

17 Press the Break key

MAP response:

?

18 To log in to the MAP terminal, type

`>LOGIN`

and press the Enter key.

MAP response:

Performing a reload-restart (continued)

```
Enter User Name
```

19 To enter the user name, type

>user_name

and press the Enter key.

where

user_name
is the name of the user for the account

Example of a MAP response:

```
Enter Password
```

20 To enter the password, type

>password

and press the Enter key.

where

password
is the password for the account

Example of a MAP response:

```
SuperNode1 Logged in on 1993/03/11 at 20:37:17.
```

21 To access the MS Clock level of the MAP, type

>MAPCI;MTC;MS;CLOCK

and press the Enter key.

22 To synchronize the clocks, type

>SYNC

and press the Enter key.

If the SYNC command	Do
passed	step 23
failed	step 30

23 To access the CM level of the MAP, type

>CM

and press the Enter key.

Performing a reload-restart (continued)

24 Determine if the CPUs are in sync.

Note: A dot symbol under the Sync header indicates that the CPUs are in sync. The word No indicates that the CPUs are not in sync.

If the CPUs	Do
are in sync	step 31
are not in sync	step 25

25 Determine from the next level of support if you can synchronize the CPUs.

If you	Do
can synchronize the CPUs	step 26
cannot synchronize the CPUs	step 31

26 Determine if the inactive CPU jammed.

Note: The word yes under the Jam header indicates that the CPU jammed. The area is blank if the CPU did not jam.

If the inactive CPU	Do
jammed	step 27
did not jam	step 28

At the CM reset terminal for the INACTIVE CPU

27 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key.

RTIF response:

```
JAM RELEASE DONE
```

At the MAP terminal

28 To synchronize the CPUs, type

>SYNC

and press the Enter key.

Example of a MAP response:

Performing a reload-restart (end)

```
Maintenance action submitted.
Synchronization successful.
```

If the response	Do
indicates the SYNC command passed	step 31

indicates a problem with mismatches make the CPUs not in sync. Analyze mismatch logs before you sync again.
`Do you wish to continue?`
`Please Confirm("YES", "Y", or "NO", "N")`
(SN/ SNSE series 70 only)
	step 29

is other than listed here	step 30

29 (SN/SNSE Series 70 only)

To deny the action, type

>NO

and press the Enter key.

Go to step 30.

30 For additional help, contact the next level of support.

31 The procedure is complete.

Performing a warm restart

Application

Use this procedure to perform a warm restart on a DMS SuperNode or DMS SuperNode SE switch. Perform this procedure as instructed by the next level of support.

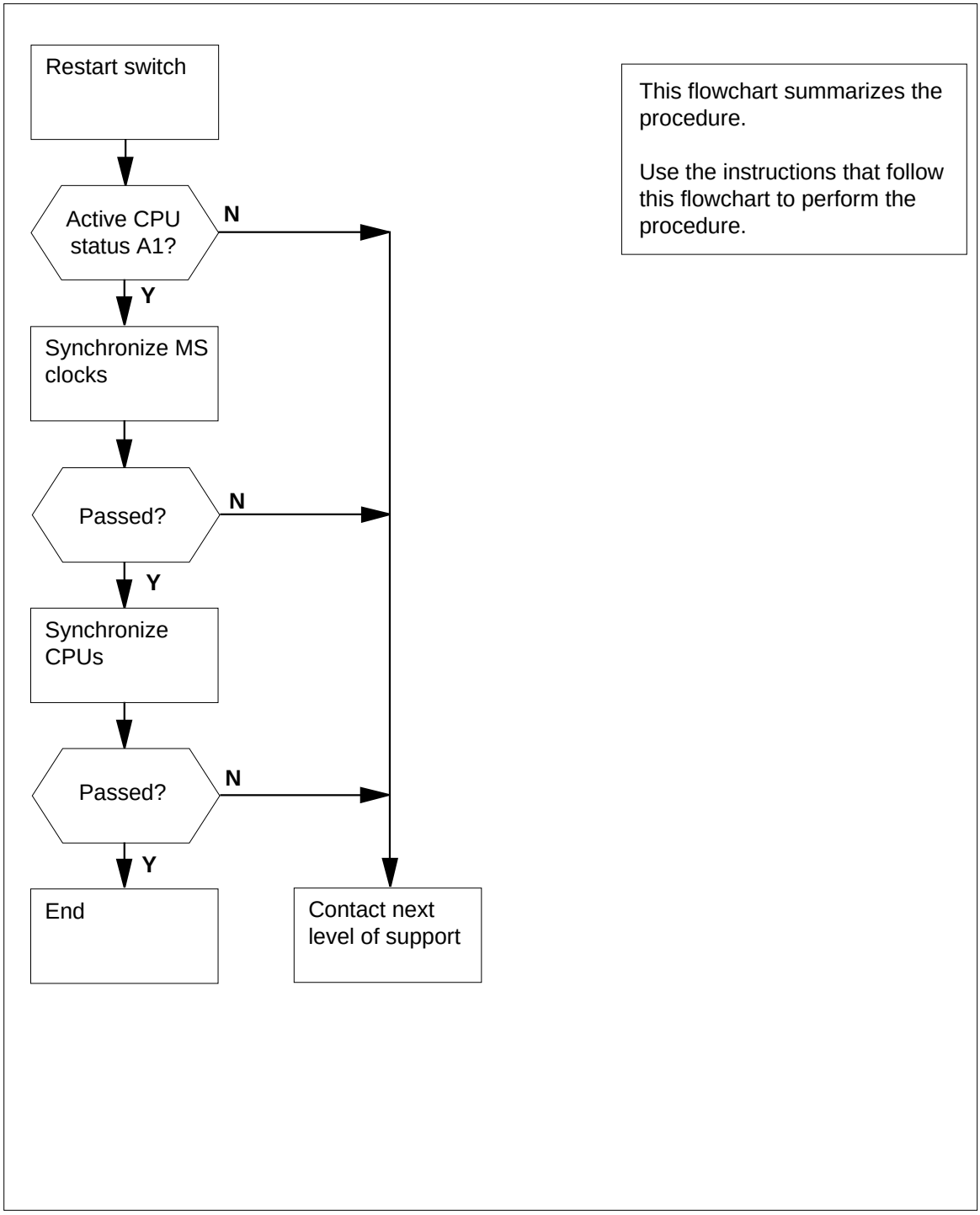
A warm restart is the least severe type of restart. A warm restart is an initialization phase during which temporary storage deallocates and clears. Calls in the talking state continue during the restart. Data associated with each call remains. Calls that do not reach the talking state disconnect.

Action

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

Performing a warm restart (continued)

Summary of Performing a warm restart



Performing a warm restart (continued)

Performing a warm restart

At your current location

1

WARNING
Contact the next level of support
Do not attempt this procedure before you contact the next level of support.

WARNING
Loss of service
Processed calls that do not reach the talking state disconnect during a warm restart.

WARNING
Extended service interruption
Execute the restart from a MAP terminal. According to the severity of the problem, MAP terminals can be out of service. If a MAP terminal is not available, perform the restart from the CM reset terminals.

Determine if you can use a MAP terminal to execute the restart.

If you	Do
can use a MAP terminal	step 2
cannot use a MAP terminal	step 6

At the MAP terminal

2 To access the CI level of the MAP display, type

```
>QUIT ALL
```

and press the Enter key.

3 To restart the switch, type

```
>RESTART  WARM ACTIVE
```

and press the Enter key.

Example of a MAP response:

Performing a warm restart (continued)

```
WARNING: This action will result in a CALL PROCESSING
OUTAGE.
Please confirm (″YES″, ″Y″, ″NO″, or ″N″):
```

4 To confirm the command, type

>YES

and press the Enter key.

At the CM reset terminal for the ACTIVE CPU

5 Monitor the CM reset terminal for the active central processing unit (CPU) to determine that the switch restarted.

Note: When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

If A1	Do
flashes	step 16
does not flash after 5 min	step 29

At the CM reset terminal for the INACTIVE CPU

6 Check the status bar of the reset terminal to determine if the CPUs are in sync.

Note: The word Sync in the status bar indicates that the CPUs are in sync. The word NoSync indicates that the CPUs are not in sync.

If the CPUs	Do
are in sync	step 7
are not in sync	step 12

7 To jam the inactive CPU, type

>\JAM

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

8 To confirm the command, type

>YES

and press the Enter key.

RTI F response:

```
JAM DONE
```

Performing a warm restart (continued)

9 To restart the inactive CPU, type

>\RESTART WARM

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

10 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
RESTART DONE
```

11 Wait for the CPUs to drop synchronization.

Note: The word NoSync appears in the reset terminal status bar when the CPUs drop synchronization.

At the CM reset terminal for the ACTIVE CPU

12 To override the active CPU, type

>\OVERRIDE

and press the Enter key.

RTIF response:

```
TEMP. RESET/JAM ENABLE
```

13 To restart the active CPU, type

>\RESTART WARM

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

14 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
RESTART DONE
```

Performing a warm restart (continued)

15 Monitor the CM reset terminal for the active CPU to determine if the switch restarted.

Note: When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

If A1	Do
flashes	step 16
does not flash after five minutes	step 29

At the MAP terminal

16

WARNING
Extended service interruption
The exact login procedure can vary, according to your office configuration. If you need additional help, contact the next level of support.

Determine if you must log in.

Note: The message Please Login indicates that you must log in. Depending on your office parameters, the system logs you in automatically.

Example of a MAP response:

```
Please Login.
```

If	Do
you must log in	step 17
the system logs you in automatically	step 21

17 Press the Break key.

MAP response:

?

18 To log in to the MAP terminal, type

`>LOGIN`

and press the Enter key.

MAP response:

Performing a warm restart (continued)

```
Enter User Name
```

19 To enter the user name, type

>user_name

and press the Enter key.

where

user_name
is the name of the user for the account

MAP response:

```
Enter Password
```

20 To enter the password, type

>password

and press the Enter key.

where

password
is the password for the account

Example of a MAP response:

```
SuperNode1 Logged in on 1993/03/11 at 20:37:17.
```

21 To access the MS Clock level of the MAP, type

>MAPCI;MTC;MS;CLOCK

and press the Enter key.

22 To synchronize the clocks, type

>SYNC

and press the Enter key.

If the SYNC command	Do
passed	step 23
failed	step 29

23 To access the CM level of the MAP, type

>CM

and press the Enter key.

Performing a warm restart (continued)

24 Determine if the CPUs are in sync.

Note: A dot symbol under the Sync header indicates that the CPUs are in sync. The word No indicates that the CPUs are not in sync.

If the CPUs	Do
are in sync	step 30
are not in sync	step 25

25 Contact the next level of support to determine if you can synchronize the CPUs.

If you	Do
can synchronize the CPUs	step 26
cannot synchronize the CPUs	step 30

26 Determine if the inactive CPU jammed.

Note: The word yes under the Jam header indicates that the CPU jammed. The area is blank if the CPU did not jam.

If the inactive CPU	Do
jammed	step 27
did not jam	step 28

At the CM reset terminal for the INACTIVE CPU

27 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key.

RTIF response:

```
JAM RELEASE DONE
```

At the MAP terminal

28 To synchronize the CPUs, type

>SYNC

and press the Enter key.

If the SYNC command	Do
passed	step 30
failed	step 29

29 For additional help, contact the next level of support.

Performing a warm restart (end)

30 The procedure is complete.

Recovering a composite clock

Application

Use this procedure to recover from loss of the composite clock on a DMS-100 MMP switch.

The following peripheral modules (PM) use the composite clock to synchronize links:

- Common Channel Signaling 7 (CCS7) link interface units (LIU7) or multiple link interface unit (MLIU)—for DS-0 clocking
- high-speed link interface units (HLIU)—for DS-1 clocking

Log PM181 indicates the loss of a composite clock. If one clock is lost, all LIU7s, MLIUs and all HLIUs become in-service trouble (ISTb). The HLIUs will return to in-service state automatically when the composite clock is recovered. If the HLIUs are in ManB (manual busy) of OffL (offline) state, performing RTS on the HLIUs does not return the HLIUs to in-service state.

If both clocks are lost, all LIU7 and MLIU-based CCS7 links lose synchronization and become system busy (SysB). HLIU-based CCS7 links maintain synchronization by:

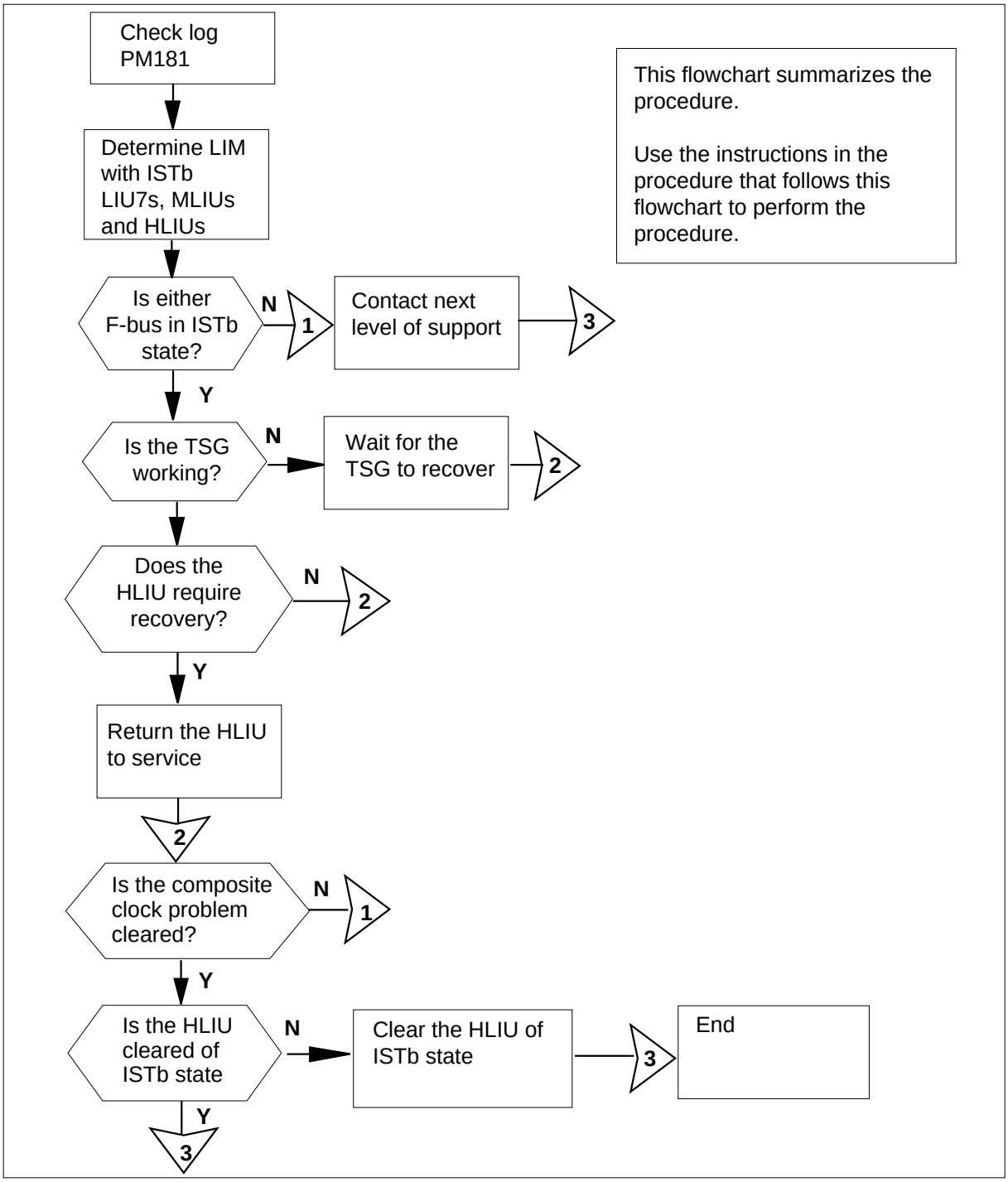
- locking to the incoming link clock to recover incoming data
- using an internal Stratum-3 clock for outgoing data.

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Recovering a composite clock (continued)

Summary of Recovering a composite clock



Recovering a composite clock (continued)

Recovering a composite clock

CAUTION
Possible equipment damage or service interruption
Do not attempt this procedure before contacting your next level of support.

DANGER
Possible service interruption
Do not attempt to manually busy the high-speed link interface unit (HLIU), or use RTS to return the HLIU to service.

At the MAP terminal

1 Access LOGUTIL at the CI level of the MAP display by typing

```
>LOGUTIL
```

and pressing the Enter key.

2 Determine if log PM181 was generated by typing

```
>OPEN  PM181
```

and pressing the Enter key.

Note: The PM181 log indicates the loss of a composite clock.

If a PM181 log	Do
was generated	step 3
was not generated	step 20

3 Find out more information about the last five PM181 logs generated by typing

```
>BACK  5
```

and pressing the Enter key.

4 Post the LIM indicated in log PM181 by typing

```
>MAPCI;MTC;PM POST  LIM  lim_no
```

and pressing the Enter key.

where

lim_no
is the number of the LIM indicated in log PM181

Recovering a composite clock (continued)

Example of a MAP response for LPPs:

```
LIM  1  ISTB
                Links_OOS Taps_OOS
    Unit0: ManB      2      16
    Unit1: InSv      .      .
```

Example of a MAP response for ELPPs:

```
LIM 0  ISTB     OOS     OOS_Taps
                Links  LIS1  LIS2  LIS3
Unit0: ManB     2       12    12    12
Unit1: InSv     .       .     .     .
```

5 Refer to the MAP display in step 4 to determine if the processor is an LPP or an ELPP.

If the processor is	Do
LPP	step 6
ELPP	step 7

6 Access the F-bus level of the MAP display by typing

>FBUS

and pressing 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      .M.. .I..S... .... ---- ---- ---- ---. ..--
```

Note: In the example, B indicates that the F-bus is manual busy or that the controlling LIM unit is system busy or manual busy, a dot (.) indicates an in-service tap, M indicates a manual-busy tap, I indicates an in-service trouble tap, S indicates a system-busy tap, and a dash (-) indicates an unequipped tap.

Go to step 9.

7 Access the LIS level of the MAP display by typing

>LIS lis_no

and pressing the Enter key.

where

lis_no
is the number of the link interface shelf (LIS): 1, 2, or 3

Example of a MAP display:

Recovering a composite clock (continued)

```
LIS 1                Tap: 0    4     8
FBus0: InSv               II.. --.-   ..II
FBus1: ManB               BBBB --B-   BBBB
```

Note: In the example, B indicates that the F-bus is manual busy or that the controlling LIM unit is system busy or manual busy, a dot (.) indicates an in-service tap, M indicates a manual-busy tap, I indicates an in-service trouble tap, S indicates a system-busy tap, and a dash (-) indicates an unequipped tap.

8 Repeat step 7 for the remaining two LISs.

9 Determine if either F-bus is in ISTb state.

If either F-bus is	Do
in ISTb state,	step 10
anything else	step 16

10 Contact the personnel responsible for maintaining the timing signal generator (TSG) and determine if the TSG is working.

If the TSG is	Do
working	step 15
not working	step 11

11 Wait until the personnel responsible for maintaining the TSG returns it to service.

12 Determine if the HLIU that is in ISTb state due to the composite clock failure is also in ManB, or OffL state, and if it requires recovery.

If HLIU	Do
is in OffL state and requires recovery,	step 13
is in ManB state and requires recovery,	step 14
does not require recovery,	step 15

Note: When the composite clock is down, the HLIU goes into ISTb state. The HLIU in ISTb state returns to in-service state when the composite clock is recovered. Do not attempt to recover the HLIU with the RTS command. Use step 12, 13 and 14 to return a stuck HLIU to service,

13 Manually busy the HLIU that is in OffL state by typing

`>BUSY hliu_no`

where

Recovering a composite clock (continued)

hliu_no
is the number of the HLIU

14 To return an ISTb HLIU in ManB or OffL state to service, type

>RTS FORCE

and press the Enter key.

Note: If you attempted an RTS before performing the RTS FORCE command on the HLIU, the HLIU will remain in the ISTb state even after the composite clock is recovered. Refer to step 17 for information on how to clear an HLIU of ISTb state after the composite clock is recovered.

The following is a description of what happens after you apply the RTS FORCE command to an HLIU:

If the composite clock	Dothen
is the preferred clock for the HLIU,	the HLIU returns to service in an ISTb state. When the composite clock is restored, the system clears the ISTb state from the HLIU and returns it to the InSv (In-service) state.
is not the preferred clock for the HLIU,	the HLIU returns to the ISTb state, and then the InSv state.

15 Wait 5 min to see if the links become synchronized.

If the links	Do
become synchronized	step 20
do not become synchronized	step 16

16 For further assistance, contact the personnel responsible for the next level of support.

17 For HLIUs that remain in ISTb state after the composite clock is recovered, determine the condition by typing

>QUERYFLT

and pressing the Enter key.

Note: Check for the failed 00S test. A failed 00S test indicates that the HLIU was in ISTb state when the composite clock failed. If there is no failed 00S test, follow the "Recovering a stuck HLIU" procedure to clear the HLIU of ISTb state.

18 To clear the HLIU of ISTb condition after the composite clock is recovered, perform this step and step 19 during a scheduled maintenance interval. To start clearing, manually busy the HLIU by typing

>BUSY hliu_no

and pressing the Enter key.

Recovering a composite clock (end)

where

hliu_no
is the number of the HLIU

19 To return the ManB HLIU to service, type

>RTS hliu_no

and press the Enter key.

where

hliu_no
is the number of the HLIU

Note: Perform the above procedure during a scheduled maintenance interval.

20 You have completed this procedure.

Recovering from a dead system in a SuperNode switch

Application

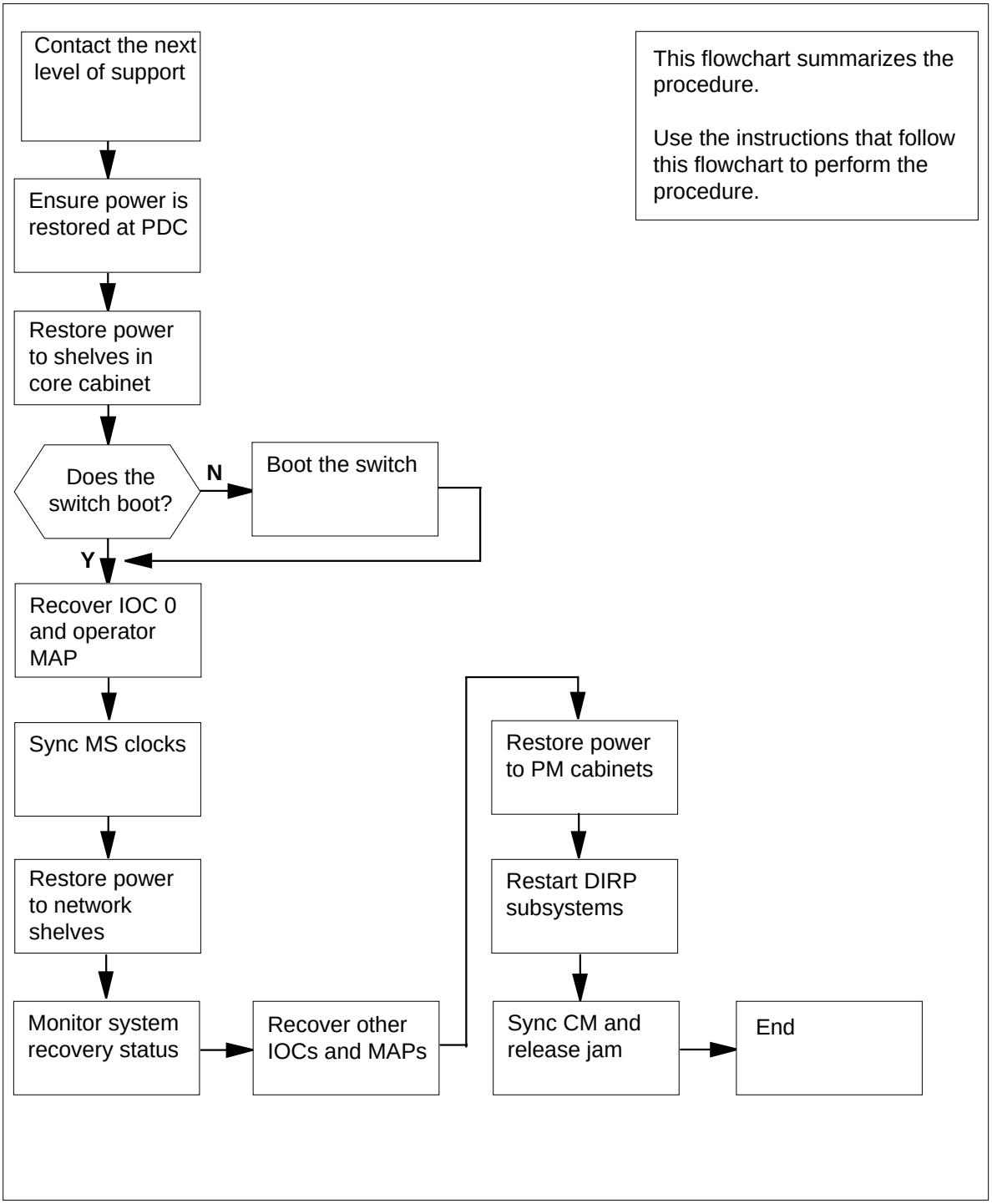
Use this procedure to recover a dead system. Consider a DMS SuperNode switch dead when the switch does not have power. This power loss is the result of the loss or interruption of A and B dc power feeds to the power distribution centers (PDC).

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 recovery procedure.

Recovering from a dead system in a SuperNode switch (continued)

Summary of Recoverying from a dead system in a SuperNode switch



Recovering from a dead system in a SuperNode switch (continued)

Recovering from a dead system in a SuperNode switch

DANGER
Contact ETAS or your next level of support
In the event of a dead system, contact Emergency Technical Assistance Services (ETAS) at Nortel, or your next level of support, before you perform this procedure.

DANGER
Risk of electrocution
Do not touch the cabinet wiring. Contact with cabinet wiring that is not shielded can result in electric shock. Only qualified power maintenance personnel must perform the voltage measurements in step 3.

At the PDC

1 When you detect the power outage, remove all fuse holders from the PDCs. Remove the fuse holder for the LCE talk batteries, TME talk batteries, and PDC filter fuses.

Note: The location of the fuse holders in the fuse panel depends on your office configuration. To locate the fuse holders, consult the fuse assignment diagram for your office or contact the next level of support for help.

2 The voltage of the feed that powers the system (-48 V dc or -60 V dc) determines the next step.

If the system	Do
uses -48 V dc	step 3
uses -60 V dc	step 4

3 When power is restored at the power plant for your office, notify power maintenance personnel. The power maintenance personnel must verify that an acceptable power level is restored for each PDC. At the rear of each PDC, measure the dc voltage across the A feed bus and the battery return plate. Repeat for the B feed bus. The power is restored when the voltage on is -48 V dc.

Note: The system distributes power at the potential of -48 V dc. In extreme conditions, like a commercial power failure, the operating voltage can range from -43.75 V dc to -55.8 V dc.

If power	Do
is restored	step 6

Recovering from a dead system in a SuperNode switch (continued)

If power	Do
is not restored	step 5

4 When power is restored at the power plant for your office, notify power maintenance personnel. The power maintenance personnel verify that an acceptable power level is restored for each PDC. At the rear of each PDC, measure the dc voltage across the A feed bus and the battery return plate. Repeat for the B feed bus. The power is restored when the voltage on is -60 V dc.

Note: The system distributes power at a potential of -60 V dc. In extreme conditions like a commercial power failure, the operating voltage can range from -57.4 V dc to -67.7 V dc.

If power	Do
is restored	step 6
is not restored	step 5

At the power room

5 To restore power to the PDC, contact the personnel responsible for power maintenance at your site for help.

When power returns to the PDC, return to this point.

At the PDC

6 Inspect the alarm-indicating fuses for the dual-plane combined core (DPCC) and network cabinets.

If a fuse	Do
has blown	step 7
has not blown	step 14

7 Replace the blown cartridge fuse in the back of the affected fuse holder. Make sure that the amperage of the replacement cartridge fuse matches the amperage marked on the PDC.

8 Remove the blown alarm-indicating fuse from the front of the fuse holder.

9 Reinsert the empty fuse holder into the PDC.

10 Obtain a replacement alarm-indicating fuse.

11 Insert the replacement fuse into the fuse holder.

12 Proceed as follows:

If	Do
fuses continue to blow	step 13
fuse replacement is successful	step 14

Recovering from a dead system in a SuperNode switch (continued)

13 Contact your next level of support for help.

When you replace all blown fuses, and power returns to the DPCC and network cabinets, proceed to step 14.

14 To assist in the recovery, a second person can restore power from the PDC to the peripheral module frames. Steps 103 through 136 of this procedure describe power restoration. To recover the core and network, complete steps 15 through 89. If only one person is available, recover the core and network first.

15 Determine if the switch is equipped with a remote oscillator shelf (Bliley shelf).

If the switch	Do
is equipped with a remote oscillator shelf	step 16
is not equipped with a remote oscillator shelf	step 17

At the remote oscillator shelf

16 Turn on the power converters for the shelf.

At the DPCC cabinet

17 Locate the two NT9X47 power converters for the system load module (SLM) shelf from slots 1F and 33F on that shelf.

18 Turn on the two NT9X47 power converters at the same time, lift and release the power switches. The power switches are located on the faceplates of the converters.

19 Locate the two NT9X30 power converters for the SLM shelf from slots 4F and 36F on that shelf.

20 Turn on the two NT9X30 power converters at the same time, lift and release the power switches. The power switches are located on the faceplates of the converters.

21 Locate the NT9X31 and NT9X30 power converters for the message switch 0 (MS 0) shelf. Locate these power converters in slots 1F, 4F, 33F, and 36F on the MS 0 shelf.

22 Make sure the NT9X31 and NT9X30 power converters are turned off. If the power converters are turned on, turn off both converters. To turn off the power converters, push and release the power switches. The power switches are located on the faceplates of the converters.

23 Turn on the NT9X31 and NT9X30 power converters in slots 33F and 36F at the same time, lift and release the power switches. The power switches are located on the faceplates of the converters.

24 Turn on the NT9X31 power converter in slot 1F first, and the NT9X30 power converter in slot 4F last. To turn on the power converters, lift and release the power switches. The power switches are located on the faceplates of the converters.

Recovering from a dead system in a SuperNode switch (continued)

25 Locate the NT9X31 and NT9X30 power converters for the message switch 1 (MS 1) shelf. Locate these power converters in slots 1F, 4F, 33F, and 36F on the MS 1 shelf.

26 Make sure the NT9X31 and NT9X30 power converters are off. If the power converters are turned on, turn off both converters. To turn off the power converters, push and release the power switches. The power switches are located on the faceplates of the converters.

27 Turn on the NT9X31 and NT9X30 power converters in slots 33F and 36F at the same time. To turn on the power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

28 Turn on the NT9X31 power converter in slot 1F first and the NT9X30 power converter in slot 4F last. To turn on the power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

29 Locate the two NT9X31 power converters for the computing module (CM) shelf from slots 1F and 33F on that shelf.

30 Make sure that both power converters are off. If the converters are on, turn off both power converters. To turn off the power converters, push and release the power switches. The power switches are located on the faceplate of each converter.

31 Turn on the two NT9X31 power converters at the same time. To turn on the power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

32 Locate the two NT9X30 power converters for the CM shelf.

Note: Locate the NT9X30 power converters from slots 4F and 36F on the CM shelf.

33 Turn on the two NT9X30 power converters at the same time. To turn on the power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

34 Determine if all the converters have power. When all of the Converter Off lights are off, the converter has power.

If	Do
all the converters have power	step 36
none of the converters have power	step 35

35 To power up the frame, perform the *Clearing an Ext FSP DPCC cabinet major alarm* procedure in *Alarm and Performance Monitoring Procedures*.

When you have completed the procedure, return to this point.

Go to step 17.

Recovering from a dead system in a SuperNode switch (continued)

At the CM reset terminal for the INACTIVE CPU

36 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key

RTIF response:

```
JAM RELEASE DONE
```

At the CM reset terminal for the ACTIVE CPU

37 Monitor the CM reset terminal for the active CPU to determine if the switch booted.

Note: When the switch boots, the reset terminal displays the response “Booting" followed by various diagnostic messages. The status bar displays alphanumeric addresses. When the switch boot completes, A1 flashes in the status bar.

If A1	Do
flashes	step 44
does not flash after 15 min	step 38

At the CM reset terminal for the INACTIVE CPU

38 To jam the inactive CPU, type

>\JAM

and press the Enter key.

RTIF response:

```
Please confirm: (YES/NO)
```

39 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
JAM DONE
```

At the CM reset terminal for the ACTIVE CPU

40 To override the active CPU, type

>\OVERRIDE

and press the Enter key.

RTIF response:

```
TEMP. RESET/JAM ENABLE
```

Recovering from a dead system in a SuperNode switch (continued)

41 To boot the active CPU, type

>\BOOT SLM slm_no

and press the Enter key.

where

slm_no
is the number of the SLM (0 or 1) that contains the most recent image file

Example input:

>\BOOT SLM 0

RTIF response:

```
Please confirm: (YES/NO)
```

42 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
JAM DONE
```

43 Wait until A1 flashes on the reset terminal for the active CPU to determine if the switch booted.

If A1	Do
flashes	step 44
does not flash after 15 min	step 183

At the IOD frame

44 Turn on the power converters on input/output controller 0 (IOC 0).

Note: The vintage of IOC determines if the IOC is equipped with one or two power converters.

45 Press the reset button on one of the IOC power converters. Hold the reset button and lift the FSP circuit breaker switch for IOC 0.

46 Release the reset button.

47 Turn on the power inverter that supplies the operator MAP.

Recovering from a dead system in a SuperNode switch (continued)

At the operator MAP terminal

48

WARNING
Extended service interruption
The exact login procedure depends on your office configuration. If you need further assistance, contact the personnel responsible for the next level of support.

Determine if you have to log in.

Note: The message Please Login indicates that you must log in. Your office parameters determine the login procedure. Your login can be automatic.

Example of a MAP response:

```
Please Login.
```

If you	Do
have to log in	step 49
are logged in automatically	step 53

49 Press the Break key.

MAP response:

?

50 To log in to the MAP terminal, type

>LOGIN

and press the Enter key.

MAP response:

```
Enter User Name
```

51 To enter the user name, type

>user_name

and press the Enter key.

where

user_name
is the name of the user for the account

MAP response:

```
Enter Password
```

Recovering from a dead system in a SuperNode switch (continued)

52 To enter the password, type

>password

and press the Enter key.

where

password
is the password for the account

Example of a MAP response:

```
SuperNode1 Logged in on 1993/03/11 at 20:37:17.
```

53 To turn on priority, type

>PRIORITY ON

and press the Enter key.

MAP response:

```
Pref>
```

54 To determine if the system time is correct, type

>TIME

and press the Enter key.

Example of a MAP response:

```
Time is 14:55:50
```

If the system time	Do
is correct	step 57
is not correct	step 55

55 To enter the correct time (by the 24-h clock), type

>SETTIME hh mm

and press the Enter key.

where

hh
is the hour (00 to 23)

mm
is the minute (00 to 59)

Example input:

>SETTIME 16 55

Example of a MAP response:

Recovering from a dead system in a SuperNode switch (continued)

```
Warning:    There is an automated TOD clock change
            request scheduled on:
            1996/10/15 at 1:00 (see table DSTTABLE).
            Do you want to proceed with this request?
            Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

56 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
Time is 16:55:00 on TUE 1996/10/15.
```

57 Determine if the system date is correct.

If the system date	Do
is correct	step 60
is not correct	step 58

58 To enter the correct date, type

>SETDATE dd mm yyyy

and press the Enter key.

where

dd
is the day (01 to 31)

mm
is the month (01 to 12)

yyyy
is the year

Example input:

>SETDATE 12 07 1996

Example of a MAP response:

```
setdate  12 07 1996
Warning:    There is an automated TOD clock change
            request scheduled on:
            1996/10/30 at 1:00 (see table DSTTABLE).
            Do you want to proceed with this request?
            Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

59 To confirm the command, type

>Y

and press the Enter key.

Recovering from a dead system in a SuperNode switch (continued)

Example of a MAP response:

```
Date is THU.  12/JUL/1996  00:00:00
```

60 To access the SRSTATUS level of the MAP display, type

>MAPCI;MTC;SRSTATUS

and press the Enter key.

Example of a MAP display:

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                        11:52:34
 2  View_       Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS     0    0      2       0   IOD   5     5      30     2
 4        NET    0    0      6       0   Other 21    3      13     3
 5        SER1   0    1      6       0
 6        SER2   1    1      60      1
 7        SER3   11   8      30      1
 8
 9        SRSTATUS:
```

61 Determine the recovery status of the MSs.

Note: MS recovery status appears to the right side of the word MS in the MAP display. Recovery status for each MS can be one of pending, in progress, complete, or failed.

If status of either MS	Do
is failed recovery	step 183
is pending recovery	step 62
is other than listed here	step 63

62 Wait for recovery of both MSs to be in-progress, or complete.

When both MSs are no longer pending recovery, go to step 61.

63 To access the MS Clock level of the MAP display, type

>MS;CLOCK

and press the Enter key.

64 To synchronize the clocks, type

>SYNC

and press the Enter key.

If the SYNC command	Do
succeeded	step 66
failed	step 65

Recovering from a dead system in a SuperNode switch (continued)

65 Record the reason for synchronization failure, as shown in the MAP response. Continue this procedure at step 66 to recover networks and peripheral modules. Repeat the attempt to synchronize the MS clocks after the networks and the PMs are in-service.

66 Determine the type of network equipped on your switch.

If the network type	Do
is ENET	step 67
is JNET	step 78

At the ENET frames

67 Locate the NT9X31 power converters in slots 1F and 33F on the ENET shelves.

68 Make sure that the power converters are off. If the converters are not off, turn off the power converters. To turn off the power converters, push and release the power switches. The power switches are located on the faceplate of each converter.

69 To turn on the NT9X31 power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

70 Locate the NT9X30 power converters in slots 4F and 36F on the ENET shelves.

71 To turn on the NT9X30 power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

72 Determine if all the converters powered up. If all the Converter Off lights are off, all the converters have power.

If	Do
all the converters have power	step 74
any converters do not have power	step 73

73 To power up the ENET frame, perform the *Clearing an Ext FSP DPCC cabinet major alarm* procedure in *Alarm and Performance Monitoring Procedures*.

When you complete the procedure, return to this point.

Go to step 67.

At the MAP terminal

74 To access the SRSTATUS level of the MAP display, type

>SRSTATUS

and press the enter key.

Example of a MAP display:

Recovering from a dead system in a SuperNode switch (continued)

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

75 From the MAP display, determine the recovery status of the network.

Note: Network recovery status appears to the right side of the word NET in the MAP display. The recovery status can be pending, in progress, complete, or failed.

If the status of any network element	Do
is failed	step 77
is pending	step 76
is other than listed here	step 90

76 Wait until there are no network elements pending recovery.

Go to step 75.

77 To recover the ENET manually, perform the procedure *Recovering Enhanced Network* in this document.

When you complete the procedure, return to this point.

Go to step 74.

At the JNET shelf

78

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Locate the first junctored network shelf to recover.

Recovering from a dead system in a SuperNode switch (continued)

79 Determine if the power converter is an NT2X70AE card.

If the power converter	Do
is an NT2X70AE card	step 80
is not an NT2X70AE card	step 83

80 Determine if the FSP or MSP has circuit breakers.

If the FSP or MSP	Do
has circuit breakers	step 81
does not have circuit breakers	step 82

81 Power up the converter.

a Pull and set the handle of the POWER switch up to the RESET position and hold.

b Set the handle of the converter circuit breaker on the FSP or MSP up. The handle clicks into place.

c Release the handle.

d Go to step 86.

82 Power up the converter.

a Pull and set the handle of the POWER switch up to the RESET position and hold. The CONVERTER FAIL LED goes off.

b Release the handle.

c Go to step 86.

83 Determine if the FSP or MSP has circuit breakers.

If the FSP or MSP	Do
has circuit breakers	step 84
does not have circuit breakers	step 85

84 Power up the converter.

a Pull and set the handle of the POWER switch up to the ON position.

b Press and hold the RESET button on the power converter.

c Set the handle of the converter circuit breaker on the FSP or MSP up. The handle clicks into place.

d Release the RESET button.

e Go to step 86.

85 Power up the converter.

a Pull and set the handle of the POWER switch up to the ON position.

Recovering from a dead system in a SuperNode switch (continued)

b Press the RESET button on the power converter until the CONVERTER FAIL LED goes off.

c Release the RESET button.

At the MAP terminal

86 To access the NET level of the MAP display, type

>NET

and press the Enter key.

Example of a MAP display:

```
Net
                        11111  11111  22222  22222  33
Plane 01234   56789   01234  56789  01234  56789  01
  0  0000
  1  0000
JNET:
```

87 To manually busy the network module for a return to service, type

>BSY plane_no pair_no

and press the Enter key.

where

plane_no
is the network plane number (0 or 1)

pair_no
is the network plane pair number (0 to 31)

88 To return the network module to service, type

>RTS plane_no pair_no

and press the Enter key.

where

plane_no
is the network plane number (0 or 1)

pair_no
is the network plane pair number (0 to 31)

89 Repeat steps 78 through 88 for each JNET shelf.

When all JNET shelves are recovered, proceed to step 90.

90 Determine if there are additional IOCs and MAP terminals to recover.

If additional IOCs and MAP terminals	Do
require recovery	step 91
are recovered	step 103

91 Restore power to all power inverters in the office that remain.

Recovering from a dead system in a SuperNode switch (continued)

At the IOC

92 Locate the IOC for recovery.

If the controller	Do
is IOC	step 93
is IOM	step 97

93 Turn on the power converters on the IOC.

Note: The vintage of the IOC determines if the IOC is equipped with one or two power converters.

94 Press the reset button on one of the IOC power converters and hold the reset button. Lift the associated circuit breaker switch on the FSP.

95 Release the reset button.

96 Repeat steps 92 through 95 for each IOC to recover. Proceed to step 97.

97 To access the IOD level of the MAP display, type

```
>IOD
```

and press the Enter key.

98 To access the IOC level of the MAP display for the IOC that requires recovery, type

```
>IOC  ioc_no
```

and press the Enter key.

where

ioc_no
is the number of the IOC or input/output module (IOM) to berecovered

99 To manually busy the IOC or IOM, type

```
>BSY  ioc_no
```

and press the Enter key.

where

ioc_no
is the number of the IOC or IOM

100 To return the IOC or IOM to service, type

```
>RTS  ioc_no
```

and press the Enter key.

where

ioc_no
is the number of the IOC or IOM

101 Repeat steps 98 through 100 for each IOC or IOM to recover. Proceed to step 102.

102 Log in to additional MAP terminals as required.

Note: Steps 48 through 52 describe how to log in to the MAP terminal.

Recovering from a dead system in a SuperNode switch (continued)

103 Determine if your switch is equipped with one or more link peripheral processors (LPP).

If the switch you recover	Do
has LPPs	step 104
has LPPs or ELPPs	step 104
does not have LPPs	step 121
does not have LPPs or ELPPs	step 121

104 Determine if PDC power is restored to the LPP(s).

If PDC power	Do
is restored to the LPPs	step 108
is restored to the LPPs or ELPPs	step 108
is not restored to the LPPs	step 105
is not restored to the LPPs or ELPPs	step 105

105 Check the PDC fuses that supply the LPP.

If a fuse	Do
has blown	step 106
has not blown	step 107

106 Replace the blown fuses.

Note: If fuses blow repeatedly, contact your next level of support for help.

When PDC power returns to the LPPs, go to step 108.

107 Contact the personnel responsible for power maintenance at your site, or consult your next level of support for help.

When PDC power returns to the LPPs, proceed to step 108.

108 Locate the LPPs for recovery.

Recovering from a dead system in a SuperNode switch (continued)

At the LPP cabinet
At the LPP or ELPP cabinet

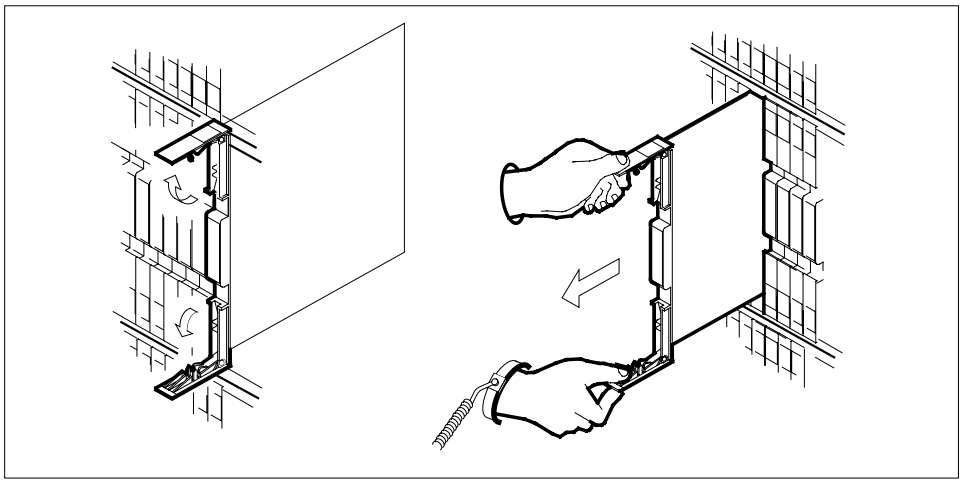
109

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. This protects the cards against static electricity damage.

Locate the NT9X74 cards in all link interface shelves (LIS).

Note: Locate the NT9X74 cards from shelf positions 7F and 32F on all LISs.

110 To unseat each NT9X74 card, unlatch the locking levers. Carefully pull the card toward you 25 mm (1 in.).



111 Locate the NT9X30 power converters in slots 4F and 36F of the link interface module (LIM) unit shelf.

112 Locate the NT9X30 or NTDX16 power converters for each LIS.

Note: Locate the NT9X30 power converters from slots 4F and 36F for each LIS. Another location for the NTDX16 power converters is in slots 1F, 4F, 33F, and 36F for each LIS.

113 To turn on the LIS power converters, toggle the switch on each NT9X30 or NTDX16 card.

114 Determine if all the converters have power. When the Converter Off lights are not lit, the converters have power.

If	Do
all the converters have power	step 116

Recovering from a dead system in a SuperNode switch (continued)

If	Do
any converters do not have power	step 115

115 To power up the frame, perform the *Clearing an Ext FSP LPP cabinet major alarm* procedure in *Alarm and Performance Monitoring Procedures*.

When you complete the procedure, return to this point.

Go to step 111.

116 Reseat all NT9X74 cards as follows:

a Carefully slide the card back into the LIS.

b Push on the upper and lower edges of each faceplate to reseat the card on the shelf.

c Close the locking levers on each card.

117 Repeat steps 108 through 116 for each LPP in your office.

When power returns to all LPPs, proceed to step 118.

118 To access the SRSTATUS level of the MAP display, type

>SRSTATUS

and press the enter key.

Example of a MAP display:

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

119 From the MAP display, determine the recovery status of the Series III PMs.

Note: Series III PM recovery status appears to the right side of the word “SER3" in the MAP display. Recovery status can be one of pending, in progress, complete, or failed.

If the number of Series III PMs that fail recovery	Do
is zero	step 121
is other than listed here	step 120

120 To recover the PMs manually, perform the *Recovering Link Peripheral Processors* procedure in this document.

When the procedure is complete, return to this point.

Recovering from a dead system in a SuperNode switch (continued)

121 Steps 122 through 136 describe how to restore power from the PDC to Series I and Series II peripheral module frames. Proceed as follows:

If PDC power	Do
is restored to the PM frames	step 137
is not restored to the PM frames	step 122

122 Obtain one of the following capacitor charging tools:

- a 100-W, 120-V light bulb in a socket that has pigtail leads
- tool number T000655 (CPC number NTA0600512), that has a fuse holder-style connector instead of pigtail leads for easier insertion

At the PDC

123

DANGER
Possible equipment damage or extended service interruption
Use the correct fuses. When you return fuses to the PDC, make sure that the amperage of the fuses match the amperage marked on the PDC.

At the first empty fuse slot in the PDC, connect the leads of the capacitor charging tool across the contacts for the fuse holder until the lamp dims. If you use a charging tool with a fuse holder-style connector, insert the connector into the slot until the lamp dims.

124 Remove the capacitor charging tool and immediately reinsert the correct fuse holder into the slot.

125 Repeat steps 123 and 124 for the LCE talk battery, TME talk battery, and PDC filter fuse holders, removed in step 1. When all fuses are restored to the PDCs, continue this procedure.

126 Determine if any alarm-indicating fuses are blown.

Note: The fuse alarm-indicator lamp lights when an alarm indicates a blown fuse.

If an alarm-indicating fuse	Do
has blown	step 127
has not blown	step 137

127 Locate a fuse holder with a blown alarm-indicating fuse.

Note: Replace blown fuses in any order.

128 A blown cartridge fuse is in the fuse holder. Remove the fuse holder from the PDC.

Recovering from a dead system in a SuperNode switch (continued)

129 Replace the blown cartridge fuse in the back of the fuse holder. Make sure that the amperage of the replacement cartridge fuse matches the amperage marked on the PDC.

130 Remove the blown alarm-indicating fuse from the front of the fuse holder.

131 Reinsert the fuse holder, with the alarm-indicating fuse removed, into the PDC.

132 Obtain a replacement alarm-indicating fuse.

133 Insert the replacement alarm-indicating fuse into the fuse holder.

134 Determine if the alarm-indicating fuse blows.

Note: The fuse alarm indicator lamp lights when an alarm-indicating fuse blows.

If the alarm-indicating fuse	Do
blows	step 183
does not blow	step 135

135 Determine if all the blown alarm-indicating fuses are replaced.

If all the blown alarm-indicating fuses	Do
are replaced	step 136
are not replaced	step 127

136 Determine if the fuse alarm indicator lamp is lit.

If the fuse alarm indicator lamp	Do
is lit	step 183
is not lit	step 137

At the PM frames

137 Select a peripheral module (PM) frame to power up.

Note: Power up the PM frames in any order.

138 Locate the frame supervisory panel (FSP) and the power converters on the frame.

139 Determine if the FSP for the frame has fuses or breakers.

If the FSP	Do
has fuses	step 140
has breakers	step 145

Recovering from a dead system in a SuperNode switch (continued)

140 Determine if the power converters have Power Reset buttons or Power Reset switches.

If the power converters	Do
have Power Reset buttons	step 141
have Power Reset switches	step 143

141 To turn on each power converter, press and hold the Power Reset button for 2 s.

Note: The Converter Fail light is not lit when the power converter has power.

142 Determine if all the converters have power. The Converter Fail lights are not lit when the converters have power.

If	Do
all the converters have power	step 147
any converters do not have power	step 148

143 To turn on each power converter, pull the power switch out and toggle the switch to the Power Reset position.

Note: The Converter Fail light is not lit when the power converter has power.

144 Determine if all the converters have power. When the Converter Fail lights are not lit the converters have power.

If	Do
all of the converters have power	step 147
any of the converters do not have power	step 148

145 Turn on each power converter, as follows:

a toggle the breaker to the ON position

b press and hold the Power Reset button for 2 s

c release the breaker and the Power Reset button

Note: The Converter Fail light is not lit when the power converter has power.

146 Determine if all the converters have power. When the Converter Fail lights are not lit the converter have power.

If	Do
all of the converters have power	step 147

Recovering from a dead system in a SuperNode switch (continued)

If	Do
any of the converters do not have power	step 148

147 Determine if all PM frames have power.

If	Do
all frames have power	step 151
any frames do not have power	step 148

148 Determine if an attempt to restore power to the remaining frames occurred.

If an attempt to restore power to the remaining frames	Do
did not occur	step 149
failed	step 150

149 Power up the next frame.

Go to step 138.

150 To power up the PM frames that remain, perform the correct procedures in *Alarm and Performance Monitoring Procedures*. Complete the procedure and return to this point.

At the MAP terminal

151 To access the SRSTATUS level of the MAP display, type

>SRSTATUS

and press the enter key.

Example of a MAP display:

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_       Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS     0    0      2       0   IOD   5     5      30     2
 4        NET    0    0      6       0   Other 21    3      13     3
 5        SER1   0    1      6       0
 6        SER2   1    1      60      1
 7        SER3   11   8      30      1
 8
 9        SRSTATUS:
```

152 From the MAP display, determine the recovery status of the Series I and II PMs.

Note: Series I PM recovery status appears to the right side of the word SER1 in the MAP display, Series II PM recovery status appears to the right

Recovering from a dead system in a SuperNode switch (continued)

side of the word SER2 in the MAP display. The recovery status can be pending, in progress, complete, or failed.

If the number of Series I and II PMs that failed recovery	Do
is zero	step 155
is other than listed here	step 153

153 Determine from office records or other office personnel the first PM to recover.

154 To recover the PMs manually and in the required order, perform the correct alarm clearing procedures in *Alarm and Performance Monitoring Procedures*. Completed the procedures and return to this point.

155

WARNING
Loss of billing data
Depending on your office configuration, billing systems other than, or in addition to, AMA may be used. Contact your next level of support to determine if other billing systems are used, and if recovery action is required.

To access the DIRP level of the MAP display, type

```
>IOD;DIRP
```

and press the Enter key.

156 To determine the state of the recording volumes for the billing subsystem, type

```
>QUERY  subsystem  ALL
```

and press the Enter key.

where

subsystem
is the name of the DIRP subsystem for billing

Example input:

```
>QUERY  AMA  ALL
```

Example of a MAP response:

Recovering from a dead system in a SuperNode switch (continued)

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0     1       6      9       62 ***YES***
REGULAR
FILE(S) STATE VOLUME RECCOUNT BLOCK E V V_B VLID FNUM FRN#
ACTIVE    NONE
STANDBY1  NONE
PARALLEL
FILE          STATE VOLUME   BLOCK E  V V_B VLID FNUM FRN#
                NONE
REGULAR VOLUME(S)
VOL# VOLNAME  STATE      IOC CARD VOL FSEG ROOM VLID FILES
REGULAR SPACE
```

If	Do
the word NONE under the STATE header on the MAP display indicates that the volumes are not allocated.	step 158
any volume is IN ERROR, as indicated under the REGULAR VOLUME(S) header on the MAP display	step 157
all volumes are READY,as indicated under the REGULAR VOLUME(S) header on the MAP display	step 159

157 To reset any volumes IN ERROR, type

>RSETVOL vol_name

and press the Enter key.

where

vol_name
is the name of the volume to be reset

If the RSETVOL command	Do
passed	step 159
failed	step 183

158 Perform the *Allocating recording volumes in the DIRP utility* procedure in *Routine Maintenance Procedures*. Complete this procedure and return to this point.

Recovering from a dead system in a SuperNode switch (continued)

159 To determine the state of the DLOG recording volumes, type

>QUERY DLOG ALL

and press the Enter key.

Example of a MAP response:

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
DLOG      2     1     102     10  NONE    ***YES***
.
REGULAR
FILE(S) STATE VOLUME RECCOUNT BLOCK E V V_B VLID FNUM FRN#
ACTIVE  AVAIL S01DDLOG     6     6  0 22 NO  8447 0013 204D
STANDBY1 AVAIL S00DDLOG    0     0  0 23 NO  8408 0014 309B
.
REGULAR VOLUME(S)
VOL# VOLNAME  STATE      IOC CARD VOL FSEG ROOM VLID FILES
  22 S01DDLOG READY      N/A  N/A   7    5   18 8447 A
  23 S00DDLOG READY      N/A  N/A   8    4   18 8408 S1

REGULAR SPACE
VOL# VOLNAME  STATE      SEGS   EXP UNEXP TOTAL
  22 S01DDLOG READY         5    13     0    18
  23 S00DDLOG READY         4    14     0    18
```

If	Do
the word NONE under the STATE header on the MAP display indicates that volumes are not allocated.	step 161
any volume is IN ERROR, as indicated under the REGULAR VOLUME(S) header on the MAP display	step 160
all volumes are READY,as indicated under the REGULAR VOLUME(S) header on the MAP display	step 162

160 To reset any volumes IN ERROR, type

>RSETVOL vol_name

and press the Enter key.

where

Recovering from a dead system in a SuperNode switch (continued)

vol_name
is the name of the volume to be reset

If the RSETVOL command	Do
passed	step 162
failed	step 183

161 Perform the *Allocating recording volumes in the DIRP utility* procedure in *Routine Maintenance Procedures*. Complete the procedure and return to this point.

162 Determine from your next level of support if you need to recover other DIRP subsystems at this point (for example, JF, OM).

If other DIRP subsystems	Do
require recovery	step 163
do not required recovery	step 166

163 Perform the correct procedures in *Alarm and Performance Monitoring Procedures*. Complete the procedures, and return to this point.

164 To determine if the system generated DIRP logs , type

```
>LOGUTIL;OPEN  DIRP
```

and press the Enter key.

If the system	Do
generated DIRP logs	step 165
did not generate DIRP logs	step 166

165 Refer to the *Log Report Reference Manual* and take the correct action. Complete the log report activities and return to this point.

166 Determine if the attempt to synchronize the clocks in step 64 succeeded.

If synchronization	Do
succeeded	step 169
failed	step 167

167 To access the MS Clock level of the MAP display, type

```
>MS;CLOCK
```

and press the Enter key.

168 To synchronize the clocks, type

```
>SYNC
```

Recovering from a dead system in a SuperNode switch (continued)

and press the Enter key.

If the SYNC command	Do
succeeded	step 169
failed	step 183

169 To access the CM level of the MAP display, type

```
>CM
```

and press the Enter key.

170 Determine if the CPUs are in sync.

Note: A dot symbol under the Sync header indicates that the CPUs are in sync. The word no indicates that the CPUs are not in sync.

If the CPUs	Do
are in sync	step 176
are not in sync	step 171

171 Determine from the next level of support if you have permission to synchronize the CPUs.

If you	Do
have permission to synchronize the CPUs	step 172
do not have permission to synchronize the CPUs	step 176

172 Determine if the inactive CPU jammed.

Note: The word yes under the Jam header indicates that the CPU jammed. The area is blank if the CPU did not jam.

If the inactive CPU	Do
jammed	step 173
did not jam	step 174

At the CM reset terminal for the INACTIVE CPU

173 To release the jam on the inactive CPU, type

```
>\RELEASE  JAM
```

and press the Enter key.

RTIF response:

```
JAM RELEASE DONE
```

Recovering from a dead system in a SuperNode switch (continued)

At the MAP terminal

174 To synchronize the CPUs, type

>SYNC

and press the Enter key.

If the response indicates	Do
the SYNC command was successful	step 176
`The CPUs are out of sync due to a problem with mismatches. The mismatch logs should be analyzed before re-syncing.Do you wish to continue? Please Confirm(“YES", “Y", or “NO", “N")` (SuperNode and SuperNode SE series 70 only)	step 175
other than listed here	step 183

175 (SuperNode and SuperNode SE series 70 only)

To deny the action, type

>NO

and press the enter key.

Go to step 183.

176 To turn off priority, type

>PRIORITY OFF

and press the Enter key.

177 To access the SRSTATUS level of the MAP display, type

>MAPCI;MTC;SRSTATUS

and press the Enter key.

Example of a MAP display:

Recovering from a dead system in a SuperNode switch (end)

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                        11:52:34
 2  View_       Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS     0    0      2       0   IOD   5     5      30     2
 4        NET    0    0      6       0   Other 21    3      13     3
 5        SER1   0    1      6       0
 6        SER2   1    1      60      1
 7        SER3   11   8      30      1
 8
 9        SRSTATUS:
```

178 Determine the system recovery status.

If	Do
any Series III PMs failed recovery	step 179
any Series I or II PMs failed recovery	step 180
any IODs or other devices and services failed recovery	step 182
the whole system recovered	step 184

179 To recover the PMs manually, perform the *Recovery of Link Peripheral Processors* procedure in this document.

Complete the procedure and return to this point.

Go to step 177.

180 Determine from office records or other office personnel the first PM to recover.

181 To recover the PMs manually and in the required order, perform the correct alarm clearing procedures in *Alarm and Performance Monitoring Procedures*.

Complete the procedure and return to this point.

Go to step 177.

182 To recover IODs, other devices and services manually, perform a procedure listed in this document or consult the operating procedures for your site.

183 For additional help, contact the personnel responsible for the next level of support.

184 This procedure is complete.

Recovering from a dead system in a SuperNode SE switch

Application

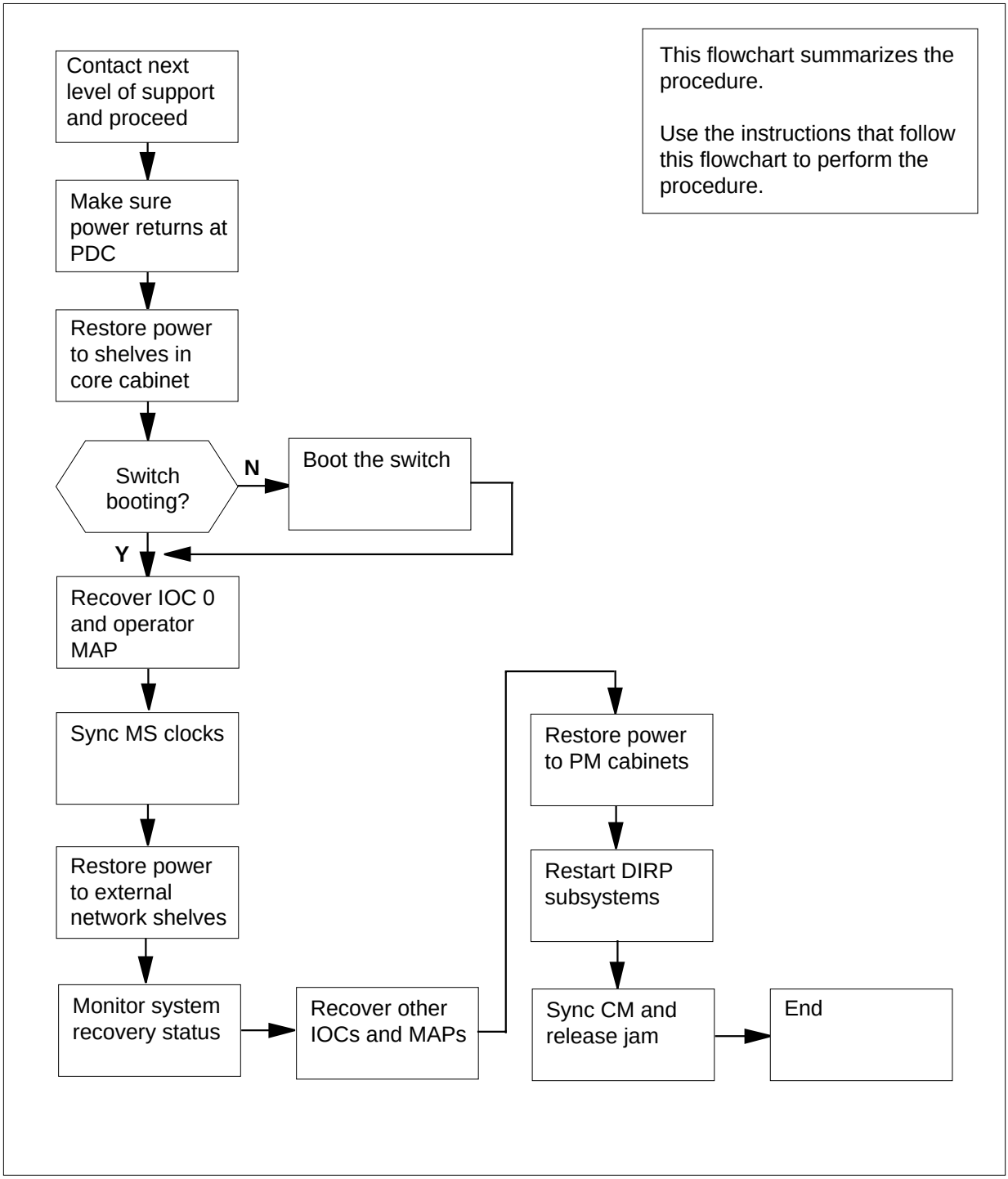
Use this procedure to recover a dead system. A DMS SuperNode SE switch is dead if the whole switch is without power. Loss or interruption of A and B dc power feeds to the power distribution centers (PDC) causes a dead switch.

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Recovering from a dead system in a SuperNode SE switch (continued)

Summary of Recovering from a dead system in a SuperNode SE switch



Recovering from a dead system in a SuperNode SE switch (continued)

Recovering from a dead system in a SuperNode SE switch

DANGER
Contact ETAS or the next level of support
In the event of a dead system, contact Emergency Technical Assistance Services (ETAS) of Nortel. Make sure you contact the next level of support before you perform this procedure.

DANGER
Risk of electrocution
Do not touch the cabinet wiring. Contact with cabinet wiring that is not shielded can result in electric shock. Only qualified power maintenance personnel can perform the voltage measurements in step 3.

At the PDC

1 As soon as possible after detection of the power failure, remove :

- fuse holders for the line concentrating equipment (LCE) talk batteries
- talk batteries for the trunk module equipment (TME)
- filter fuses for the power distribution center (PDC) from the appropriate PDCs

Note: The location of the fuse holders in the fuse panel can vary, according to your office configuration. Consult the fuse assignment diagram for your office for help to locate the fuse holders. Contact the next level of support for help to locate the fuses.

2 Determine if a -48 V dc feed or a -60 V dc feed powers the system.

If	Do
a -48 V dc feed powers the system	step 3
a -60 V dc feed powers the system	step 4

3 When you receive information that power returned to power plant for your office, consult power maintenance personnel. Have power maintenance personnel verify that acceptable power returned at each PDC. At the rear of each PDC, measure the dc voltage across the A feed bus and the battery

Recovering from a dead system in a SuperNode SE switch (continued)

return plate. Repeat for the B feed bus. Consider power restored when the voltage is -48 V dc on feeds A and B.

Note: Power distribution occurs at a standard potential of -48 V dc. Under varied conditions, like a commercial power failure, the operating voltage can range from -43.75 V dc to -55.8 V dc.

If power	Do
is restored	step 6
is not restored	step 5

4 When you receive information that power returned to the power plant for your office, consult power maintenance personnel. Have power maintenance personnel verify that acceptable power returned at each PDC. At the rear of each PDC, measure the dc voltage across the A feed bus and the battery return plate. Repeat for the B feed bus. Consider power restored when the voltage is -60 V dc on feeds A and B.

Note: Power distribution occurs at a standard potential of -60 V dc. Under varied conditions, like a commercial power failure, operating voltage can range from -57.4 V dc to -67.7 V dc.

If power	Do
is restored	step 6
is not restored	step 5

At the power room

5 For help to restore power to the PDC, contact the operating company personnel responsible for power maintenance at your site.

When power returns to the PDC, return to this point.

At the PDC

6 Inspect the alarm-indicating fuses for the SuperNode combined core (SCC) and network cabinets (if equipped).

If the fuses	Do
are blown	step 7
are not blown	step 14

7 Replace the blown cartridge fuse in the back of the affected fuse holder. Make sure that the amperage of the replacement cartridge fuse matches the amperage on a label on the PDC.

8 Remove the blown alarm-indicating fuse from the front of the fuse holder.

9 Insert the fuse holder into the PDC. Make sure you remove the alarm-indicating fuse from the fuse holder.

10 Obtain a replacement alarm-indicating fuse.

Recovering from a dead system in a SuperNode SE switch (continued)

11 Insert the replacement alarm-indicating fuse in to the fuse holder.

12 Proceed as follows:

If the	Do
fuses have blown repeatedly	step 13
fuse replacement is successful	step 14

13 Contact the next level of support for help.

Replace all blown fuses correctly, and restore power to the SCC and network cabinets. Go to step 14.

14 Restore power from the PDC to the peripheral module frames if a second person is available to help. The second person uses the information described in steps 106 through 143 of this procedure to restore power. While the second person restores power, complete steps 15 through 95 to recover the core and network. If only one person is available, recover the core and network first.

15 Determine if the switch has a remote oscillator shelf (Bliley shelf).

If the switch	Do
has a remote oscillator shelf	step 16
does not have a remote oscillator shelf	step 17

At the remote oscillator shelf

16 Turn on the power converters for the shelf.

At the SCC cabinet

17 Locate the two NT9X31 power converters for message switch 0 (MS 0) and message switch 1 (MS 1).

Note: Slots 1F and 33F on the MS shelf contain the NT9X31 power converters.

18 Ensure that the power converters are off. If they are not off, turn off the power converters by pushing down and releasing the power switches located on the faceplate of each converter.

19 Turn on the NT9X31 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X31 power converters.

20 Locate the two NT9X30 power converters for MS 0 and MS 1.

Note: Slots 4F and 36F on the MS shelf contain the NT9X30 power converters.

21 Turn on the NT9X30 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X30 power converters.

Recovering from a dead system in a SuperNode SE switch (continued)

22 Locate the two NT9X91 power converters for the system load modules (SLMs).

Note: Slots 1F and 36F on the CM/SLM shelf contain the NT9X91 power converters.

23 Turn on the two NT9X91 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X91 power converters.

24 Locate the two NTDX15 power converters for the computing module (CM).

Note: Slots 4F and 33F on the CM/SLM shelf contain the NTDX15 power converters.

25 Turn on the two NTDX15 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NTDX15 power converters.

26 Determine if the SCC cabinet has an enhanced network and interface (ENI) shelf.

If an ENI shelf	Do
is present	step 27
is not present	step 32

27 Locate the NT9X31 power converters in slots 1 and 33 on the ENI shelf.

28 Ensure that the power converters are off. If they are not off, turn off the power converters by pushing down and releasing the power switches located on the faceplate of each converter.

29 Turn on the NT9X31 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X31 power converters.

30 Locate the NT9X30 power converters in slots 4 and 36 on the ENI shelf.

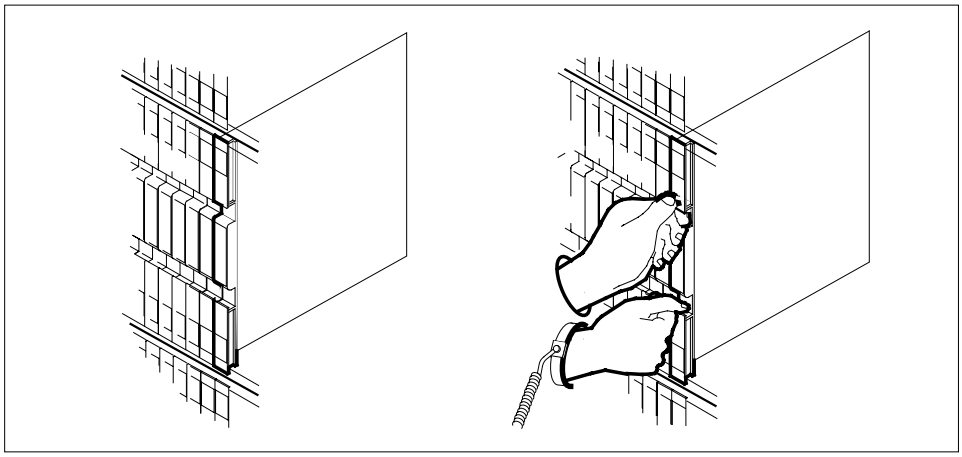
31 Turn on the NT9X30 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X30 power converters.

32 Determine if the SCC cabinet has a link interface shelf (LIS).

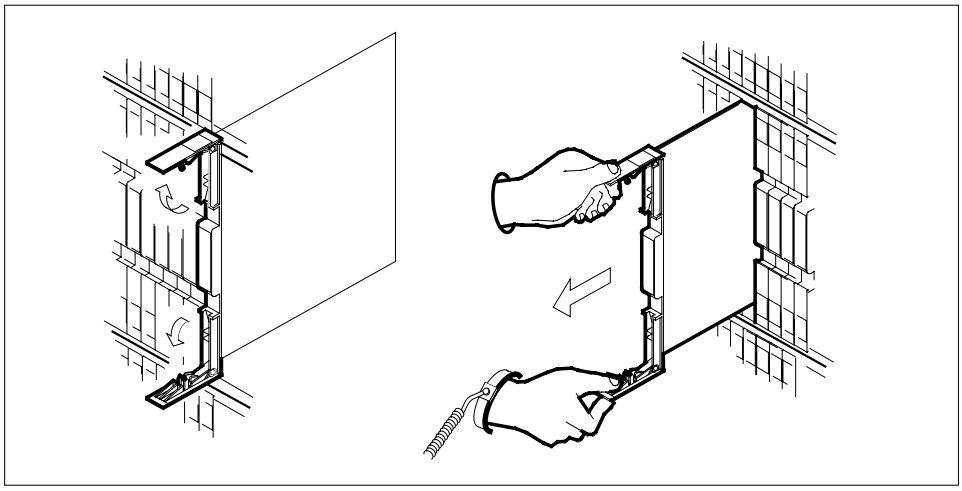
If an LIS	Do
is present	step 33
is not present	step 40

33 Locate the NT9X74 cards in slots 7F and 32F on the SCC LIS.

Recovering from a dead system in a SuperNode SE switch (continued)



34 Unlock the latches of the locking levers and carefully pull each NT9X74 card toward you 25 mm (1 in.).



35 Leave the NT9X74 cards seated in the slots.

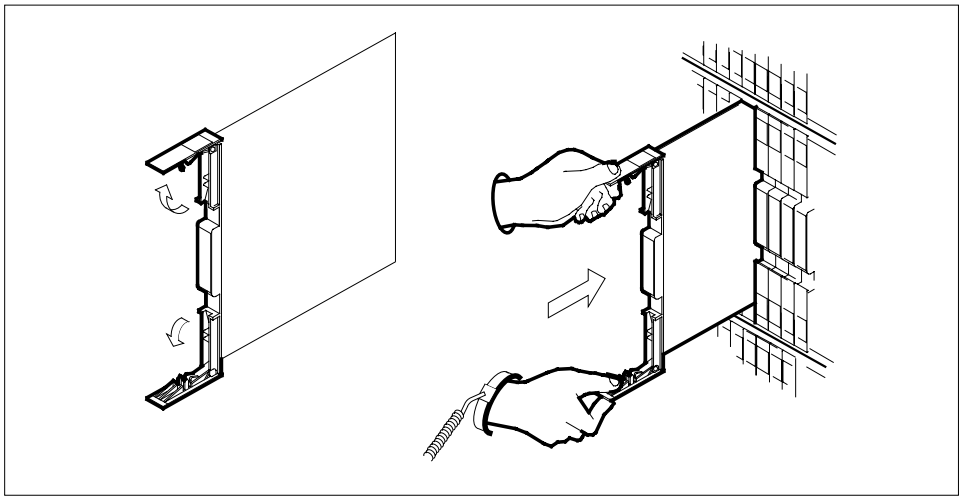
36 Locate the NT9X30 or NTDX16 power converters for the SCC LIS.

Note: Slots 4F and 36F on the SCC LIS contain the NT9X30 power converters. Slots 1F, 4F, 33F, and 36F on the SCC LIS contain the NTDX16 power converters.

37 Turn on the NT9X30 or NTDX16 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X30 or NTDX16 power converters.

38 Carefully slide the NT9X74 cards in slots 7F and 32F into the SCC LIS.

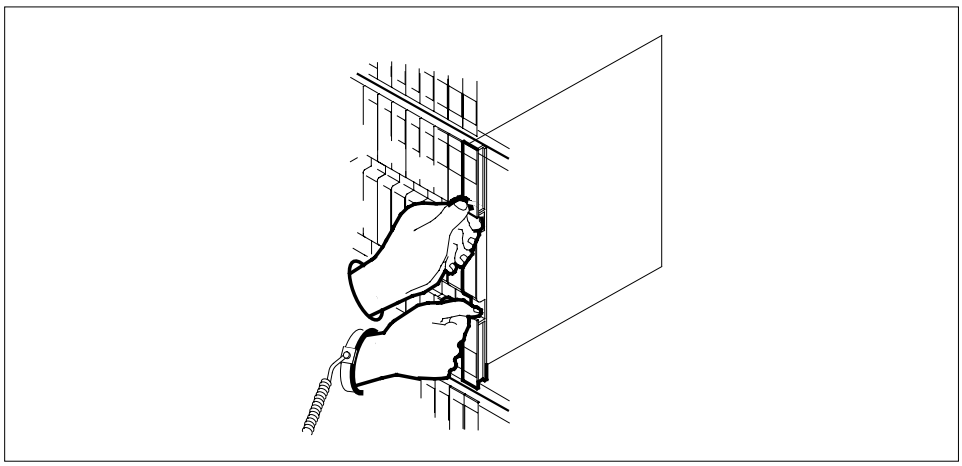
Recovering from a dead system in a SuperNode SE switch (continued)



39 Seat and lock the cards, as follows:

a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Make sure that the card sits completely in the shelf.

b Close the locking levers.



40 Determine if all the converters powered up correctly. All the Converter Off lights go off to indicate the converters powered up.

If all the converters	Do
powered up	step 42
did not power up	step 41

41 Power up the frame. Perform the procedure *Clearing an Ext FSP DPCC cabinet major alarm* in *Alarm and Performance Monitoring Procedures*.

Complete the procedure and return to this point.

Recovering from a dead system in a SuperNode SE switch (continued)

Go to step 36.

At the CM RESET terminal for the INACTIVE CPU

42 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key.

RTIF response:
JAM RELEASE DONE

At the CM RESET terminal for the ACTIVE CPU

43 Monitor the CM RESET terminal for the active CPU to determine if the switch booted.

Note: When the switch boots, the RESET terminal displays the response Booting, followed by different diagnostic messages. Alphanumeric addresses appear in the status bar of the RESET terminal. When the switch boots, A1 flashes in the status bar.

If A1	Do
flashes	step 50
does not flash after 15 min	step 44

At the CM RESET terminal for the INACTIVE CPU

44 To jam the inactive CPU, type

>\JAM

and press the Enter key.

RTIF response:
Please confirm: (YES/NO)

45 To confirm the command, type

>YES

and press the Enter key.

RTIF response:
JAM DONE

At the CM RESET terminal for the ACTIVE CPU

46 To override the active CPU, type

>\OVERRIDE

and press the Enter key.

RTIF response:
TEMP. RESET/JAM ENABLE

47 To boot the active CPU, type

>\BOOT SLM slm_no

Recovering from a dead system in a SuperNode SE switch (continued)

and press the Enter key.

where

slm_no
is the number of the SLM (0 or 1) that contains the most recent image file

Example input:

```
>BOOT  SLM 0
```

RTIF response:
Please confirm: (YES/NO)

48 To confirm the command, type

>YES

and press the Enter key.

RTIF response:
JAM DONE

49 Wait until A1 flashes on the RESET terminal for the active CPU. Determine if the switch booted.

If A1	Do
flashes	step 50
does not flash after 15 min	step 193

At the IOD frame

50 Turn on the power converters on input/output controller (IOC) 0.

Note: The vintage of IOC determines if the IOC has one or two power converters.

51 Press the RESET button on one of the IOC power converters. While you press the RESET button, lift the circuit breaker switch for the frame supervisory panel (FSP) for IOC 0.

52 Release the RESET button.

53 Turn on the power inverter that supplies the operator MAP terminal.

At the operator MAP terminal

54 Determine if you must log in.

Note: The message Please Login means that you must log in. Your office parameters determine if the system can log you in automatically.

Example of a MAP response:
Please Login.

If	Do
you must log in	step 55

Recovering from a dead system in a SuperNode SE switch (continued)

If	Do
the system logged you in automatically	step 59

55

WARNING
Extended service interruption
The exact login procedure can vary, according to your office configuration. If you require additional help, contact the next level of support.

Press the Break key.

MAP response:
?

56 To log in to the MAP terminal, type

`>LOGIN`

and press the Enter key.

MAP response:
Enter User Name

57 To enter the user name, type

`>user_name`

and press the Enter key.

where

user_name
is the name of the user for the account

MAP response:
Enter Password

58 To enter the password, type

`>password`

and press the Enter key.

where

password
is the password for the account

Example of a MAP response:
SuperNode1 Logged in on 1993/03/11 at 20:37:17.

59 To turn on priority, type

`>PRIORITY  ON`

and press the Enter key.

Recovering from a dead system in a SuperNode SE switch (continued)

MAP response:
Pref>

60 To determine if the system time is correct, type

>TIME

and press the Enter key.

Example of a MAP response:
Time is 14:55:50

If the system time	Do
is correct	step 63
is wrong	step 61

61 To enter the correct time (use the 24-h clock), type

>SETTIME hh mm

and press the Enter key.

where

hh
is the hour (00 to 23)

mm
is the minute (00 to 59)

Example input:

>SETTIME 16 55

Example of a MAP response:
Warning:There is an automated TOD clock change request
scheduled on:1996/10/15 at 1:00 (see table
DSTTABLE).
Do you want to proceed with this request?
Please confirm ("YES", "Y", "NO", or "N"):

62 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
Time is 16:55:00 on TUE 1996/10/15.
```

63 Determine if the system date is correct

If the system date	Do
is correct	step 66
is wrong	step 64

Recovering from a dead system in a SuperNode SE switch (continued)

64 To enter the correct date, type

>SETDATE dd mm yyyy

and press the Enter key.

where

dd
is the day (01 to 31)

mm
is the month (01 to 12)

yyyy
is the year

Example input:

>SETDATE 12 07 1996

Example of a MAP response:
setdate 12 07 1996
Warning:There is an automated TOD clock change request scheduled on:1996/10/30 at 1:00 (see table DSTTABLE).
Do you want to proceed with this request?
Please confirm ("YES", "Y", "NO", or "N"):

65 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
Date is THU.  12/JUL/1996  00:00:00
```

66 To access the SRSTATUS level of the MAP display, type

>MAPCI;MTC;SRSTATUS

and press the Enter key.

Example of a MAP display:

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                        11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

Recovering from a dead system in a SuperNode SE switch (continued)

67 Determine the recovery status of the MSs.

Note: The MS recovery status appears on the right side of the word MS in the MAP display. Recovery status for each MS can be pending, in progress, complete, or failed.

If	Do
either MS failed recovery	step 193
either MS waits for recovery	step 68
MS recovery status is other than listed here	step 69

68 Wait until both MSs are in recovery progress or completed recovery.

When the MSs do not continue to wait for recovery, go to step 67.

69 To access the MS Clock level of the MAP display, type

```
>MS;CLOCK
```

and press the Enter key.

70 To synchronize the clocks, type

```
>SYNC
```

and press the Enter key.

If the SYNC command	Do
passed	step 72
failed	step 71

71 Record the reason for the synchronization failure as shown in the MAP response. Continue this procedure at step 72 to recover networks and peripheral modules. Repeat the attempt to synchronize the MS clocks later, after networks and peripheral modules (PM) are in service.

72 Determine the type of network equipped on the switch.

If the network type	Do
is 16K ENET only (no external network cabinet)	step 80
is ENET (with external network cabinet)	step 73
is JNET	step 84

Recovering from a dead system in a SuperNode SE switch (continued)

At the ENET frames

73 Locate the NT9X31 power converters for the enhanced network (ENET) shelves.

Note: Slots 1F and 33F on the ENET shelf contain the NT9X31 power converters.

74 Ensure that the power converters are off. If they are not off, turn off the power converters by pushing down and releasing the power switches located on the faceplate of each converter.

75 Turn on the NT9X31 power converters. Lift and release the power switches on the faceplates of the converters to turn on the NT9X31 power converters.

76 Locate the NT9X30 power converters for the ENET shelves.

Note: Slots 4F and 36F on the ENET shelf contain the NT9X30 power converters.

77 Turn on the NT9X30 power converters. Lift and release the power switches on the faceplates of the converters to turn on the NT9X30 power converters.

78 Determine if all the converters powered up correctly. The indication is that all the Converter Off lights go off.

If all the converters	Do
powered up	step 80
did not power up	step 79

79 Power up the ENET frame. Perform the procedure *Clearing an Ext FSP DPCC cabinet major alarm* in *Alarm and Performance Monitoring Procedures*

Complete the procedure and return to this point.

Go to step 73.

At the MAP terminal

80 To access the SRSTATUS level of the MAP display, type

>SRSTATUS

and press the Enter key.

Example of a MAP display:

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
0  Quit    VIEW: SYSTEM                                      11:52:34
2  View_       Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
3  List_ MS     0    0      2       0   IOD   5     5      30     2
4        NET    0    0      6       0   Other 21    3      13     3
5        SER1   0    1      6       0
6        SER2   1    1      60      1
7        SER3   11   8      30      1
8
9        SRSTATUS:
```

Recovering from a dead system in a SuperNode SE switch (continued)

81 From the MAP display, determine the recovery status of the network.

Note: Network recovery status appears on the right side of the word NET in the MAP display. Recovery status can be pending, in progress, complete, or failed.

If the status of any network element	Do
failed	step 83
is pending	step 82
is other than listed here	step 96

82 Wait until network elements pending recovery are not present.

Go to step 81.

83 Perform the procedure *How to recover the Enhanced Network* in this document to manually recover the ENET.

Complete the procedure and return to this point.

Go to step 80.

At the JNET shelf

84

DANGER
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point to handle circuit cards. A grounding point is on the frame supervisory panel (FSP) or the modular supervisory panel (MSP). The wrist strap protects the cards against static electricity damage.

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point to handle circuit cards. A grounding point is on the frame supervisory panel (FSP) or the modular supervisory panel (MSP). The wrist strap protects the cards against static electricity damage.

Locate the first junctured network shelf to recover.

Recovering from a dead system in a SuperNode SE switch (continued)

85 Determine if the power converter is an NT2X70AE card.

If the power converter	Do
is an NT2X70AE card	step 86
is not an NT2X70AE card	step 89

86 Determine if the FSP or MSP has circuit breakers.

If the FSP or MSP does	Do
has circuit breakers	step 87
does not have circuit breakers	step 88

87 Power up the converter.

a Move the handle of the POWER switch up to the RESET position and hold.

b Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Make sure that the card sits completely in the shelf.

c Move the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

d Release the handle.

Go to step 92.

88 Power up the converter.

a Move the handle of the POWER switch up to the RESET position and hold until the CONVERTER FAIL LED goes off.

b Release the handle.

Go to step 92.

89 Determine if the FSP or MSP has circuit breakers.

If the FSP or MSP	Do
has circuit breakers	step 90
does not have circuit breakers	step 91

90 Power up the converter.

a Move the handle of the POWER switch up and set to the ON position.

b Press and hold the RESET button on the power converter.

c Move the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

d Release the RESET button.

Go to step 92.

91 Power up the converter.

Recovering from a dead system in a SuperNode SE switch (continued)

a Move the handle of the POWER switch up and set to the ON position.

b Press the RESET button on the power converter until the CONVERTER FAIL LED goes off.

c Release the RESET button.

At the MAP terminal

92 To access the NET level of the MAP display, type

>NET

and press the Enter key.

Example of a MAP display:

```
Net
                     11111   11111   22
222 22222  33
Plane 01234  56789  01234   56789   01
234 56789  01
   0  0000
   1  0000
JNET
```

93 To manually busy the network module to return to service, type

>BSY plane_no pair_no

and press the Enter key.

where

plane_no
is the network plane number (0 to 1)

pair_no
is the network plane pair number (0 to 31)

94 To return the network module to service, type

>RTS plane_no pair_no

and press the Enter key.

where

plane_no
is the network plane number (0 to 1)

pair_no
is the network plane pair number (0 to 31)

95 Repeat steps 84 through 94 for each JNET shelf.

When all JNET shelves recover, continue the procedure at step 96.

Recovering from a dead system in a SuperNode SE switch (continued)

96 Determine if you must recover additional IOCs and MAPs.

If you	Do
must recover additional IOCs and MAPs	step 97
do not need to recover additional IOCs and MAPs	step 109

97 Restore power to all power inverters that remain in the office.

At the IOC

98 Locate the IOC to recover.

If the controller	Do
is IOC	step 99
is IOM	step 103

99 Turn ON the power converters on the IOC.

Note: The vintage of IOC determines if the IOC has one or two power converters.

100 While you press the RESET button on one of the IOC power converters, lift the associated circuit breaker switch on the FSP.

101 Release the RESET button.

102 Repeat steps 98 through 101 for each IOC to recover. Continue this procedure at step 103.

103 To access the IOD level of the MAP display, type

```
>IOD
```

and press the Enter key.

104 To access the IOC level of the MAP display, type

```
>IOC   ioc_no
```

and press the Enter key.

where

ioc_no
is the number of the IOC or input/output module (IOM) to recover

105 To manually busy the IOC or IOM, type

```
>BSY   ioc_no
```

and press the Enter key.

where

ioc_no
is the number of the IOC or IOM

Recovering from a dead system in a SuperNode SE switch (continued)

106 To return the IOC or IOM to service, type

>RTS ioc_no

and press the Enter key.

where

ioc_no
is the number of the IOC or IOM

107 Repeat steps 104 through 106 for each IOC or IOM to recover. Continue this procedure at step 108.

108 Log in to additional MAP terminals as required.

Note: Steps 54 through 58 describe how to log in to the MAP display.

109 Determine if your switch has Series III peripheral modules.

Note: Series III PMs have:

- CCS7 link interface units (LIU7s)
- High-speed link interface unit (HLIU)
- High-speed link router (HSLR)
- CCS7 server (SVR7)
- Ethernet interface units (EIUs)
- network interwork units (NIUs)
- voice processor units (VPUs)
- application processor units (APUs)
- frame relay interface units (FRIUs)

If your switch	Do
has Series III PMs	step 110
does not have Series III PMs	step 131

110 Determine if a link peripheral processor (LPP) or enhanced link peripheral processor (ELPP) contains any Series III PMs.

If an LPP or ELPP	Do
contains any Series III PMs	step 111
does not contain any Series III PMs	step 126

111 Determine if PDC power returned to the LPP(s).

If PDC power	Do
returned to the LPP(s)	step 115
did not return to the LPP(s)	step 112

Recovering from a dead system in a SuperNode SE switch (continued)

112 Check the PDC fuses that supply the LPP or ELPP.

If blown fuses	Do
are present	step 113
are not present	step 114

113 Replace the blown fuses.

Note: If fuses blow repeatedly, contact the next level of support for help.

When PDC power returns to the LPPs or ELPPs, go to step 115.

114 Contact the operating company personnel responsible for the maintenance of power at your site. For additional help, contact the next level of support.

When PDC power returns to the LPPs or ELPPs, continue this procedure at step 115.

115 Locate the LPPs or ELPPs to recover.

At the LPP or ELPP cabinet

116

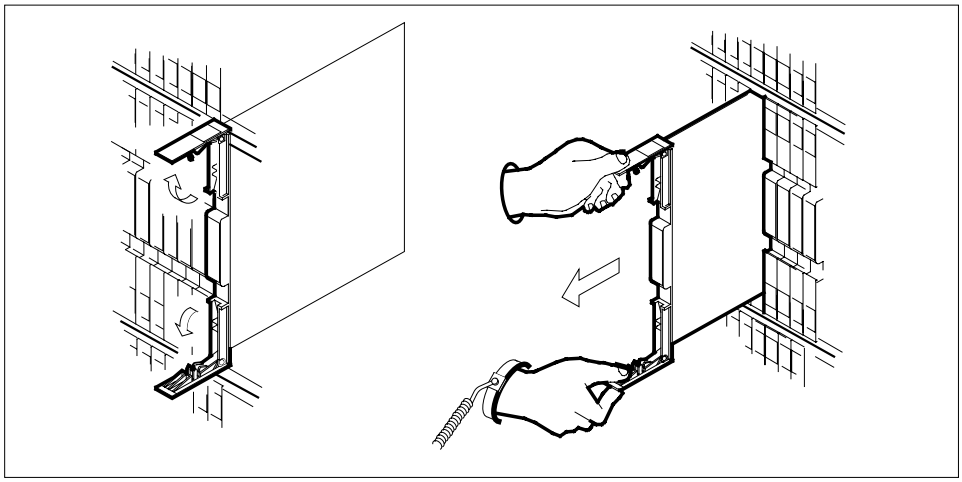
WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point to handle circuit cards. A grounding point is on the frame supervisory panel (FSP) or the modular supervisory panel (MSP). The wrist strap protects the cards against static electricity damage.

Locate the NT9X74 cards in all link interface shelves (LIS).

Note: Shelf positions 7F and 32F on all LISs contain NT9X74 cards.

117 Unlock the latches on the locking levers and carefully pull the NT9X74 cards toward you 25 mm (1 in.).

Recovering from a dead system in a SuperNode SE switch (continued)



118 Locate the NT9X30 power converters in slots 4F and 36F of the link interface module (LIM) unit shelf.

119 Turn on the LIM unit shelf power converters. Toggle the switch on each NT9X30 card.

120 Locate the NT9X30 or NTDX16 power converters for each LIS.

Note: Slots 4F and 36F for each LIS contain the NT9X30 power converters. Slots 1F, 4F, 33F, and 36F for each LIS can contain NTDX16 power converters.

121 Turn on the LIS power converters. Toggle the switch on each NT9X30 or NTDX16 card.

122 Determine if all the converters powered up correctly. The indication is if all the Converter Off lights go off.

If all the converters	Do
powered up	step 124
did not power up	step 123

123 Power up the frame. Perform the procedure *Clearing an Ext FSP LPP cabinet major alarm* in *Alarm and Performance Monitoring Procedures*.

Complete the procedure and return to this point.

Go to step 118.

124 Replace all NT9X74 cards as follows:

a Slide each card into the LIS carefully.

b Use fingers and thumbs to push on the upper and lower edges of each faceplate. Make sure that the card sits completely in the shelf.

c Close the locking levers on each card.

125 Repeat steps 115 through 124 for each LPP or ELPP in your office.

Recovering from a dead system in a SuperNode SE switch (continued)

When power returns to all LPPs or ELPPs, continue this procedure at step 126.

126 To access the SRSTATUS level of the MAP display, type

>SRSTATUS

and press the Enter key.

Example of a MAP display:

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

127 From the MAP display, determine the recovery status of the Series III PMs.

Note: Series III PM recovery status appears on the right side of the word SER3 in the MAP display. Recovery status can be pending, in progress, complete, or failed.

If the number of Series III PMs that failed recovery	Do
is zero	step 131
is other than zero	step 128

128 Determine if a link peripheral processor (LPP) or enhanced link peripheral processor (ELPP) or the SCC contains the Series III PMs that failed recovery.

If the Series III PMs that failed recovery are in	Do
an LPP or ELPP	step 130
the SCC	step 129

129 Perform the procedure *Recovering SuperNode SE application specific units* in this document to manually recover the PMs.

Complete the procedure and return to this point. Go to step 131.

130 Perform the procedure *Recovering link peripheral processors* in this document to manually recover the PMs.

Complete the procedure and return to this point.

Recovering from a dead system in a SuperNode SE switch (continued)

131 Steps 132 through 146 describe how to restore power from the PDC to Series I and Series II peripheral module frames. Proceed as follows:

If PDC power	Do
returns to the PM frames	step 147
does not return to the PM frames	step 132

132 Obtain one of the following capacitor tools:

- 100-W 120-V light bulb screwed into a socket that has bare-ended twisted wires
- tool number T000655 (CPC number NTA0600512), fitted with a fuseholder-style connector instead of bare-ended twisted wires for easier insertion

At the PDC

133 At the first empty fuse slot in the PDC, connect the leads of the capacitor charging tool. Connect the leads across the contacts for the fuse holder until the light dims. (If you use a tool that charges with a fuseholder-style connector, insert the connector in the slot until the light dims.)

134

DANGER
Possible equipment damage or extended service interruption
Make sure you use the correct fuses. When you return fuses to the PDC, make sure that the amperage of the fuses matches the amperage marked on the PDC.

Remove the capacitor charging tool and immediately insert the correct fuse holder in the slot.

135 Repeat steps 133 and 134 for all the LCE talk battery, TME talk battery, and PDC filter fuse holders. You removed the fuse holders in step 1. When all fuses return to the PDCs, continue with the procedure.

136 Determine if any alarm-indicating fuses are blown.

Note: The fuse alarm-indicator lamp lights when an alarm-indicating fuse blows.

If alarm-indicating fuses	Do
are blown	step 137
are not blown	step 147

137 Locate a fuse holder with a blown alarm-indicating fuse.

Note: Replace blown fuses in any order.

138 The cartridge fuse in the fuse holder is blown. Remove the fuse holder from the PDC.

Recovering from a dead system in a SuperNode SE switch (continued)

139 Replace the blown cartridge fuse in the back of the fuse holder. Make sure that the amperage of the replacement cartridge fuse matches the amperage marked on the PDC.

140 Remove the blown alarm-indicating fuse from the front of the fuse holder.

141 Insert the fuse holder into the PDC. Make sure you remove the alarm-indicating fuse.

142 Obtain a replacement alarm-indicating fuse.

143 Insert the replacement alarm-indicating fuse into the fuse holder.

144 Determine if the alarm-indicating fuse blows.

Note: The fuse alarm indicator lamp lights when an alarm-indicating fuse blows.

If the alarm-indicating fuse	Do
blows	step 193
does not blow	step 145

145 Determine if you replaced all the blown alarm-indicating fuses.

If you	Do
replaced all the blown alarm-indicating fuses	step 146
did not replace all the blown alarm-indicating fuses	step 137

146 Determine if the fuse alarm indicator lamp is lit.

If the fuse alarm indicator lamp	Do
is lit	step 193
is not lit	step 147

At the PM frames

147 Select a peripheral module (PM) frame to turn on.

Note: The PM frames can activate in any order.

148 Locate the FSP and the power converters on the frame.

149 Determine if the FSP for the frame has fuses or breakers.

If the FSP	Do
has fuses	step 150
has breakers	step 155

Recovering from a dead system in a SuperNode SE switch (continued)

150 Determine if the power converters have POWER RESET buttons or POWER RESET switches.

If the power converters	Do
have POWER RESET buttons	step 151
have POWER RESET switches	step 153

151 Press and hold the POWER RESET button on the converter for 2 seconds to turn on each power converter.

Note: The Converter Fail light goes off with the power converter turned on.

152 Determine if all the converters powered up correctly. The indication is all the Converter Fail lights go off.

If all the converters	Do
powered up	step 157
did not power up	step 158

153 Turn ON each power converter. Pull the power switch out and toggle the switch to the POWER RESET position to turn on each power converter.

Note: The Converter Fail light goes off with the power converter turned on.

154 Determine if all the converters powered up correctly.

Note: When a converter powers up correctly, the Converter Fail light goes off.

If all the converters	Do
powered up	step 157
did not power up	step 158

155 Turn ON each power converter, as follows:

a Toggle the breaker to the ON position.

b Press and hold the POWER RESET button for 2 s.

c Release the breaker and the POWER RESET button.

Note: The Converter Fail light goes off with the power converter turned on.

156 Determine if all the converters powered up correctly. The indication is all the Converter Fail lights go off.

If the converters	Do
powered up	step 157

Recovering from a dead system in a SuperNode SE switch (continued)

If the converters	Do
did not power up	step 158

157 Determine if all PM frames powered up.

If all frames	Do
powered up	step 161
did not power up	step 158

158 Determine if an attempt to power up the frames that remained occurred.

If an attempt to power up the frames that remain	Do
did not occur	step 159
occurred and failed	step 160

159 Power up the next frame.

Go to step 148.

160 Power up the PM frames that remain. Perform the correct procedures in *Alarm and Performance Monitoring Procedures.* Complete the procedure and return to this point.

At the MAP terminal

161 To access the SRSTATUS level of the MAP display, type

>SRSTATUS

and press the Enter key.

Example of a MAP display:

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_       Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

162 From the MAP display, determine the recovery status of the Series I and II PMs.

Note: Series I PM recovery status appears on the right side of the word SER1 in the MAP display. Series II PM recovery status appears on the

Recovering from a dead system in a SuperNode SE switch (continued)

right side of the word SER2 in the MAP display. Recovery status can be pending, in progress, complete, or failed.

If the number of Series I and II PMs that failed recovery	Do
is zero	step 165
is other than zero	step 163

163 Determine from office records or operating company personnel the PMs to manually recover first.

164 Perform the procedures in *Alarm and Performance Monitoring Procedures.* to manually recover the PMs in the required order. Complete the procedures and return to this point.

165

CAUTION
Loss of billing data
Office configuration can allow the system to use billing systems other than, or in addition to, AMA. Contact the next level of support to determine if other billing systems are in use. Determine if the system requires recovery action.

To access the DIRP level of the MAP display, type

```
>IOD;DIRP
```

and press the Enter key.

166 To determine the state of the recording volumes for the billing subsystem, type

```
>QUERY  subsystem  ALL
```

and press the Enter key.

where

subsystem
is the name of the DIRP subsystem used for billing.

Example input:

```
>QUERY  AMA  ALL
```

Example of a MAP response:

Recovering from a dead system in a SuperNode SE switch (continued)

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0     1       6      9       62 ***YES***

REGULAR
FILE(S)  STATE VOLUME   RECCOUNT BLOCK E  V V_B VLID FNUM FRN#
ACTIVE    NONE
STANDBY1  NONE

PARALLEL
FILE              STATE VOLUME   BLOCK E  V V_B VLID FNUM FRN#
                   NONE

REGULAR VOLUME(S)
VOL# VOLNAME  STATE         IOC CARD VOL FSEG ROOM VLID FILES

REGULAR SPACE
```

If	Do
volumes are not allocated, as indicated by the word NONE under the STATE header on the MAP display	step 168
a volume is IN ERROR, as indicated under the REGULAR VOLUME(S) header on the MAP display	step 167
all volumes are READY, as indicated under the REGULAR VOLUME(S) header on the MAP	step 169

167 To reset any volumes that are IN ERROR, type

>RSETVOL vol_name

and press the Enter key.

where

vol_name
is the name of the volume to reset

If the RSETVOL command	Do
passed	step 169
failed	step 193

168 Perform the procedure *Allocating recording volumes in the DIRP utility* in *Routine Maintenance Procedures*. Complete the procedure and return to this point.

169 To determine the state of the DLOG recording volumes, type

>QUERY DLOG ALL

Recovering from a dead system in a SuperNode SE switch (continued)

and press the Enter key.

Example of a MAP response:

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
DLOG      2     1     102     10  NONE    ***YES***

REGULAR
FILE(S)  STATE VOLUME   RECCOUNT BLOCK E  V V_B VLID FNUM FRN#
ACTIVE   AVAIL S01DDLOG         6     6 0 22 NO  8447 0013 204D
STANDBY1 AVAIL S00DDLOG         0     0 0 23 NO  8408 0014 309B


REGULAR VOLUME(S)
VOL# VOLNAME  STATE         IOC CARD VOL FSEG ROOM VLID FILES
  22 S01DDLOG READY         N/A  N/A   7    5   18 8447 A
  23 S00DDLOG READY         N/A  N/A   8    4   18 8408 S1

REGULAR SPACE
VOL# VOLNAME  STATE         SEGS   EXP UNEXP TOTAL
  22 S01DDLOG READY            5    13     0    18
  23 S00DDLOG READY            4    14     0    18
```

If	Do
volumes are not allocated, as indicated by the word NONE under the STATE header on the MAP display	step 171
a volume is IN ERROR, as indicated under the REGULAR VOLUME(S) header on the MAP display	step 170
all volumes are READY, as indicated under the REGULAR VOLUME(S) header on the MAP display	step 172

170 To reset any volumes that are IN ERROR, type

>RSETVOL vol_name

and press the Enter key.

where

vol_name
is the name of the volume to reset

If the RSETVOL command	Do
passed	step 172
failed	step 193

Recovering from a dead system in a SuperNode SE switch (continued)

171 Perform the procedure *Allocating recording volumes in the DIRP utility* in *Routine Maintenance Procedures*. Complete the procedure and return to this point.

172 Consult the next level of support. Determine if you must recover other DIRP subsystems at this point (for example, JF, OM).

If you	Do
must recover other DIRP subsystems	step 173
do not need to recover other DIRP subsystems	step 176

173 Perform the correct procedures in *Alarm and Performance Monitoring Procedures*. Complete the procedures and return to this point.

174 To determine if the system generated DIRP logs, type

>LOGUTIL;OPEN DIRP

and press the Enter key.

If the system	Do
generated DIRP logs	step 175
did not generate DIRP logs	step 176

175 Refer to the *Log Report Reference Manual* and perform the correct action. Complete the log report activities and return to this point.

176 Determine if the attempt to synchronize the clocks in step 70 was successful.

If synchronization	Do
was successful	step 179
was not successful	step 177

177 To access the MS Clock level of the MAP display, type

>MS;CLOCK

and press the Enter key.

178 To synchronize the clocks, type

>SYNC

and press the Enter key.

179 To access the CM level of the MAP display, type

>CM

and press the Enter key.

Recovering from a dead system in a SuperNode SE switch (continued)

180 Determine if the CPUs are in sync.

Note: A dot symbol under the Sync header indicates that the CPUs are in sync. The word no indicates that the CPUs are not in sync.

If the CPUs	Do
are in sync	step 186
are not in sync	step 181

181 Contact the next level of support to determine if you can synchronize the CPUs.

If you	Do
can synchronize the CPUs	step 182
can not synchronize the CPUs	step 186

182 Determine if the inactive CPU jammed.

Note: The word yes under the JAM header indicates a jammed inactive CPU. The area is blank if the inactive CPU is not jammed.

If the inactive CPU	Do
is jammed	step 183
is not jammed	step 184

At the CM RESET terminal for the INACTIVE CPU

183 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key.

RTIF response:
JAM RELEASE DONE

At the MAP terminal

184 To synchronize the CPUs, type

>SYNC

and press the Enter key.

If the response	Do
indicates the SYNC command was successful	step 179

Recovering from a dead system in a SuperNode SE switch (continued)

If the response	Do
indicates `The CPUs are out of sync due to a problem with mismatches. The mismatch logs should be analyzed before re-syncing. Do you wish to continue? Please Confirm("YES", "Y", or "NO", "N")` (SuperNode and SuperNode SE series 70 only)	step 185
failed	step 193

185 (SuperNode and SuperNode SE Series 70 only)

To deny the action, type

>NO

and press the Enter key.

Go to step 193.

186 To turn off priority, type

>PRIORITY OFF

and press the Enter key.

187 To access the SRSTATUS level of the MAP display, type

>MAPCI;MTC;SRSTATUS

and press the Enter key.

Example of a MAP:

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

Recovering from a dead system in a SuperNode SE switch (end)

188 Determine the system recovery status.

If	Do
any Series III PMs in an LPP or ELPP failed recovery	step 189
any Series III PMs in the SCC failed recovery	step 190
any Series I or II PMs failed recovery	step 191
any IODs or other devices and services failed recovery	step 192
the system recovered completely	step 194

189 Perform the procedure *Recovering link peripheral processors* in this document to manually recover the PMs.

Complete the procedure and return to this point.

Go to step 187.

190 Perform the procedure *Recovering SuperNode SE application specific units* in this document to manually recover the PMs.

Complete the procedure and return to this point.

Go to step 187.

191 Perform the correct procedures in *Alarm and Performance Monitoring Procedures* to manually recover the PMs in the required order.

Complete the procedure and return to this point.

Go to step 187.

192 Manually recover IODs and other devices and services. Perform the correct procedure in this document. Consult your site operation procedures.

193 For additional help, contact the next level of support.

194 The procedure is complete.

3 Node level recovery procedures

Introduction to node level recovery procedures

This chapter contains procedures for performing node level recovery tasks for the DMS-100 switch. For each recovery task, you will find a procedure containing

- explanatory and context-setting information
- information
- step-action instructions

Explanatory and context-setting information

The first page of each procedure contains the following headings:

- Application (when to use the procedure)
- Action (how to use the flowchart and step-action instructions)

Summary flowchart

The flowchart is only a summary of the main actions, decision points, and possible paths you may take. Do not use the summary flowchart to perform the procedure. Instead, use it to preview what you will be doing and to prepare for it. For example, if you see that these instructions involve another office, you will know to advise that office before you begin the step-action instructions.

Step-action instructions

The step-action instructions tell you how to perform the recovery task. Normally you will perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and system information you use or see while performing the procedure. For help on DMS commands, see *DMS-100 Family Commands Reference Manual*, 297-10001-822

Recovering the enhanced network

Application

Use this procedure to manually recover the enhanced network (ENET) if the automatic ENET system recovery fails. Perform the procedure if the next level of support directs you to.

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

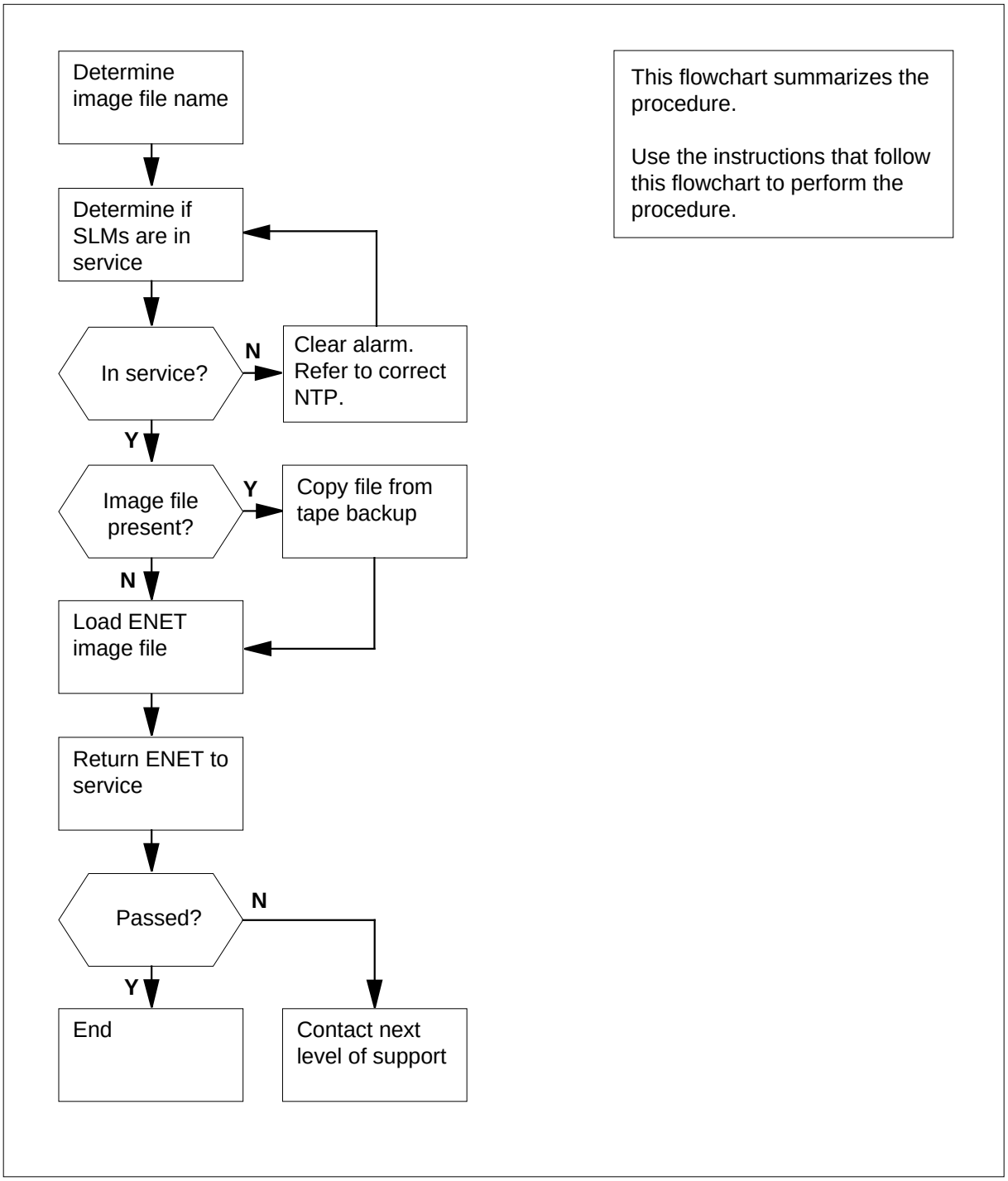
Note: MAP displays in this procedure are for the 128K ENET. Displays for the 64K ENET are identical to the 128K ENET except that only shelves 0 and 1 are equipped. In the MAP display, shelves 2 and 3 appear unequipped (-) as follows:

Example of a 64K ENET MAP display:

```
ENET        System  Matrix  Shelf   0 1 2 3
 Plane 0    Fault     .             C . – –
 Plane 1               .   .         . . – –
```

Recovering the enhanced network (continued)

Summary of Recovering the enhanced network



Recovering the enhanced network (continued)

Recovering the enhanced network

WARNING
Contact ETAS or your next level of support
If an equipment outage that affects service occurs, contact Emergency Technical Assistance Service (ETAS) of Nortel before you perform the procedure. You can also contact the next level of support.

CAUTION
Loss of service
Manual interruption during automatic system recovery actions can interrupt or delay automatic recovery. The interruption can prolong service outage.

CAUTION
Potential service interruption
Do not perform this procedure while a restart is in progress. When you log on after a restart, wait 5 min to allow the ENET time to try to recover.

At your current location

1 Determine if the local operating company keeps a log book of office image files.

If a log book	Do
is kept	step 2
is not kept	step 3

2 From the local office log book, record the latest image file name. Go to step 7.

3 To access table ENINV, type

```
>TABLE  ENINV
```

and press the Enter key.

Recovering the enhanced network (continued)

At the MAP terminal

4 To display all the tuples in table ENINV, type

`>LIST ALL`

and press the Enter key.

Example of a MAP response:

Note: Every equipped ENET shelf has a tuple.

```
FRPOS0 SHELF0 LOAD0    MSCARD1 FLOOR1 ROW1 FRPOS1 SHELF1 LOAD1
------ ------ -----    ------- ------ ---- ------ ------ -----
     5     39 ENC33BM         8      0    A      5     13 ENC33BM
```

5 Record the latest file name that appears under the header LOAD0 and LOAD1.

6 To quit table ENINV, type

`>QUIT`

and press the Enter key.

7 To access the SLM level of the MAP display, type

`>MAPCI;MTC;IOD;SLM`

and press the Enter key.

Example of a MAP response:

```
SLM          0       1
Stat         .       .
```

8 Determine the system load modules (SLM) that are in service. A dot (.) in the SLM status field indicates the SLMs that are in service.

If	Do
both SLMs are in service	step 20
one SLM is in service	step 15
neither SLM is in service	step 9

9 Determine the status of the SLMs.

If the status	Do
is S	step 10
is M	step 11
is O	step 12
is I	step 13

Recovering the enhanced network (continued)

10 Perform the procedure in *Alarm and Performance Monitoring Procedures* to clear an IOD SLM bsy major alarm. Complete the procedure and return to this point.

Go to step 14.

11 Perform the procedure in *Alarm and Performance Monitoring Procedures* to clear an IOD SLM bsy minor alarm. Complete the procedure and return to this point.

Go to step 14.

12 Perform the procedure in *Alarm and Performance Monitoring Procedures* to clear an IOD SLM off minor alarm. Complete the procedure and return to this point.

Go to step 14.

13 Perform the procedure in *Alarm and Performance Monitoring Procedures* to clear an IOD SLM tbl minor alarm. Complete the procedure and return to this point.

Go to step 14.

14 To access the CI level of the MAP display, type

```
>QUIT  ALL
```

and press the Enter key.

15 To access the disk utility level of the MAP display, type

```
>DISKUT
```

and press the Enter key.

Example of a MAP response:

```
Disk utility is now active.
DISKUT:
```

16 To list the volumes on the SLMs, type

```
>LISTVOLS CM
```

and press the Enter key.

17 Record the SLM volume name.

18 To list the files in the SLM volume on the in-service SLM, type

```
>LISTFL  disk_volume_name
```

and press the Enter key.

where

disk_volume_name
is the name of the SLM disk (S00D or S01D) and the name of the SLM volume on the disk (for example, S00DENET)

Example of a MAP response:

Recovering the enhanced network (continued)

```
File information for file S00DENET:
(Note:  1 BLOCK = 512 BYTES )
-------------------------------------------------------
CREATE    MODIFY     NUM     NUM    MAX.   IN   FILE
                                    RECORD
DATE      DATE       BLKS    REC    LENGTH  ITOC  NAME
-------------------------------------------------------
92/08/24  92/08/20   49364   4682   1020    N   ENET_0820
92/08/24  92/08/24   72190   6095   1020    N   ENET_0824
92/08/30  92/08/25   69364   4682   1020    N   ENET_0825
92/08/30  92/08/26   75310   7655   1020    N   ENET_0826
92/08/30  92/08/30   99370   8890   1020    N   ENET_0830
```

Note: In the preceding example, the FILE ORG, FILE CODE, REC TYPE, and FILE STATUS columns of the MAP display do not appear. These columns do not appear because of the small amount of space.

19 Determine if the latest image file is present on the disk. You recorded the latest image file in either step 2 or 5.

If the latest image file	Do
is present	step 35
is not present	step 27

20 To access the disk utility level of the MAP display, type

`>DISKUT`

and press the Enter key.

21 To list the volumes on both SLMs, type

`>LISTVOLS CM`

and press the Enter key.

22 Record the SLM volume names.

23 To list the files in one of the SLM volumes, type

`>LISTFL  disk_volume_name`

and press the Enter key.

where

disk_volume_name
is the name of the SLM disk (S00D or S01D) and

the name of an SLM volume (for example,

S00DENET)

Example of a MAP response:

Recovering the enhanced network (continued)

```
File information for file S00DENET:
(Note:  1 BLOCK = 512 BYTES )
-------------------------------------------------------
CREATE    MODIFY     NUM   NUM    MAX      IN   FILE
                                  RECORD
DATE      DATE       BLKS  REC    LENGTH   ITOC NAME
-------------------------------------------------------
92/08/24  92/08/20  49364   4682  1020      N   ENET_0820
92/08/24  92/08/24  72190   6095  1020      N   ENET_0824
92/08/30  92/08/25  69364   4682  1020      N   ENET_0825
92/08/30  92/08/26  75310   7655  1020      N   ENET_0826
92/08/30  92/08/30  99370   8890  1020      N   ENET_0830
```

Note: In the preceding example, the FILE ORG, FILE CODE, REC TYPE, and FILE STATUS columns of the MAP display do not appear because of the small amount of space.

24 Determine if the latest image file is present on the disk. You recorded the latest image file in either step 2 or 5.

If the latest image file	Do
is present	step 35
is not present	step 25

25 To list the files in the other SLM volume, type

`>LISTFL  disk_volume_name`

and press the Enter key.

where

disk_volume_name
is the name of the SLM disk (S00D or S01D) and the name of the other SLM volume (for example, S00DENET)

26 Determine if the latest image file is present on the disk. You recorded the latest image file in either step 2 or 5.

If the latest image file	Do
is present	step 35
is not present	step 27

27 Obtain the latest backup tape that contains an ENET image.

At the SLM

28 Insert the backup tape into the correct SLM tape drive unit.

Recovering the enhanced network (continued)

At the MAP terminal

29 To mount the tape, type

`>INSERTTAPE device_name`

and press the Enter key.

where

device_name
is S00T if you are working on SLM 0, or S01T if youare working on SLM 1

Example of a MAP response:

```
The INSERT operation may take up to 5 minutes to tension
the tape.
```

30 To list the files on the backup tape, type

`>LISTFL device_name`

and press the Enter key.

where

device_name
is S00T or S01T

31 To copy the file from tape to disk, type

`>RESTORE FILE disk_volume_name tape_device_name file_name`

and press the Enter key.

where

disk_volume_name
is the name of the SLM disk (S00D or S01D) and the name of the volume on the disk (for example, S00DENET)

tape_device_name
is S00T if you are working on SLM 0, or S01T if youare working on SLM 1

file_name
is the image file name

32 To list the files on the volume to confirm that the ENET image file is present, type

`>LISTFL disk_volume_name`

and press the Enter key.

where

disk_volume_name
is the name of the SLM disk (S00D or S01D) and the name of the volume on the disk (for example, S00DENET)

Recovering the enhanced network (continued)

33 Determine if the image file name has a date stamp.

If the file	Do
has a date stamp	step 34
does not have a date stamp	step 35

At the MAP terminal

34

CAUTION
Improper image file name prohibits download of patches
When you copy the file to disk, remove the date stamp or other information added to the file name on tape. Failure to remove excess information prohibits the automatic download of patches to the local operating company switch.For additional information, refer to *How to record a 16K ENET image on an SLM disk* in *Routine Procedures*.

To change the image file name to the correct file name, type

`>RENAMEFL  old_file_name  new_file_name`

and press the Enter key.

where

old_file_name
is the name of a previous image file with a datestamp (for example, ENC33BM_0227)

new_file_name
is the correct file name (for example, ENC33BM)

Example of a MAP response:

```
File ENC33BM_0227 on volume S01DISLOADS has been renamed
to ENC33BM.
```

35 To quit the disk utility level of the MAP display, type

`>QUIT`

and press the Enter key.

36 To access the SYSTEM level of the MAP display, type

`>MAPCI;MTC;NET;SYSTEM`

and press the Enter key.

Example of a MAP response:

Recovering the enhanced network (continued)

```
SYSTEM
   Shelf        Plane 0         Plane 1
   00           S                    .
   01           S                    .
   02           S                    .
   03           S                    .
```

37 Determine the plane-shelves that are system busy. The letter S in the Plane field indicates plane-shelves that are system busy.

If	Do
all shelves on a plane are system busy	step 39
a minimum of one shelf on a plane is system busy but not all shelves are system busy	step 43

38 To stop all traffic flow on all shelves of the affected plane, type

>DELOAD plane_number SET

and press the Enter key.

where

plane_number
is 0 or 1

39 To manually busy all shelves on the affected plane, type

>BSY plane_number ALL

and press the Enter key.

where

plane_number
is 0 or 1

40 Determine if the shelf you specified is busied correctly.

If the MAP response	Do
is Request to MAN BSYALL ENET Plane:n completed.	step 47
is WARNING: You will be aborting the following maintenance action on ENET Plane:n Shelf:nn. Please confirm (“Yes" or “No")	step 41

41 Another maintenance action is in progress on one or more of the plane-shelves you specified. To cancel the BSY command, type

>NO

and press the Enter key.

42 Wait 3 min for the in-progress maintenance action to complete. Go to step 37.

Recovering the enhanced network (continued)

43 To select a system busy plane-shelf and set it to manual busy, type

>BSY plane_number shelf_number

and press the Enter key.

where

plane_number
is 0 or 1

shelf_number
is 0 to 1 for 64K ENET, or 0 to 7 for 128K ENET

44 Determine if the shelf you specified is busied correctly.

If the MAP response	Do
is Request to MAN BUSY ENET Plane:n Shelf:nn completed.	step 47
is WARNING: You will be aborting the following maintenance action on ENET Plane:n Shelf:nn. Please confirm (“Yes" or “No")	step 45

45 Another maintenance action is in progress on the plane-shelf you specified. To cancel the BSY command, type

>NO

and press the Enter key.

46 Wait 3 min for the in-progress maintenance action to complete. Go to step 37.

47 Determine if more system busy plane-shelves are present.

If	Do
more system busy plane-shelves are present	step 43
all system busy plane-shelves are set to manual busy	step 48

48 To load each node with the latest ENET image file, type

>LOADENALL file_name

and press the Enter key.

where

file_name
is the latest ENET image file name

Example of a MAP response:

```
WARNING: This action will be performed on ALL ENET shelves
that are MBSY.  Please confirm (”YES” OR ”NO”)
```

49 To confirm the command, type

>YES

and press the Enter key.

Example of a MAP response:

```
WARNING: Any software load in the MBSY ENETS will be
destroyed. Please confirm (”YES” or ”NO” )
```

50 To confirm the command, type

>YES

and press the Enter key.

Example of a MAP response:

```
Request to LOADENALL ENET in both planes submitted.
Request to LOADENALL ENET in both planes completed.
Plane:0 Shelf:00 Passed.
Plane:0 Shelf:01 Passed.
Plane:0 Shelf:02 Passed.
Plane:0 Shelf:03 Passed.
```

51 Determine if any nodes failed to load the ENET image file.

If	Do
all nodes passed the software load	step 53
some nodes failed the software load	step 52
all nodes failed the software load	step 58

52 To return to service all nodes that passed the software load, type

>RTS plane_number shelf_number

and press the Enter key.

where

plane_number
is 0 or 1

shelf_number
is 0 to 1 for 64K ENET, or 0 to 7 for 128K ENET

Go to step 58.

53 To return all manual busy nodes to service, type

>RTS plane_number ALL

and press the Enter key.

where

plane_number
is 0 or 1

Recovering the enhanced network (end)

54 Determine if any of the nodes failed to return to service.

If	Do
any of the nodes failed to return to service	step 55
all nodes returned to service	step 59

55 To return to service the node that failed, type

`>RTS plane_number shelf_number`

and press the Enter key.

where

plane_number
is 0 or 1

shelf_number
is 0 to 1 for 64K ENET, or 0 to 7 for 128K ENET

If the RTS command	Do
passed	step 59
failed	step 56

56 Determine if the system generated a card list.

If the system	Do
generated a card list	step 57
did not generate a card list	step 58

57 Determine the alarm that the system generated under the Net header. Perform the correct procedure in *Alarm and Performance Monitoring Procedures* to clear the alarm.

58 For additional help, contact the next level of support.

59 To return all traffic flow on all shelves of the affected plane, type

`>DELOAD plane_number CLEAR ALL`

and press the Enter key.

where

plane_number
is 0 or 1

60 The procedure is complete.

Recovering link peripheral processors

Application

Use this procedure to recover link peripheral processors (LPP) or fiberized LPPs (FLPP) that are system busy (SysB).

> ***Note:*** Throughout this document, LPP is used to refer to both the LPP and FLPP.

LPPs become SysB when both link interface module (LIM) units lose A and B dc power feeds. If the whole switch loses power, restore primary switching functions. Do not use this procedure until the primary switching functions are restored. To restore primary switching functions, use the procedure *Recovering from a dead system in a SuperNode switch*. Or refer to the *Recovering from a dead system in a SuperNode SE switch* procedure. The procedure indicates when to recover the LPP.

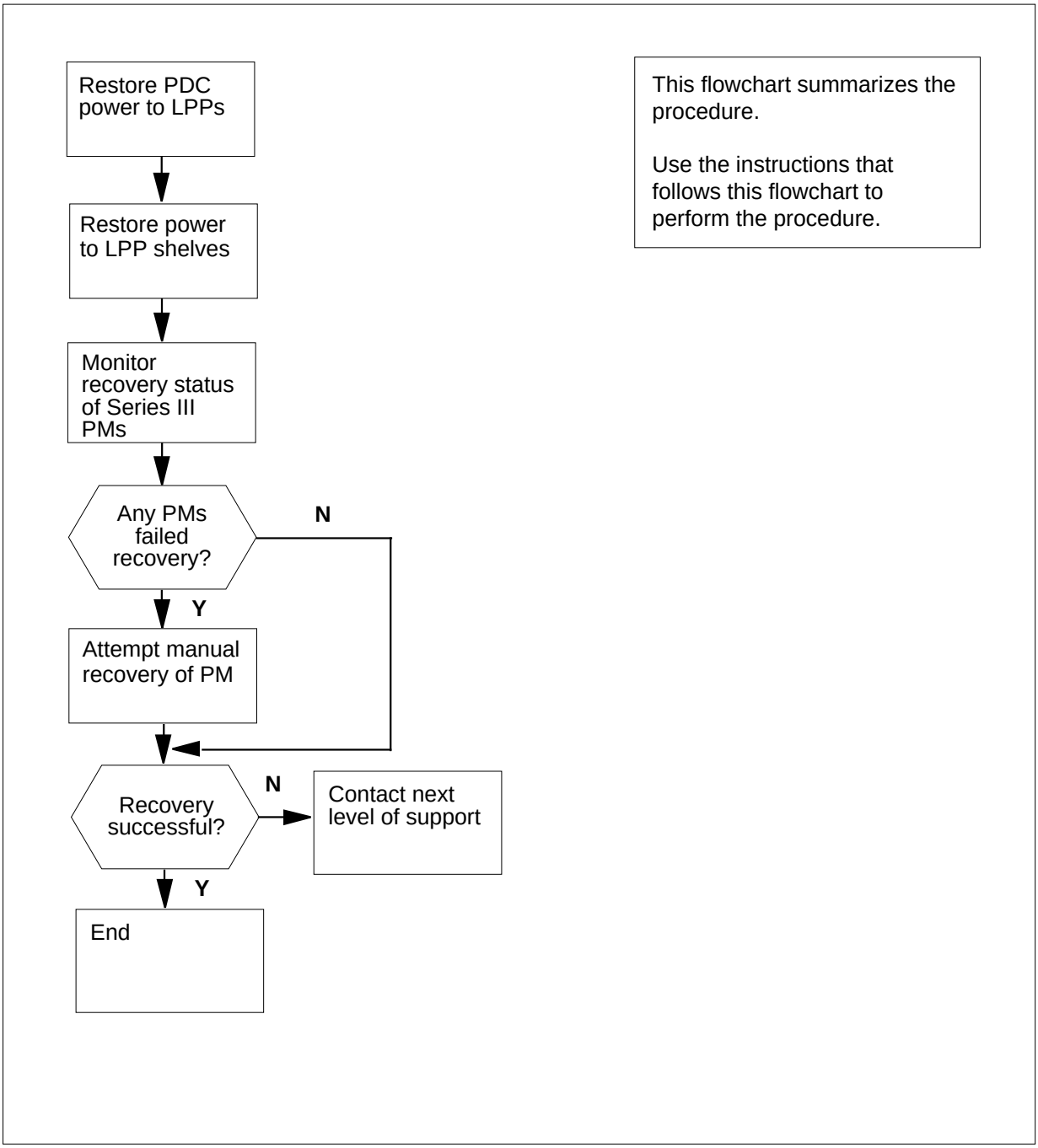
To recover LPPs when both LIMs are system busy because of other faults, refer to the procedure *Clearing a PM LIM critical alarm* and *Alarm and Performance Monitoring Procedures*.

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 recovery task.

Recovering link peripheral processors (continued)

Summary of Recovering link peripheral processors



Recovering link peripheral processors (continued)

Recovering link peripheral processors

At the PDC

1

DANGER
Possible equipment damage or service interruption
To ensure that the LPP is recovered as quickly as possible, contact Nortel's Emergency Technical Assistance Services (ETAS) or your next level of support before you begin this procedure.

DANGER
Possible equipment damage or service interruption
To ensure that the LPP is recovered as quickly as possible, contact Nortel's Emergency Technical Assistance Services (ETAS) or your next level of support before you begin this procedure.

Check the PDC fuses that supply the LPPs that you want to recover.

If	Do
there are blown fuses	step 2
there are no blown fuses	step 3

2 Replace the blown fuses.

Note: If fuses blow repeatedly, contact your next level of support.

When PDC power is restored to the LPPs, go to step 3 of this procedure.

3 Locate the LPPs that you want to recover.

At the LPP cabinet

4 Determine if the LPP shelves have power.

Note: When the LPP shelves have power, the Converter Off lights on all power converters (NT9X30, NT9X31 if present, or NTDX16 cards) are not lit.

If the Converter Off lights in the LPP	Do
are not lit	step 15
are lit	step 5

Recovering link peripheral processors (continued)

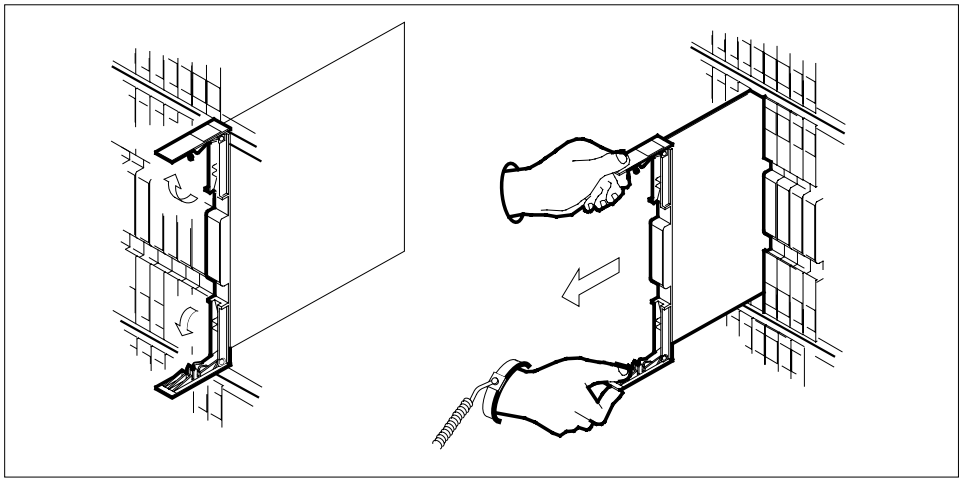
5

WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) while handling circuit cards. This protects the cards against static electricity damage.

Locate the NT9X74 cards in all link interface shelves (LIS) in the LPP.

Note: NT9X74 cards are in shelf positions 7F and 32F on all LISs.

6 Unseat each NT9X74 card. To unseat a card, unlatch the locking levers and slowly pull the card toward you 25 mm (1 in.).



7 Locate the NT9X30 power converters in slot 4F and 36F on the link interface module (LIM) unit shelf. Locate the NT9X31 power converters in slots 1F and 33F if applicable.

8 To turn on the LIM unit shelf power converters, toggle the switch of each NT9X30 and NT9X31 card.

9 Locate the NT9X30 or NTDX16 power converters for each LIS in the LPP.

Note: NT9X30 power converters are in slots 4F and 36F for each LIS. NTDX16 power converters are in slots 1F, 4F, 33F, and 36F for each LIS.

10 To turn on the LIS power converter, toggle the switch of each NT9X30 or NTDX16 card.

11 Determine if all the converters have power. To determine if the converter has power, check the Converter Off switch. When all of the Converter Off lights are off, the converters have power.

If all power converters	Do
powered up	step 13

Recovering link peripheral processors (continued)

If all power converters	Do
did not power up	step 12

12 To restart the power for the frame, perform the procedure *Clearing an Ext FSP LPP cabinet major alarm* procedure from the *Alarm and Performance Monitoring Procedures*.

When the procedure is complete, return to this point.

Go to step 7.

13 Reseat all NT9X74 cards as follows:

a Slowly slide each card back into the LIS.

b Push on the upper and lower edges of each faceplate to reseat the card completely in the shelf.

c Close the locking levers on the card.

14 Repeat steps 3 through 13 for each LPP in your office.

When all LPPs have power, continue this procedure at step 15.

At the MAP

15 To access the SRSTATUS level of the MAP display, type

>MAPCI;MTC;SRSTATUS

and press Enter

Example of a MAP display:

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
0  Quit   VIEW: SYSTEM                                        11:52:34
2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
3  List_ MS    0    0      2       0   IOD   5     5      30     2
4        NET   0    0      6       0   Other 21    3      13     3
5        SER1  0    1      6       0
6        SER2  1    1      60      1
7        SER3  11   8      30      1
8
9        SRSTATUS:
```

16 From the MAP display, determine the recovery status of the Series III PMs

Note: The series III PM recovery status appears at the right of the word SER3 of the MAP display. The recovery status is either pending, in progress, complete, or failed.

If the number of Series III PMs that failed recovery is	Do
zero	step 86
other than zero	step 17

Recovering link peripheral processors (continued)

17 To access the PM level of the MAP display, type

>PM

and press the Enter key.

18 To display a list of all system-busy PMs, type

>DISP STATE SYSB

and press the Enter key.

Example of a MAP response:

```
SysB LIM    : 0
SysB LIU7   : 102, 202, 207, 302, 308
SysB HLIU   : 309, 311, 315, 330, 350
SysB HSLR   : 309, 311, 315, 330, 350
```

19 Determine which of the Series III PM types are system busy.

If there are	Do
any system-busy LIMs	step 20
any system-busy NIUs	step 29
any system-busy LIU7s	step 36
any system-busy HLIUs	step 42
any system-busy HSLRs	step 48
any system-busy SVR7s	step 54
any system-busy EIUs	step 60
any system-busy APUs	step 65
any system-busy VPUs	step 70
any system-busy XLIUs	step 75
any system-busy FRIUs	step 80
no system-busy Series III PMs	step 86

20 Select a system-busy LIM to work on.

21 To post the system-busy LIM, type

>POST LIM lim_no

and press the Enter key.

where

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

Recovering link peripheral processors (continued)

Example of a MAP response:

```
LIM  1  SysB
                 Links_OOS   Taps_OOS
Unit0: SysB            6         5
Unit1: SysB            6         5
```

22 Determine if the LIM unit is system-busy, resource not available.

Note: When a LIM unit is system-busy, resource unavailable the indication SysB (RU) appears in the MAP response. This message appears to the right of the LIM unit number.

If	Do
either LIM unit is SysB (RU)	step 23
neither LIM unit is SysB (RU)	step 85

23 To clear the fault, refer to the *Clearing a PM LIM critical alarm* procedure in *Alarm and Performance Monitoring Procedures*.

When you have completed the procedure, return to this point.

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

>FBUS

and press the Enter key.

25 Determine if the F-buses are in-service.

If	Do
both F-buses are InSv	step 18
one or both F-buses are SysB	step 26

26 To manually busy the system-busy 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) that you want to manually busy

27 To return the F-bus to service, type

>RTS FBUS fbus_no

and press the Enter key.

where

Recovering link peripheral processors (continued)

fbus_no
is the number of the F-bus (0 or 1) that returns to service

If the RTS command	Do
passed	step 28
failed	step 85

28 If the other F-bus is system busy, repeat steps 26 and 27 for the other F-bus. When both of the F-buses are in-service, go to step 18.

29 Select a system-busy NIU to work on.

30 To post the system-busy NIU, type

>POST NIU niu_no

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

31 To manually busy one of the units of the affected NIU, type

>BSY UNIT unit_no FORCE

and press the Enter key.

where

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

32 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

If the LOADPM command	Do
passed	step 33
failed	step 85

33 To return the NIU to service, type

>RTS UNIT unit_no

and press the Enter key.

where

Recovering link peripheral processors (continued)

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

If the RTS command	Do
passed	step 34
failed	step 85

34 Determine if the other unit of the posted NIU is system busy or in-service.

If	Do
both units of the posted NIU are InSv	step 18
one unit of the posted NIU is SysB	step 35

35 To manually busy the system-busy NIU unit, type

```
>BSY  UNIT  unit_no  FORCE
```

and press the Enter key.

where

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

Go to step 32.

36 To post the system-busy LIU7s that failed to recover, type

```
>POST  LIU7  liu_nos
```

and press the Enter key.

where

liu_nos
are the numbers of the system-busy LIU7s (0 to 511)

Note: Use a space to separate each number.

Example input

```
>POST  LIU7  101  102  103  104  105  106  107  108
```

37 To manually busy the LIU7s in the posted set, type

```
>BSY  ALL  FORCE
```

Recovering link peripheral processors (continued)

and press the Enter key.

If the response is	Do
`Link link_no:Traffic is running on that link Please confirm (“YES",“Y",“NO", or “N"):`	step 38
anything else including additional messages with above response	step 85

38 To confirm the command, type

>YES

and press the Enter key.

39 To load the posted LIU7, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 40
failed	step 85

40 To return the LIU7 to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed, but not all LIU7s in the posted set are in service	step 41
passed and all LIU7s in the posted set are in service	step 18
failed	step 85

41 To display the next LIU7 in the posted set, type

>NEXT

and press the Enter key.

Go to step 39.

42 To post the system-busy HLIUs that failed to recover, type

>POST HLIU liu_nos

and press the Enter key.

where

liu_nos
are the numbers of the system-busy HLIUs (0 to 511)

Note: Use a space to separate each HLIU number.

Example input

```
>POST   HLIU   101  102  103  104  105  106  107  108
```

43 To manually busy the HLIUs in the posted set, type

```
>BSY  ALL  FORCE
```

and press the Enter key.

If the response is	Do
`Link link_no:Traffic is running on that link Please confirm (“YES",“Y",“NO", or “N"):`	step 44
anything else including additional messages with above response	step 85

44 To confirm the command, type

```
>YES
```

and press the Enter key.

45 To load the posted HLIU, type

```
>LOADPM
```

and press the Enter key.

If the LOADPM command	Do
passed	step 46
failed	step 85

46 To return the HLIU to service, type

```
>RTS
```

Recovering link peripheral processors (continued)

and press the Enter key.

If the RTS command	Do
passed, but not all HLIUs in the posted set are in service	step 47
passed and all HLIUs in the posted set are in service	step 18
failed	step 85

47 To display the next HLIU in the posted set, type

>NEXT

and press the Enter key.

Go to step 45.

48 To post the system-busy HSLRs that failed to recover, type

>POST HSLR liu_nos

and press the Enter key.

where

liu_nos
are the numbers of the system-busy HSLRs (0 to 511)

Note: Use a space to separate each HSLR number.

Example input

>POST HSLR 101 102 103 104 105 106 107 108

49 To manually busy the HSLRs in the posted set, type

>BSY ALL FORCE

and press the Enter key.

If the response is	Do
`Link link_no:Traffic is running on that link Please confirm (“YES",“Y",“NO", or “N"):`	step 50
anything else including additional messages with above response	step 85

50 To confirm the command, type

>YES

and press the Enter key.

51 To load the posted HSLR, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 52
failed	step 85

52 To return the HSLR to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed, but not all HSLRs in the posted set are in service	step 53
passed and all HSLRs in the posted set are in service	step 18
failed	step 85

53 To display the next HSLR in the posted set, type

>NEXT

and press the Enter key.

Go to step 51.

54 To post the system-busy SVR7s that failed to recover type

>POST SVR7 svr_nos

and press the Enter key.

where

svr_nos
are the numbers of the system-busy SVR7s (0 to 511)

Note: Use a space to separate each SVR7 number.

Example input

>POST SVR7 101 102 103 104 105 106 107 108

55 To manually busy the SVR7s in the posted set, type

>BSY ALL FORCE

Recovering link peripheral processors (continued)

and press the Enter key.

If the response is	Do
`Link link_no:Traffic is running on that link Please confirm (“YES",“Y",“NO", or “N"):`	step 56
anything else including additional messages with above response	step 85

56 To confirm the command, type

>YES

and press the Enter key.

57 To load the posted SVR7, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 58
failed	step 85

58 To return the SVR7 to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed, but not all SVR7s in the posted set are in service	step 59
passed and all SVR7s in the posted set are in service	step 18
failed	step 85

59 To display the next SVR7 in the posted set, type

>NEXT

and press the Enter key.

Go to step 57.

Recovering link peripheral processors (continued)

60 To post the system-busy EIUs that failed to recover, type

>POST EIU eiu_nos

and press the Enter key.

where

eiu_nos
are the numbers of the system busy EIUs (0 to 511)

Note: Use a space to separate each number.

Example input

>POST EIU 101 102 103 104 105 106 107 108

61 To manually busy the EIUs in the posted set, type

>BSY ALL FORCE

and press the Enter key.

62 To load the posted EIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 63
failed	step 85

63 To return the EIU to service, type

>RTS EIU eiu_no

and press the Enter key.

where

eiu_no
is the number of the EIU (0 to 511) that you want to return to service

If the RTS command	Do
passed, but not all EIUs in the posted set are in service	step 64
passed and all EIUs in the posted set are in service	step 18
failed	step 85

64 To display the next EIU in the posted set, type

>NEXT

and press the Enter key.

Go to step 62.

Recovering link peripheral processors (continued)

65 To post the system-busy APUs that failed to recover, type

>POST APU apu_nos

and press the Enter key.

where

apu_nos
are the numbers of the system-busy APUs (0 to 511)

Note: Use a space to separate each number.

Example input

>POST APU 101 102 103 104 105 106 107 108

66 To manually busy the APUs in the posted set, type

>BSY ALL FORCE

and press the Enter key.

67 To load the posted APU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 68
failed	step 85

68 To return the APU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed, but not all APUs in the posted set are in service	step 69
passed and all APUs in the posted set are in service	step 18
failed	step 85

69 To display the next APU in the posted set, type

>NEXT

and press the Enter key.

Go to step 67.

70 To post the system-busy VPUs that failed to recover, type

>POST VPU vpu_nos

and press the Enter key.

where

vpu_nos
are the numbers of the system-busy VPUs (0 to 215)

Note: Use a space to separate each number.

Example input:

```
>POST   VPU   101  102  103  104  105  106  107  108
```

71 To manually busy the VPUs in the posted set, type

```
>BSY   ALL   FORCE
```

and press the Enter key.

72 To load the posted VPU, type

```
>LOADPM
```

and press the Enter key.

If the LOADPM command	Do
passed	step 73
failed	step 85

73 To return the VPU to service, type

```
>RTS
```

and press the Enter key.

If the RTS command	Do
passed, but not all VPUs in the posted set are in service	step 74
passed and all VPUs in the posted set are in service	step 18
failed	step 85

74 To display the next VPU in the posted set, type

```
>NEXT
```

and press the Enter key.

Go to step 72.

75 To post the system-busy XLIUs that failed to recover, type

```
>POST  XLIU  xliu_nos
```

and press the Enter key.

where

xliu_nos
are the numbers of the system busy XLIUs (0 to 511)

Recovering link peripheral processors (continued)

Note: Use a space to separate each number.

Example input:

```
>POST  XLIU  101  102  103  104  105  106  107  108
```

76 To manually busy the XLIUs in the posted set, type

```
>BSY  ALL  FORCE
```

and press the Enter key.

77 To load the posted XLIU, type

```
>LOADPM
```

and press the Enter key.

If the LOADPM command	Do
passed	step 78
failed	step 85

78 To return the XLIU to service, type

```
>RTS
```

and press the Enter key.

If the RTS command	Do
passed, but not all XLIUs in the posted set are in service	step 79
passed and all XLIUs in the posted set are in service	step 18
failed	step 85

79 To display the next XLIU in the posted set, type

```
>NEXT
```

and press the Enter key.

Go to step 77.

80 To post the system-busy FRIUs that failed to recover, type

```
>POST  FRIU  friu_nos
```

and press the Enter key.

where

friu_nos
are the numbers of the system busy FRIUs (0 to 511)

Note: Use a space to separate each number.

Example input

```
>POST  FRIU  101  102  103  104  105  106  107  108
```

Recovering link peripheral processors (end)

81 To manually busy the FRIUs in the posted set, type

>BSY ALL FORCE

and press the Enter key.

82 To load the posted FRIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 83
failed	step 85

83 To return the FRIU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed, but not all FRIUs in the posted set are in service	step 84
passed and all FRIUs in the posted set are in service	step 18
failed	step 85

84 To display the next FRIU in the posted set, type

>NEXT

and press the Enter key.

Go to step 82.

85 For additional help, contact the personnel responsible for the next level of support.

86 The procedure is complete.

Recovering SuperNode SE application specific units

Application

Use this procedure to manually recover application-specific units (ASU) residing on a SuperNode SE link interface shelf (LIS) or enhanced network interface (ENI) shelf. Application-specific units include:

- network interface units (NIU)
- Common Channel Signaling 7 (CCS7) link interface units (LIU7)
- CCS7 server (SVR7)
- Ethernet interface units (EIU)
- high-speed link interface unit (HLIU)
- high-speed link router (HSLR)
- voice processor units (VPU)
- application processor units (APU)
- X.25/X.75 link interface units (XLIU)
- frame relay interface units (FRIU)

To recover ASUs which reside in a link peripheral processor (LPP) cabinet, refer to the procedure *Recovering link peripheral processors* in this document. To recover ASUs which reside in an enhanced LPP (ELPP) cabinet, refer to the procedure *Recovering enhanced link peripheral processors* in this document.

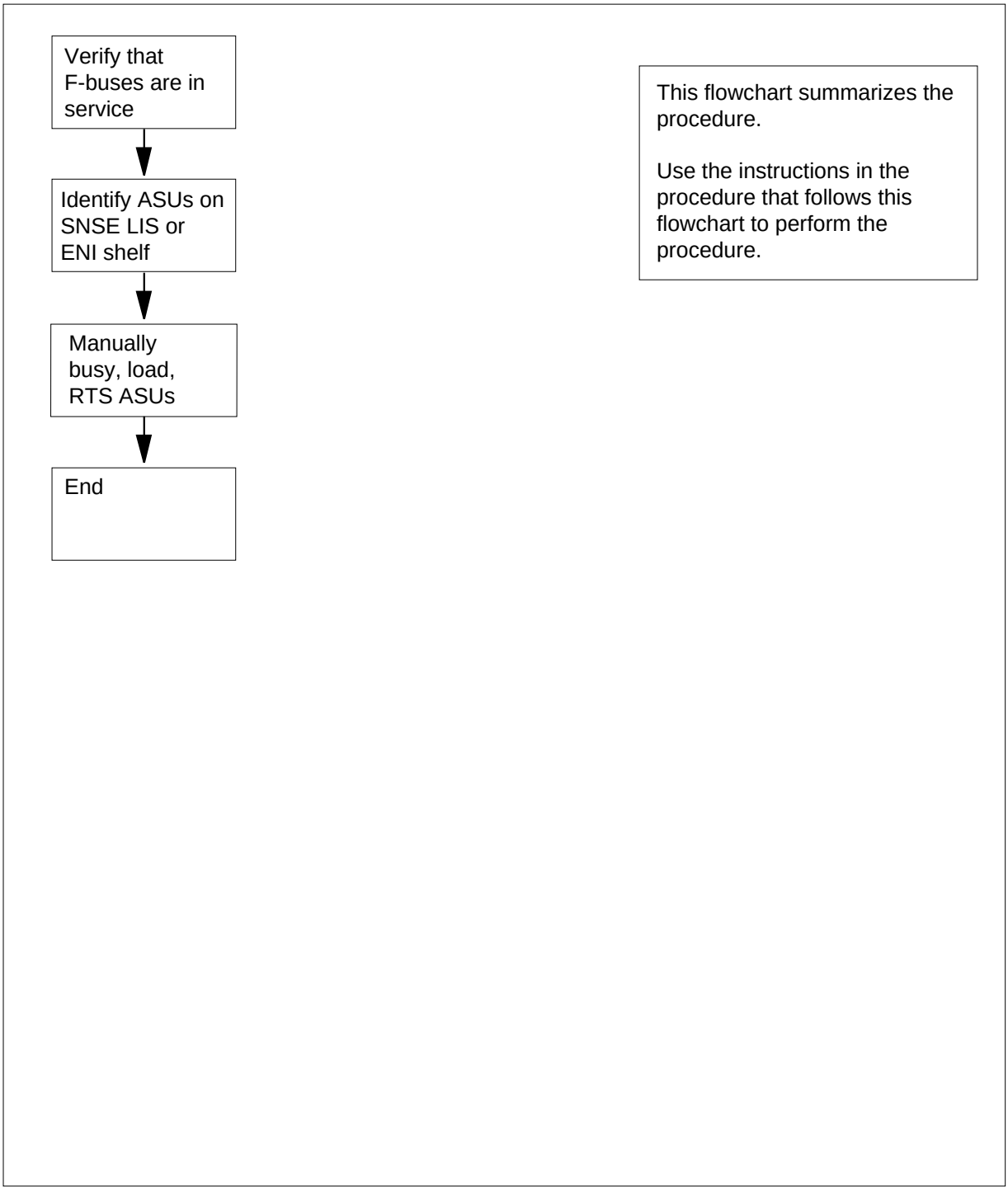
If the entire switch has lost power, do not use this procedure until you have first restored primary switching functions using the procedure *Recovering from a dead system* in this document. Recover the ASUs when directed to do so by that procedure.

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Recovering SuperNode SE application specific units (continued)

Summary of Recovering SuperNode SE application specific units



Recovering SuperNode SE application specific units (continued)

Recovering SuperNode SE application specific units

At the MAP

1 Access the MS shelf level of the MAP display by typing

`>MAPCI;MTC;MS;SHELF`

and pressing the Enter key.

2 Access the TFI card level by typing

`>CARD card_number`

and pressing the Enter key.

where

card_number
is the card number of the NT9X73 T-bus to F-bus interfacecard.

3 Determine if the F-buses are in service.

If the state of the F-buses is	Do
InSv	step 8
SysB	step 4

4 Manually busy each F-bus by typing

`>BSY 0 FBUS; BSY 1 FBUS`

and pressing the Enter key.

5 Return each manual-busy F-bus to service by typing

`>RTS 0 FBUS; RTS 1 FBUS`

and pressing the Enter key.

6 Determine if both F-buses have returned to service.

If both F-buses have	Do
returned to service	step 8
not returned to service	step 7

7 Clear any MS alarms that may be preventing the F-buses from returning to service. If necessary, consult your next level of support.

Once the F-buses are in service, continue this procedure at step 8.

8 Determine what type of ASUs are equipped on the SuperNode SE LIS or ENI shelf you are recovering.

If the SuperNode SE LIS or ENI shelf is equipped with	Do
any NIUs	step 9

Recovering SuperNode SE application specific units (continued)

If the SuperNode SE LIS or ENI shelf is equipped with	Do
any other type of ASU	step 23

9 Access the NIU inventory table by typing

```
>TABLE  NIUINV
```

and pressing the Enter key.

10 List the contents of the inventory table by typing

```
>LIST  ALL
```

and pressing the Enter key.

11 Record the NIUNO (NIU number) of each NIU associated with the SuperNode SE LIS or ENI shelf being recovered.

12 Access the PM level of the MAP display by typing

```
>PM
```

and pressing the Enter key.

13 Post the NIUs recorded in step 11 by typing

```
>POST   NIU   niu_nos
```

and pressing the Enter key.

where

niu_nos
are the numbers of the NIUs (0 to 29) associated with the LIS or ENI shelf

Note: Use a space to separate each number from the preceding number.

Example input

```
>POST  NIU  4  12
```

14 Determine if the posted NIU is system-busy.

If the posted NIU is	Do
system-busy	step 16
in any other state	step 15

15 Access the next NIU in the posted set by typing

```
>NEXT
```

and pressing the Enter key.

If	Do
the set is empty	step 23
the next NIU in the set is posted	step 14

Recovering SuperNode SE application specific units (continued)

16 Manually busy unit zero of the affected NIU by typing

>BSY UNIT 0 FORCE

and pressing the Enter key.

17 Load the NIU unit by typing

>LOADPM UNIT 0

and pressing the Enter key.

If the LOADPM command	Do
passed	step 18
failed	step 33

18 Return the NIU unit to service by typing

>RTS UNIT 0

and pressing the Enter key.

If the RTS command	Do
passed	step 19
failed	step 33

19 Determine if the other unit of the posted NIU is in service.

If	Do
both units of the posted NIU are in service	step 23
the other unit of the posted NIU is not in service	step 20

20 Manually busy the NIU unit by typing

>BSY UNIT 1 FORCE

and pressing the Enter key.

21 Load the NIU unit by typing

>LOADPM UNIT 1

and pressing the Enter key.

If the LOADPM command	Do
passed	step 22
failed	step 33

Recovering SuperNode SE application specific units (continued)

22 Return the NIU unit to service by typing

>RTS UNIT 1

and pressing the Enter key.

If the RTS command	Do
passed	step 15
failed	step 33

23 Access the link interface unit inventory table by typing

>TABLE LIUINV

and pressing the Enter key.

24 List the contents of the inventory table by typing

>LIST ALL

and pressing the Enter key.

25 Record the LIUNO (LIU number) of any LIU7, EIU, VPU, APU, XLIU, FRIU, SVR7, HLIU, and HSLR associated with the SuperNode SE LIS or ENI shelf being recovered.

26 Access the PM level of the MAP display by typing

>PM

and pressing the Enter key.

27 Display a list of all system-busy PMs by typing

>DISP STATE SYSB

and pressing the Enter key.

Example of a MAP response:

```
SysB LIU7   : 102, 202, 207, 302, 308
```

28 Determine if any of the PMs recorded in step 25 appear in the MAP response generated at step 27.

If there are	Do
system busy PMs associated with the shelf being recovered	step 29
no system busy PMs associated with the shelf being recovered	step 34

29 Post the system-busy PM by typing

>POST pm_type pm_no

and pressing the Enter key.

where

Recovering SuperNode SE application specific units (end)

pm_type
is the type of PM (LIU7, EIU, APU, VPU, XLIU, FRIU, SVR7, HLIU, or HSLR)

pm_no
is the number of the system-busy PM

30 Manually busy the posted PM by typing

>BSY FORCE

and pressing the Enter key.

31 Load the posted PM by typing

>LOADPM

and pressing the Enter key.

If the LOADPM command	Do
passed	step 32
failed	step 33

32 Return the PM to service by typing

>RTS pm_type pm_no

and pressing the Enter key.

where

pm_type
is the type of PM (LIU7, EIU, APU, VPU, XLIU, or FRIU)

pm_no
is the number of the system-busy PM

If the RTS command	Do
passed	step 27
failed	step 33

33 For further assistance, contact the personnel responsible for the next level of support.

34 You have completed this procedure.

4 Recovery procedures for individual devices and services

Introduction to recovery procedures for individual devices and services

This chapter contains procedures for performing recovery tasks for individual devices and services for recovery tasks for the DMS-100 switch. For each recovery task, you will find a procedure containing

- explanatory and context-setting information
- information
- step-action instructions

Explanatory and context-setting information

The first page of each procedure contains the following headings:

- Application (when to use the procedure)
- Action (how to use the flowchart and step-action instructions)

Summary flowchart

The flowchart is only a summary of the main actions, decision points, and possible paths you may take. Do not use the summary flowchart to perform the procedure. Instead, use it to preview what you will be doing and to prepare for it. For example, if you see that these instructions involve another office, you will know to advise that office before you begin the step-action instructions.

Step-action instructions

The step-action instructions tell you how to perform the recovery task. Normally you will perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and system information you use or see while performing the procedure. For help on DMS

commands, see *DMS-100 Family Commands Reference Manual*, 297-10001-822

Checking for call completion

Application

Use this procedure to ensure that calls can be completed through the following CCS7 signaling links:

- CCS7 link interface unit and multiple link interface unit (LIU7 and MLIU)
- CCS7 dual-link interface unit (DLIU)

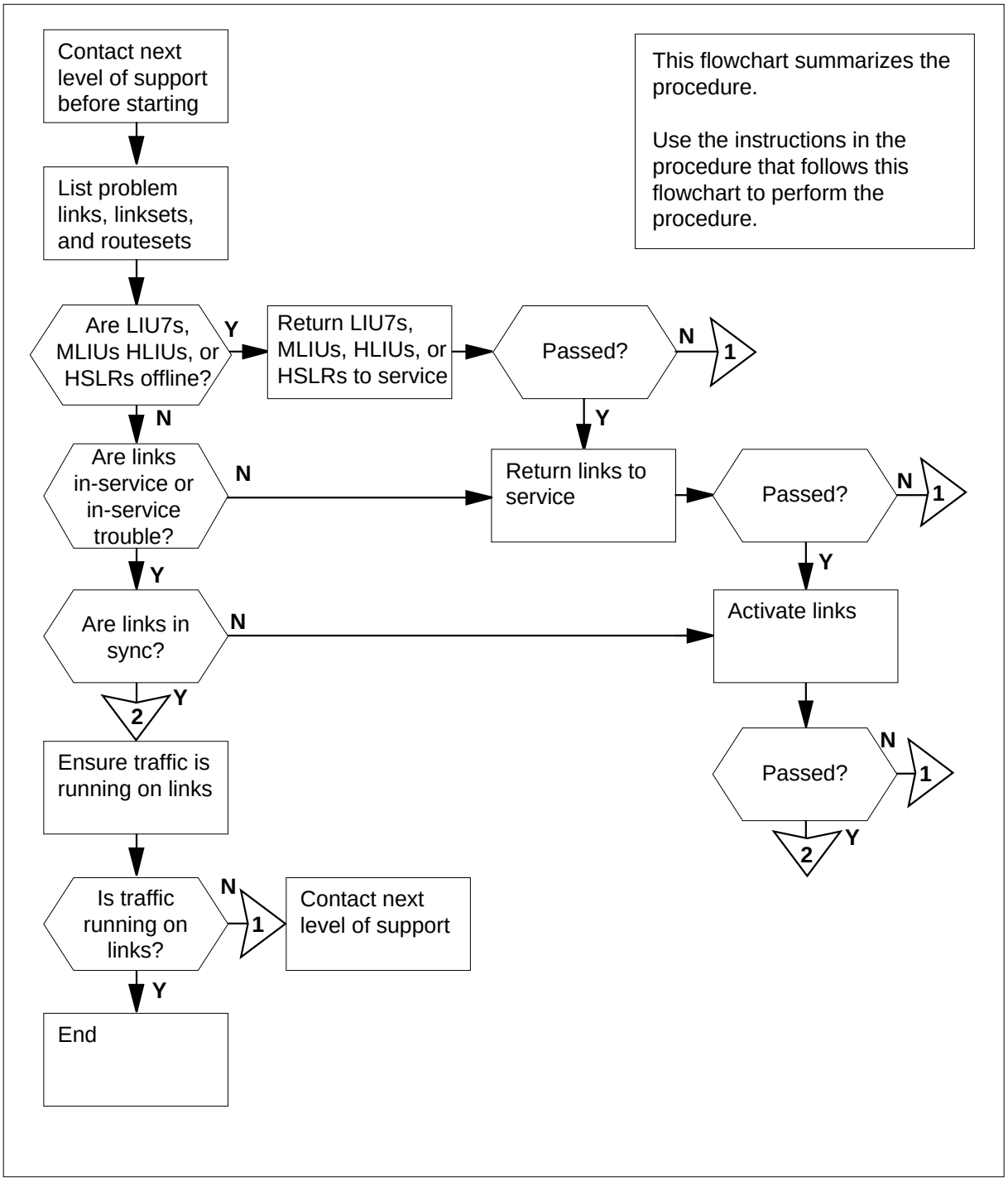
A DLIU consists of a high-speed link interface unit (HLIU) and a high-speed link router (HSLR).

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Checking for call completion (continued)

Summary of Checking for call completion



Checking for call completion (continued)

Checking for call completion

CAUTION
Possible equipment damage or service interruption
Contact your next level of support before attempting this procedure.

At the MAP

1 As LIU7s, MLIUs, HLIUs, and HSLRs begin to recover from a system failure, check the following logs:

AUDT612, AUDT613, AUDT614, AUDT615, or AUDT623, which indicate state mismatches.

CCS101, which indicates a status indication out of service (SIOS) from the far end.

CCS177, which detects inconsistency in route data.

For additional information about the log reports, see the *Log Report Reference Manual*.

Also look for the following operational measurements (OM) groups:

C7LINK2, which provides information on calls and congestion for CCS7.

C7LINK1, which provides information on the failures and recoveries of a CCS7 link.

For further information about OMs, see *Operational Measurements Reference Manual*.

2 Record the LIU7s, MLIUs, DLIUs, linksets, and routesets that are indicated in the logs and OMs examined in step 1. Ensure that you have correctly matched each routeset with its component linksets and LIU7s, MLIUs or DLIUs.

3 Make test calls to the far-end office associated with the routesets you recorded in step 2. Record any problems encountered when making the test calls, and match these problems to the routesets.

4 Choose a routeset that is associated with call completion problems through this office.

Note: Depending on the position of this office in the network, some routesets may have priority over others. Check with your next level of support to determine priority.

5 Access the C7RTESET level of the MAP display by typing

```
>MAPCI;MTC;CCS;CCS7;C7RTESET
```

and pressing the Enter key.

6 Post the routeset by typing

```
>POST  C  rteset_name
```

Checking for call completion (continued)

and pressing the Enter key.

where

rteset_name
is the name of the routeset associated with the linkset chosenin step 4

Example input:

```
>POST  C  SSP100_RT
```

Example of a MAP display:

```
C7Routeset  SSP100_RT          SysB    Linkset  Transfer
  Rte   State  Mode Cost Linkset          State    Status
  0     SysB  Assoc 0    SSP100_LK         SysB       TFP
  1     SysB  Quasi 1    SSP101_LK         SysB       TFP
```

7 Determine which linksets in the posted routeset are causing problems.

If	Do
one or more linksets are out of service	step 8
there are no more out-of-service linksets and there are still routesets associated with call completion problems	step 4
there are no more out-of-service linksets and there are no more routesets associated with call completion problems	step 51

8 Choose a linkset to work on.

9 Access the C7LKSET level of the MAP display by typing

```
>C7LKSET
```

and pressing the Enter key.

10 Post the linkset by typing

```
>POST  C  linkset_name
```

and pressing the Enter key.

where

linkset_name
is the name of the linkset chosen in step 8

Checking for call completion (continued)

```
Linkset  SSP100_LK        SYSB
   Traf Sync
Link
LK Stat Stat Resource  Stat Physical Access   Stat Action
0  SysB SysB LIU7 101  SysB DS0A
1  SysB SysB LIU7 103  SysB DS0A
2  SysB SysB DLIU 300  SysB DS1

Size of Posted Set = 3
```

Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

11 Determine which links are out of service.

12 Choose an out-of-service link.

If the link is	Do
an LIU7 or a DLIU that is `InSv` or `ISTb`	step 39
an LIU7 that is `ManB`, `SysB`, or `OffL`	step 13
a DLIU that is `ManB`, `SysB`, or `OffL`	step 21
anything else	step 48

13 Access the PM level of the MAP display by typing

`>PM`

and pressing the Enter key.

14 Post the LIU7 or MLIU by typing

`>POST  LIU7  liu_no`

or

`>POST  MLIU  mliu_no`

and pressing the Enter key.

where

liu_no or mliu_no
is the number of the LIU7 or MLIU (0 to 511) associated with the link you chose in step 12

If the state of the LIU7 or MLIU is	Do
`SysB` or `OffL`	step 15
`ManB`	step 16

15 Force the LIU7 or MLIU to busy by typing

`>BSY  FORCE`

Checking for call completion (continued)

and pressing the Enter key.

16 Return the LIU7 or MLIU to service by typing

>RTS

and pressing the Enter key.

If the RTS command	Do
passed	step 36
failed	step 17
anything else	step 50

17 Force the LIU7 or MLIU to busy by typing

>BSY FORCE

and pressing the Enter key.

18 Reset the LIU7 or MLIU by typing

>PMRESET

and pressing the Enter key.

If the PMRESET command	Do
passed, and the LIU7 is `ISTb` or `InSv`	step 36
passed, and the LIU7 is `ManB`	step 20
failed, and the LIU7 is `ManB`	step 19

Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

19 Reload the LIU7 or MLIU by typing

>LOADPM

and pressing the Enter key.

If the LOADPM command	Do
passed	step 20
failed	step 50

20 Return the LIU7 or MLIU to service by typing

>RTS

and pressing the Enter key.

If the RTS command	Do
passed	step 36
failed	step 50

21 Access the PM level of the MAP display by typing

>PM

and pressing the Enter key.

22 Post the HLIU by typing

>POST HLIU liu_no

and pressing the Enter key.

where

liu_no
is the number of the HLIU (0 to 511) associated with the link you chose in step 12

If the state of the HLIU is	Do
SysB or OffL	step 23
ManB	step 24
InSv	step 29

23 Force the HLIU to busy by typing

>BSY FORCE

and pressing the Enter key.

24 Return the HLIU to service by typing

>RTS

and pressing the Enter key.

If the RTS command	Do
passed	step 29
failed	step 25
anything else	step 50

25 Force the HLIU to busy by typing

>BSY FORCE

and pressing the Enter key.

Checking for call completion (continued)

26 Reset the HLIU by typing

>PMRESET

and pressing the Enter key.

If the PMRESET command	Do
passed, and the HLIU is ISTb or InSv	step 29
passed, and the HLIU is ManB	step 28
failed, and the HLIU is ManB	step 27

27 Reload the HLIU by typing

>LOADPM

and pressing the Enter key.

If the LOADPM command	Do
passed	step 28
failed	step 50

28 Return the HLIU to service by typing

>RTS

and pressing the Enter key.

If the RTS command	Do
passed	step 29
failed	step 50

29 Post the HSLR by typing

>POST HSLR liu_no

and pressing the Enter key.

where

liu_no
is the number of the HSLR (0 to 511) associated with the link you chose in step 12

If the state of the HSLR is	Do
SysB or OffL	step 30
ManB	step 31
InSv	step 36

Checking for call completion (continued)

30 Force the HSLR to busy by typing

>BSY FORCE

and pressing the Enter key.

31 Return the HSLR to service by typing

>RTS

and pressing the Enter key.

If the RTS command	Do
passed	step 36
failed	step 32
anything else	step 50

32 Force the HSLR to busy by typing

>BSY FORCE

and pressing the Enter key.

33 Reset the HSLR by typing

>PMRESET

and pressing the Enter key.

If the PMRESET command	Do
passed, and the HSLR is `ISTb` or `InSv`	step 36
passed, and the HSLR is `ManB`	step 35
failed, and the HSLR is `ManB`	step 34

34 Reload the HSLR by typing

>LOADPM

and pressing the Enter key.

If the LOADPM command	Do
passed	step 35
failed	step 50

35 Return the HSLR to service by typing

>RTS

Checking for call completion (continued)

and pressing the Enter key.

If the RTS command	Do
passed	step 36
failed	step 50

36 Access the C7LKSET level of the MAP display by typing

>CCS;CCS7;C7LKSET

and pressing the Enter key.

37 Post the linkset associated with the link that resides on the LIU7, MLIU or DLIU you are working on by typing

>POST C linkset_name

and pressing the Enter key.

where

linkset_name
is the name of the linkset associated with the LIU7 or MLIU

38 Determine if the link associated with the LIU7, MLIU or DLIU you are working on is still out of service.

If the link is	Do
InSv or ISTb, and the linkset is InSv orISTb	step 43
InSv or ISTb, and the linkset is out of service	step 43
out of service	step 39

39 Manually busy the link by typing

>BSY link_no

and pressing the Enter key.

where

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

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

40 Confirm the command by typing

>YES

and pressing the Enter key.

41 Return the link to service by typing

>RTS link_no

and pressing the Enter key.

where

Checking for call completion (continued)

link_no
is the number of the link in the posted linkset (0 to 15)

link_no
is the number of the link in the posted linkset (0 to 7)

If the RTS command	Do
passed	step 42
failed	step 50

42 Activate the link by typing

>ACT link_no

and pressing the Enter key.

where

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

link_no
is the number of the link in the posted linkset (0 to 7)

If the RTS command	Do
passed	step 43
failed	step 50

43 Determine if traffic is running on the link by typing

>QUERYTRF link_no

and pressing the Enter key.

where

link_no
is the number of the link in the linkset (0 to 15)

link_no
is the number of the link in the linkset (0 to 7)

Example of a MAP response:

```
QueryTrf: Link occupancy for 13:30:00 – 14:00:00
Link    Speed   Byte/sec  Erlang    MSU len %RTx  Msg/sec
   4    7000          0     0.00         0       0    0
```

Note: In the Byte/sec, Erlang, and MSU len fields, a value of 0 (zero) means that no traffic is running, and a value greater than zero means that traffic is running. In the above example, no traffic is running on the link.

If traffic on the link is	Do
running, and the linkset is InSv or ISTb	step 46

Checking for call completion (continued)

If traffic on the link is	Do
running, and the linkset is out of service	step 46
not running	step 44

44 Wait until the next query traffic snapshot is taken.

45 Determine whether traffic has begun to run on the link by typing

`>QUERYTRF link_no`

and pressing the Enter key.

where

link_no
is the number of the link in the linkset (0 to 15)

link_no
is the number of the link in the linkset (0 to 7)

Example of a MAP response:

```
QueryTrf: Link occupancy for 13:30:00 – 14:00:00
Link    Speed   Byte/sec  Erlang    MSU len %RTx  Msg/sec
   4    7000        3360    0.40       28     0    120
```

If traffic on the link is	Do
running, and the linkset is `InSv` or `ISTb`	step 46
running, and the linkset is out of service	step 46
not running	step 50

46 Check if there are more out-of-service links in the linkset on which you are working.

If there are	Do
more out of service links in the linkset on which you are working	step 12
no more out-of-service links in the linkset on which you are working and the linkset state is `InSv` or `ISTb`	step 7
no more out-of-service links in the linkset on which you are working and the linkset out of service	step 47

Checking for call completion (end)

47 You have restored traffic to the link, but the linkset is still out of service. Contact the far-end office. Tell far-end personnel that you have in-service or in-service trouble links, and that the associated linkset is out of service.

Go to step 7.

48 Access the C7RTESET level of the MAP display by typing

>C7RTESET

and pressing the Enter key.

Example of a MAP display:

```
C7Routeset  SSP100_RT          InSv    Linkset   Transfer
  Rte   State  Mode Cost Linkset         State    Status
  0     InSv  Assoc 0    SSP100_LK       InSv      TFA
  1     InSv  Quasi 1    SSP101_LK       InSv      TFA
```

49 Determine the state of the routeset.

If the state of the routeset is	Do
InSv	step 4
anything else	step 50

50 For further assistance, contact the personnel responsible for the next level of support.

51 You have completed this procedure.

Checking for message throughput

Application

Use this procedure to ensure that, after system failure, messages can be sent over the following CCS7 signaling links:

- CCS7 link interface unit (LIU7 or MLIU)
- dual link interface unit (DLIU)

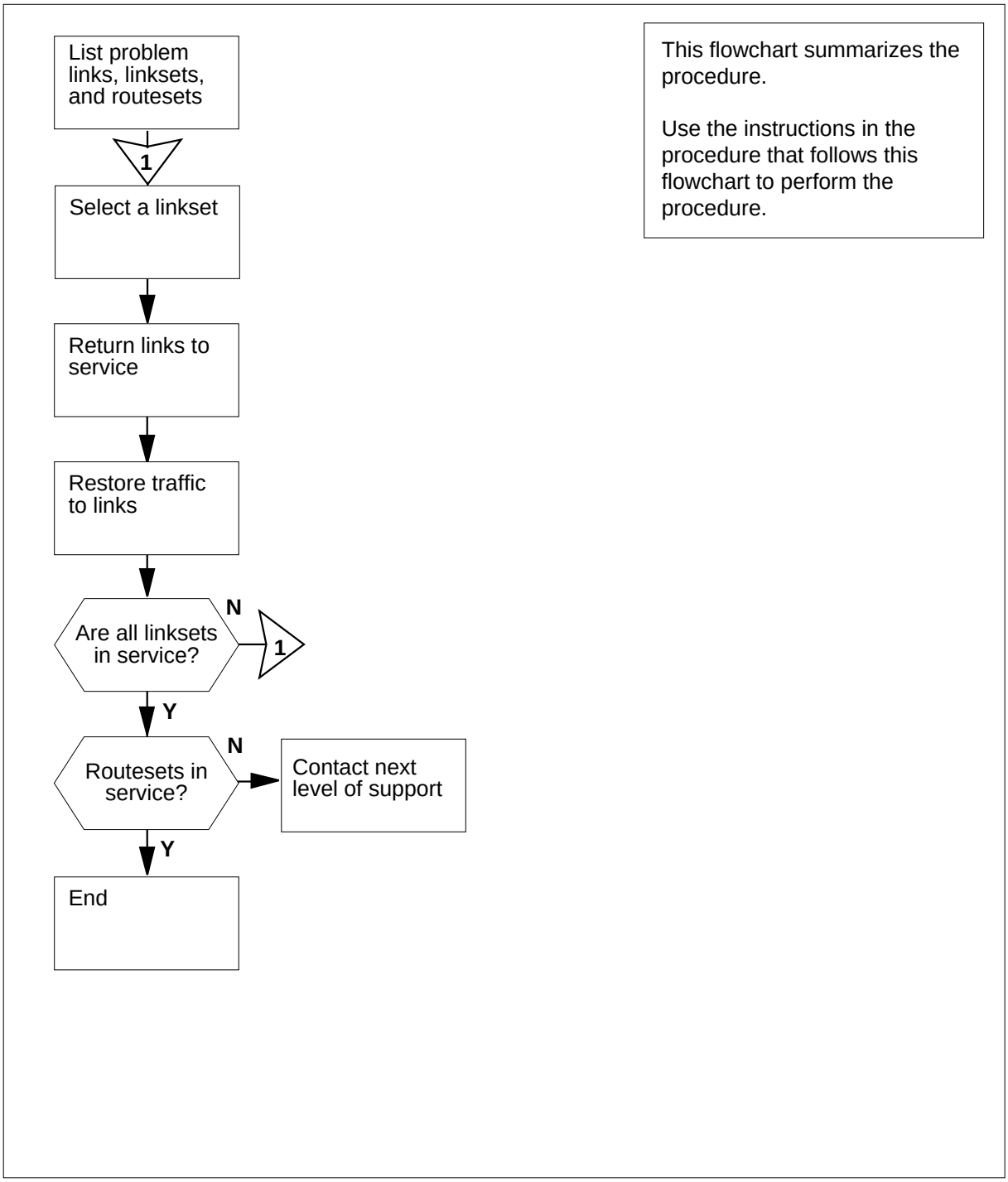
A DLIU consists of a high-speed link interface unit (HLIU) and a high-speed link router (HSLR).

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Checking for message throughput (continued)

Summary of Checking for message throughput



Checking for message throughput (continued)

Checking for message throughput

DANGER
Possible equipment damage or service interruption
Do not attempt this procedure before contacting your next level of support.

At the MAP terminal

1 As LIU7s, MLIUs, HLIUs, and HSLRs begin to recover from a system failure, check the following logs:

AUDT612, AUDT613, AUDT614, AUDT615, or AUDT623, which indicate state mismatches.

CCS101, which indicates the far end has a status indication out-of-service (SIOS) message.

CCS177, which detects problems in route data.

For additional information about the log reports, see *Log Report Reference Manual.*

Also look for the following operational measurements (OM):

C7LINK2

C7LINK1

For additional information about OMs, see *Operational Measurements Reference Manual.*

2 Record the LIU7s, MLIUs, DLIUs, linksets, and routesets that are indicated in the logs and OMs examined in step 1. Ensure that you correctly matched each routeset with its component linksets and LIU7s, MLIUs or DLIUs.

3 Ask your next level of support to make test calls to and from the far-end offices associated with the routesets you recorded in step 2. Record any problems encountered when making the test calls, and match these problems to the routesets.

4 Choose a routeset that is associated with call completion problems through this office.

Note: Depending on the position of this office in the network, some routesets may have priority over other messages. Check with your next level of support to determine priority.

5 Access the C7RTESET level of the MAP display by typing

```
>MAPCI;MTC;CCS;CCS7;C7RTESET
```

and pressing the Enter key.

6 Post the routeset by typing

```
>POST  C  rteset_name
```

and pressing the Enter key.

where

rteset_name
is the name of the routeset associated with the linkset chosen at step 4

Example input:

```
>POST  C  SSP100_RT
```

Example of a MAP response:

```
C7Routeset  SSP100_RT         SysB     Linkset   Transfer
  Rte   State  Mode Cost Linkset          State    Status
  0     SysB  Assoc 0    SSP100_LK        SysB       TFP
  1     SysB  Quasi 1    SSP101_LK        SysB       TFP
```

7 Determine which linksets in the posted routeset are causing problems.

If	Do
one or more linksets are out of service	step 8
no more out-of-service linksets, exist but routesets associated with call completion problems still exist	step 4
no more out-of-service linksets, exist and there are no more routesets on your list of routesets made in step 2	step 52

8 Choose a linkset on which to work.

9 Access the C7LKSET level of the MAP display by typing

```
>C7LKSET
```

and pressing the Enter key.

10 Post the linkset by typing

```
>POST  C  linkset_name
```

and pressing the Enter key.

where

linkset_name
is the name of the linkset chosen in step 8

Example of a MAP response:

Checking for message throughput (continued)

```
Linkset  SSP100_LK        SYSB
   Traf Sync                                          Link
LK Stat Stat Resource  Stat Physical Access   Stat Action
0  SysB SysB LIU7 101  SysB DS0A
1  SysB SysB LIU7 103  SysB DS0A
2  SysB SysB DLIU 300  SysB DS1

Size of Posted Set = 3
```

Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

11 Determine which links are out of service.

12 Choose an out-of-service link.

If the chosen link is	Do
an LIU7, MLIU or DLIU that is `InSv` or `ISTb`	step 41
an LIU7 or MLIU that is `ManB`, `SysB`, or `Offl`	step 13
a DLIU that is `ManB`, `SysB`, or `Offl`	step 21
anything else	step 54

13 Access the PM level of the MAP display by typing

`>PM`

and pressing the Enter key.

Example of a MAP response:

```
          SysB   ManB   OffL   CBsy   ISTb   InSv
 PM          1     10     12      0      6     49
```

14 Post the LIU7 or MLIU by typing

`>POST  LIU7  liu_no`

or

`>POST  MLIU  mliu_no`

and pressing the Enter key.

where

liu_no or mliu_no
is the number of the LIU7 or MLIU (0 to 511) associated with the link you chose at step 12

If the state of the LIU7 or MLIU is	Do
`SysB` or `Offl`	step 15

Checking for message throughput (continued)

If the state of the LIU7 or MLIU is	Do
ManB	step 16

15 Force the LIU7 or MLIU to busy by typing

>BSY FORCE

and pressing the Enter key.

16 Return the LIU7 or MLIU to service

>RTS

and pressing the Enter key.

If the RTS command	Do
passed, and the LIU7 is ISTb or InSv	step 36
failed, and the LIU7 is ManB or SysB	step 17
anything else	step 54

Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

17 Force the LIU7 or MLIU to busy by typing

>BSY FORCE

and pressing the Enter key.

18 Reset the LIU7 or MLIU by typing

>PMRESET

and pressing the Enter key.

If the PMRESET command	Do
passed, and the LIU7 is ManB	step 20
failed, and the LIU7 is ManB	step 19

Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

19 Reload the LIU7 or MLIU by typing

>LOADPM

and pressing the Enter key.

If the LOADPM command	Do
passed	step 20
failed	step 54

Checking for message throughput (continued)

20 Return the LIU7 or MLIU to service

>RTS

and pressing the Enter key.

If the RTS command	Do
passed	step 36
failed	step 54

21 Access the PM level of the MAP display by typing

>PM

Example of a MAP response:

```
         SysB   ManB   OffL   CBsy   ISTb   InSv
PM          1     10     12      0      6     49
```

22 Post the HLIU by typing

>POST HLIU liu_no

and pressing the Enter key.

where

liu_no
is the number of the HLIU (0 to 511) associated with the link you chose at step 12

If the state of the HLIU is	Do
SysB or Offl	step 23
ManB	step 24
InSv	step 29

23 Force the HLIU to busy by typing

>BSY FORCE

and pressing the Enter key.

24 Return the HLIU to service

>RTS

and pressing the Enter key.

If the RTS command	Do
passed, and the HLIU is ISTb or InSv	step 29
failed, and the HLIU is ManB or SysB	step 25
anything else	step 54

Checking for message throughput (continued)

25 Force the HLIU to busy by typing

>BSY FORCE

and pressing the Enter key.

26 Reset the HLIU by typing

>PMRESET

and pressing the Enter key.

If the PMRESET command	Do
passed, and the HLIU is ManB	step 28
failed, and the HLIU is ManB	step 27

27 Reload the HLIU by typing

>LOADPM

and pressing the Enter key.

If the LOADPM command	Do
passed	step 28
failed	step 54

28 Return the HLIU to service

>RTS

If the RTS command	Do
passed	step 29
failed	step 54

29 Post the HSLR by typing

>POST HSLR liu_no

and pressing the Enter key.

where

liu_no
is the number of the HSLR (0 to 750) associated with the link you chose in step 12

If the state of the HSLR is	Do
SysB or Offl	step 30
ManB	step 31
InSV	step 36

Checking for message throughput (continued)

30 Force the HSLR to busy by typing

>BSY FORCE

and pressing the Enter key.

31 Return the HSLR to service

>RTS

and pressing the Enter key.

If the RTS command	Do
passed, and the HSLR is ISTb or InSv	step 36
failed, and the HSLR is ManB or SysB	step 32
anything else	step 54

32 Force the HSLR to busy by typing

>BSY FORCE

and pressing the Enter key.

33 Reset the HSLR by typing

>PMRESET

and pressing the Enter key.

If the PMRESET command	Do
passed, and the HSLR is ManB	step 35
failed, and the HSLR is ManB	step 34

34 Reload the HSLR by typing

>LOADPM

and pressing the Enter key.

If the LOADPM command	Do
passed	step 35
failed	step 54

35 Return the HSLR to service

>RTS

Checking for message throughput (continued)

and pressing the Enter key.

If the RTS command	Do
passed	step 36
failed	step 54

36 Access the C7LKSET level of the MAP display by typing

```
>C7LKSET
```

and pressing the Enter key.

37 Post the linkset associated with the link that resides on the LIU7, MLIU or the HLIU and HSLR that you just worked on by typing

```
>POST  C  linkset_name
```

and pressing the Enter key.

where

linkset_name
is the name of the linkset associated with the LIU7, MLIU or the HLIU and HSLR

38 Determine if the link associated with the LIU7, MLIU or the HLIU and HSLR that you just worked on is still out of service.

If the link is	Do
InSv or ISTb, and the linkset is InSv or ISTb	step 39
InSv or ISTb, and the linkset is out of service	step 40
out of service	step 41

39 You restored traffic on the linkset.

Go to step 7 and choose another out of service linkset on which to work.

40 You restored traffic to the link, but the linkset is still out of service. Contact the far-end office. Tell personnel there that you have in service or in-service trouble links and that the associated linkset is out of service.

Go to step 7.

41 Inhibit the link from traffic flow for safety by typing

```
>INH  link_no
```

and pressing the Enter key.

where

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

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

Checking for message throughput (continued)

Note: The link_no shown applies only to the ITU protocol. ITU is the only protocol that supports MLIU.

If the INH command	Do
passed	step 42
failed	step 54

42 Manually busy the link by typing

>BSY link_no

and pressing the Enter key.

where

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

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

MAP response:

```
ENTER YES TO
CONFIRM BSY
OR NO TO QUIT
```

43 Confirm the command by typing

>YES

and pressing the Enter key.

If the BSY command	Do
passed	step 44
failed	step 54

44 To deactivate the link, type

>DEACT link_no

and pressing the Enter key.

where

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

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

If the DEACT command	Do
passed	step 45
failed	step 54

Checking for message throughput (continued)

45 Activate the link by typing

>ACT link_no

and pressing the Enter key.

where

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

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

If the ACT command	Do
passed	step 46
failed	step 54

46 Return the link to service by typing

>RTS link_no

and pressing the Enter key.

where

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

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

If the RTS command	Do
passed	step 47
failed	step 54

47 To uninhibit the link from traffic flow, type

>UINH link_no

and pressing the Enter key.

where

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

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

If the INH command	Do
passed	step 48
failed	step 54

48 Determine if traffic is running on the link by typing

>QUERYTRF link_no

Checking for message throughput (continued)

and pressing the Enter key.

where

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

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

Example of a MAP response:

```
QueryTrf: Link occupancy for 13:30:00 – 14:00:00
Link    Speed    Byte/sec  Erlang   MSU len %RTx
   4    7000           0     0.00        0     0
Link    CellRate Cell/sec  Erlang
   5    3622           0     0.00
```

Note: In the Byte/sec, Erlang, and MSU len fields, a value of 0 (zero) indicates that no traffic is running, and a value greater than zero indicates that traffic is running. In the above example, there is no traffic running on the link.

If traffic on the link is	Do
running, and the linkset is InSv or ISTb	step 39
running, and the linkset is out of service	step 40
not running	step 49

49 Wait until the next query traffic snapshot is taken.

50 Determine if traffic has begun to run on the link by typing

`>QUERYTRF link_no`

and pressing the Enter key.

where

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

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

Example of a MAP response:

```
QueryTrf: Link occupancy for 14:00:00 – 14:30:00
Link    Speed    Byte/sec  Erlang   MSU len %RTx
   4    7000           52    0.40       28     0
Link    CellRate Cell/sec  Erlang
   5    3622           45    0.36
```

If traffic on the link is	Do
running, and the linkset is InSv or ISTb	step 39

Checking for message throughput (end)

If traffic on the link is	Do
running, and the linkset is out of service	step 40
not running	step 51

51 Check if there are more out-of-service links in the linkset on which you are working.

If there are	Do
more out-of-service links in the linkset on which you are working	step 12
no more out-of-service links in the linkset on which you are working	step 7

52 Access the C7RTESET level of the MAP display by typing

>C7RTESET

and pressing the Enter key.

Example of a MAP display

```
C7Routeset  SSP100_RT         InSv     Linkset   Transfer
  Rte   State  Mode Cost Linkset         State     Status
  0     InSv  Assoc 0    SSP100_LK        InSv       TFA
  1     InSv  Quasi 1    SSP101_LK        InSv       TFA
```

53 Determine the state of all recorded routesets.

If the state of all recorded route-sets is	Do
InSv	step 55
anything else	step 54

54 For additional help, contact the personnel responsible for the next level of support.

55 You have completed this procedure.

Recovering AMA data with block numbers

Application

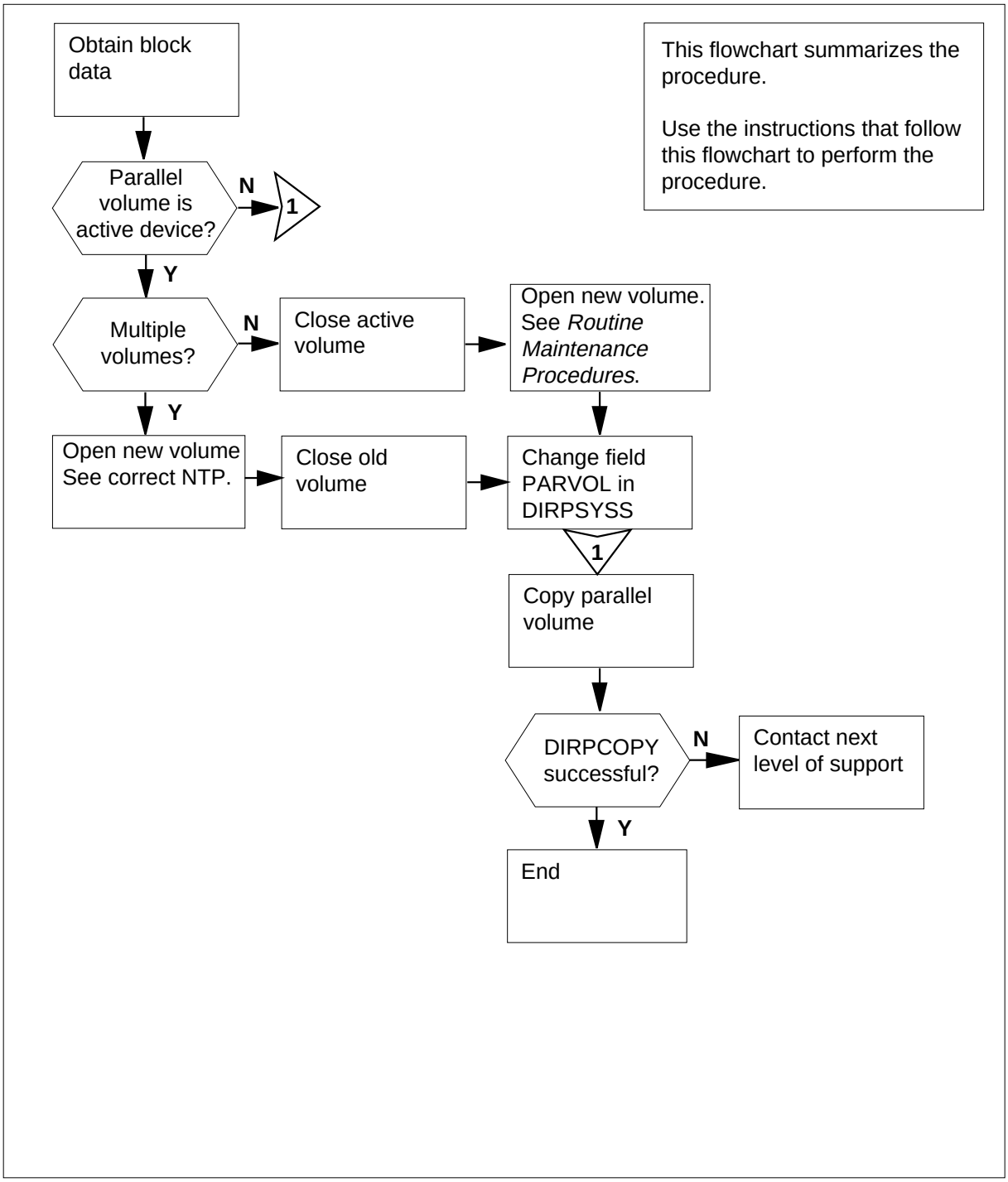
Use this procedure to recover automatic message accounting (AMA) data from a distributed processing peripheral (DPP). Use this procedure to recover AMA data from a DPP with two tape ports. The two tape ports failed as a result of a system fault. The fault causes the parallel data block numbers to appear on the DIRP101 logs. This procedure recovers the data from the DPP and copies the data to tape.

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Recovering AMA data with block numbers (continued)

Summary of Recovering AMA data with block numbers



Recovering AMA data with block numbers (continued)

Recovering AMA data with block numbers

CAUTION
Possible loss or damage of AMA data
Use this procedure and follow it exactly. Not doing so will lose or corrupt automatic message accounting (AMA) data. The operating company uses AMA data to produce billings. Loss or damage of AMA data results in revenue loss for the operating company.

At the MAP terminal

1 To access the DIRP level of the MAP, type

`>MAPCI;MTC;IOD;DIRP`

and press the Enter key.

2 To enable the printer, type

`>RECORD START ONTO device`

and press the Enter key.

where

device
is the printer type

3 To access the DIRP logs, type

`>LOGUTIL;OPEN DIRP`

and press the Enter key.

Example of a MAP display:

```
DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 16 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 22 SOS–FILE–ID= nnnn nnnn nnnn
TEXT1= NEXT PARALLEL FILE BLOCK NUMBER: 1            PARM1= 0
TEXT1= NEXT ACTIVE FILE BLOCK NUMBER: 4              PARM2= FFFF

DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 17 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 23 SOS–FILE–ID= nnnn nnnn nnnn
TEXT1= LAST PARALLEL FILE BLOCK NUMBER: 1            PARM1= 0
TEXT1= LAST ACTIVE FILE BLOCK NUMBER: 1              PARM2= FFFF
```

4 Check the DIRP logs to determine if the parallel data block numbers appear on the log.

5 The following are parallel block numbers in the DIRP101 log:

- the last sequence number before the DPP power failure
- the first sequence number after the DPP power failure

Recovering AMA data with block numbers (continued)

6 To query the volumes that are in the AMA subsystem, type

>QUERY AMA VOLUMES

and press the Enter key.

Example of a MAP:

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0    1       2      0        6   ***YES***

REGULAR VOLUMES
VOL#   VOLNAME  STATE   IOC  CARD  VOL  FSEG  ROOM  VLID  FILES   22
  T0   READY     0    0     0   N/A     0   2400
23         T    AVAIL     2    1     0   N/A     0   2400

PARALLEL VOLUME(S)
PARALLEL          STATE  IOC  CARD  VOL  FSEG  ROOM  VLID  CURR
B910212061307AMA  READY    0     0    0   N/A     1  2400  YES
```

If	Do
If the parallel volume	Do
is the current file	step 7
is not the current file	step 17

7 Determine if your installation has multiple volumes.

If	Do
If your installation	Do
has multiple volumes	step 8
does not have multiple volumes	step 11

8 Allocate a volume.

Refer to *Allocating recording volumes* in the DIRP utility in *Routine Maintenance Procedures*, and return to this point.

9 To close the active volume, type

>CLOSE AMA PARALLEL

and press the Enter key.

Example of a MAP response:

```
SENDING REQUEST TO SUBSYSTEM
PLEASE CONFIRM ("YES" or "NO")
```

10 To confirm the request, type

>YES

Recovering AMA data with block numbers (continued)

and press the Enter key.

Example of a MAP display:

```
REQUEST SENT TO SUBSYSTEM.  CHECK DIRP LOGS FOR DETAILS
```

Go to step 14.

11 To close the active volume, type

>CLOSE AMA PARALLEL

and press the Enter key.

Example of a MAP display:

```
SENDING REQUEST TO SUBSYSTEM
PLEASE CONFIRM ("YES" or "NO")
```

12 To confirm the request, type

>YES

and press the Enter key.

Example of a MAP response:

```
REQUEST SENT TO SUBSYSTEM.  CHECK DIRP LOGS FOR DETAILS
```

13 Allocate a volume.

Refer to *Allocating recording volumes* in the DIRP utility in *Routine Maintenance Procedures*, and return to this point.

14 To query the volumes that are in the AMA subsystem, type

>QUERY AMA VOLUMES

and press the Enter key.

Example of a MAP display:

```
QUERY AMA PARALLEL NONE
```

15 Check the DIRP logs for details on closure of the active volume.

Example of a MAP display:

```
DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 16 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 22 SOS-FILE-ID= nnnn nnnn nnnn
TEXT1= NEXT PARALLEL FILE BLOCK NUMBER: 1            PARM1= 0
TEXT1= NEXT ACTIVE FILE BLOCK NUMBER: 4              PARM2= FFFF
```

16 To exit the table, type

>QUIT

and press the Enter key.

17 Load a blank or expired tape on the magnetic tape drive.

Refer to *Magnetic Tape Reference Manual*, 297-1001-118, and return to this point.

Recovering AMA data with block numbers (end)

18 To copy the parallel AMA file to the tape, type

```
>DIRPCOPY  AMA  file_name  Tn  start_no  block_length
```

and press the Enter key.

where

file_name
is the parallel file name

Tn
is the number of the tape drive

start_no
is the first sequence number that you will recover (you obtained the sequence number in step 4)

block_length is the first sequence number subtracted from the last
sequence number (you obtained both sequence numbers in step 4)

Example input:

```
>DIRPCOPY  AMA  DIRPPARALLEL_AMA  T2  5400  100
```

Note: The length of time the DIRPCOPY utility requires to copy the file depends on the length of the parallel file. The length of required time also depends on the number of blocks that the DIRPCOPY utility must copy.

If	Do
If the DIRPCOPY command	Do
was successful	step 20
was not successful	step 19

19 For additional help, contact the next level of support.

20 The procedure is complete.

Recovering AMA data without DIRP block numbers

Application

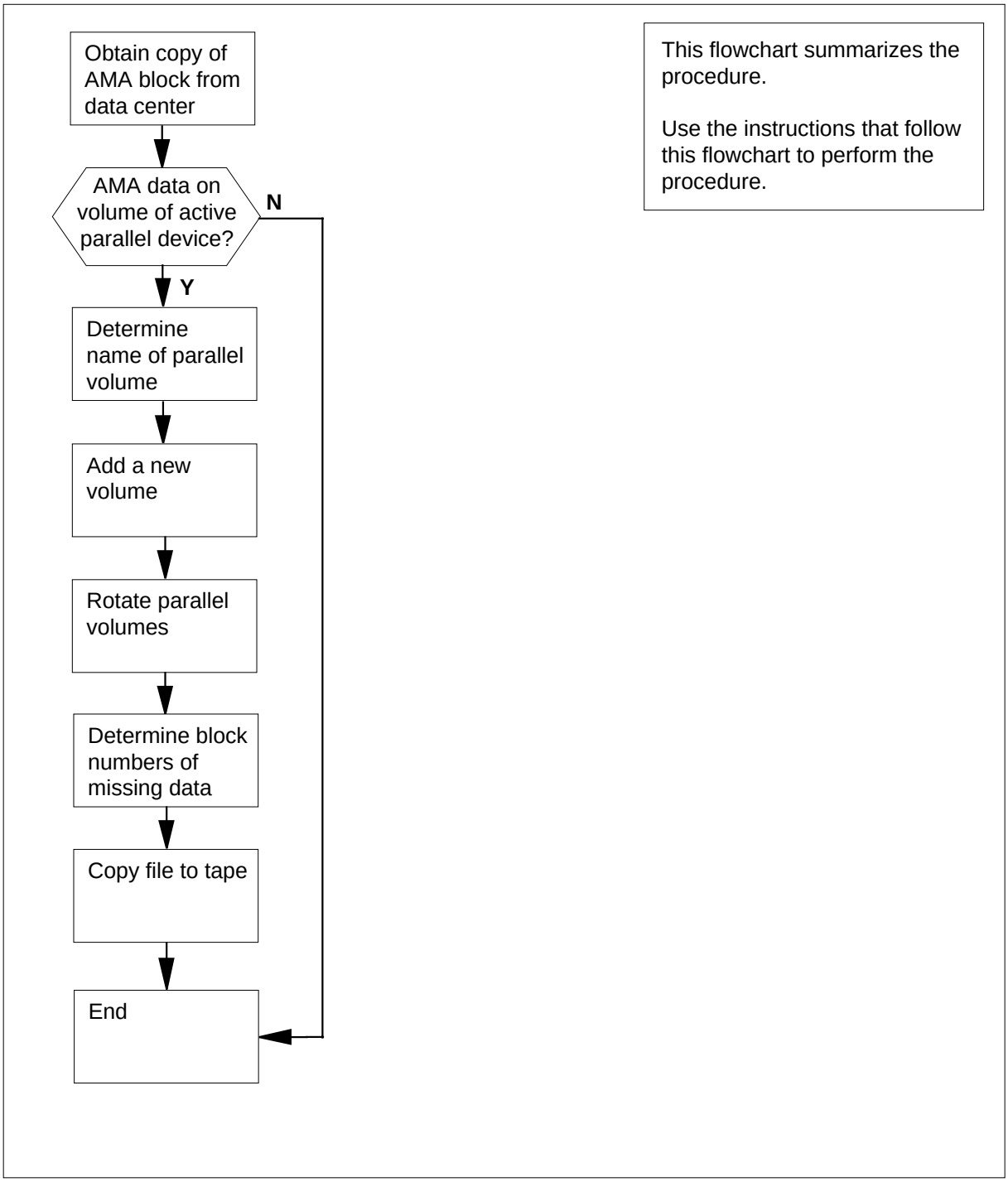
Use this procedure to recover automatic message accounting (AMA) data. Use this procedure after a fault on a distributed processing peripheral (DPP) disrupts recording to the DPP. The fault consists of inaccessible data that the DPP collected and stored earlier. The data is inaccessible because the DIRP data block numbers do not appear on the DIRP101 logs. This procedure shows you how to determine the DIRP block numbers of the data that the DPP did not record. This procedure shows you how to retrieve the data from the parallel recording device and copy the data to tape.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action table that follows the flowchart to perform the procedure.

Recovering AMA data without DIRP block numbers (continued)

Summary of Recovering AMA data without DIRP block numbers



Recovering AMA data without DIRP block numbers (continued)

Recovering AMA data without DIRP block numbers

At your current location

1

CAUTION
Possible loss or damage of AMA data
The operating company uses automatic message accounting (AMA) data to produce billings. Loss or damage of AMA data results in revenue loss for the operating company. If you do not use this procedure or do not follow this procedure exactly, you can lose or damage AMA data.

Contact your data center. Obtain the following information:

- the time frame of the missing AMA data
- the sequence number of the DPP block that the data center received before the DPP power failure
- the sequence number of the DPP block that the data center received after the DPP power failure

Note: The sequence numbers this document refers to are DPP reference numbers. The DMS or data center do not assign these sequence numbers.

At the MAP terminal

2 To access the DPP level of the MAP, type

```
>MAPCI;MTC;IOD;DPP  AMA
```

and press the Enter key.

3 To access the DIRP logs, type

```
>LOGUTIL;OPEN  DIRP
```

and press the Enter key.

4 To enable the printer, type

```
>RECORD  START  ONTO  device
```

and press the Enter key.

where

device
is the printer type

5 To obtain a print of the DPP AMA block that the data center received before the DPP power failure, type

```
>IDXMAINT  EXAMINE  AMA  PACKED  first_sequence_no
```

Recovering AMA data without DIRP block numbers (continued)

and press the Enter key.

where

first_sequence_no
is the sequence number that the data center received before the DPP power failure occurred. The data center supplies this number (see step 1).

Example of a MAP display:

```
00 00 00 00 00 00 00 00 12 25 11 15  00
07BA 0000 0040 0000 AA00 700C 043C 036C 0602 091C 036C
0602 091C 0021 3C00 000C 0200 000C 1C0C 1C00 0C60 2C82
0780 1C1C 0060 2C83 8579 2C00 0015 2C00 0000 000C 1010
301C 0000 0023 0C00 0838 8C
```

6 In the office records, note the time and date that is on the first line of the AMA data block.

For example:

DATE=12 25TIME=11 15

7 To obtain a print of the DPP AMA block that the data center received after the DPP power failure, type

`>IDXMAINT EXAMINE AMA PACKED last_sequence_no`

and press the Enter key.

where

last_sequence_no
is the sequence number that the data center received after the end of the DPP power failure. The data center supplies this number (see step 1).

Note: The sequence numbers this document refers to are DPP reference numbers. The DMS or data center do not assign these sequence numbers.

Example of a MAP display:

```
00 00 00 00 00 00 00 00 12 25 11 15  00
07BA 0000 0040 0000 AA00 700C 043C 036C 0602 091C 036C
0602 091C 0021 3C00 000C 0200 000C 1C0C 1C00 0C60 2C82
0780 1C1C 0060 2C83 8579 2C00 0015 2C00 0000 000C 1010
301C 0000 0023 0C00 0838 8C
```

8 In the office records, note the time and date that is on the first line of the AMA data block.

For example:

DATE=12 25TIME=11 15

Recovering AMA data without DIRP block numbers (continued)

9 Determine if the AMA blocks are concurrent with the time frame specified in step 1.

If	Do
If the AMA blocks	Do
are concurrent	step 11
are not concurrent	step 10

10 Request a copy of the DPP AMA blocks from the data center.

11 Prepare a record of the DPP block of AMA data that the data center received before the DPP power failure occurred. To prepare the record, locate the letters AA. These letters signify the start of the record in the block of data. Proceed according to the following example.

Example of a MAP display:

```
00 00 00 00 00 00 00 00 12 25 13 15  00
07BA 0000 0040 0000 AA00 700C 043C 036C 0602 091C 036C
0602 091C 0021 3C00 000C 0200 000C 1C0C 1C00 0C60 2C82
0780 1C1C 0060 2C83 8579 2C00 0015 2C00 0000 000C 1010
301C 0000 0023 0C00 0838 8C
```

Note: The letter C indicates the end of each field.

A record prepared from the preceding example resembles the following:

- Structure code = 00700C
- Call code = 043C
- Originating numbering plan area (NPA) = 602C
- Originating number = 8207801C
- Terminating numbering plan area (NPA) = 00602C
- Terminating number = 8385792C
- Connected time = 0000152C

You can obtain additional information on how to break down the block of AMA data into the required record. For additional information, refer to *Bellcore Format Automatic Message Accounting Reference Guide*, 297-1001-830.

12 Check the record again to make sure the record is correct.

13 Repeat steps 11 and 12 for the block of AMA data that the data center received after the DPP power failure.

Go to step 14.

14 Determine if the AMA data that requires recovery is on the parallel volume. The parallel volume is on the active device.

If	Do
If the location of the AMA data	Do

Recovering AMA data without DIRP block numbers (continued)

If	Do
is on the active parallel device	step 15
is not on the active parallel device	step 34
is not known	step 15

15 To access the IOC level of the MAP, type

>MTC;IOD;LISTDEV DDU

and press the Enter key.

Example of a MAP display:

```
CC    CMC        IOD    Net    PM    Lns    Trks    Ext
                 1DDUOS
                 M
DDU              IOD    IOC   0     1     2      3      4
 0  Quit         Stat      1DDUOS
 2
 3               DIRP         XFER
 4 List Dev_
 5               IOC Card   0   1    2    3    4    5
 6 Tst           1  Port 0123 0123 0123 0123 0123 0123
 7 Bsy               Stat .--- ..SS .--- SSSS P--- SSSS
 8 RTS               Type  MTD  Cons DDU Cons DDU  Cons
 9 Offl
10
11 Start         Card 4   Unit           1
12 Stop             User         SYSTEM  Drive_State
13                  Status        SBsy   drive-faults
14
15 Status
16 Alloc
17 Fcnt
18 Clrfcnt_
   User ID
Time  hh  :      mm>
```

16 Note the IOC number and card number for each disk drive utility (DDU).

17 To determine the name of the parallel volume of each DDU, type

>IOC ioc_no;CARD card_no;ALLOC

and press the Enter key.

where

ioc_no
is the input/output controller number of the DDU that you noted in step 1

Recovering AMA data without DIRP block numbers (continued)

card_no
is the card number of the DDU that you noted in step 16

Example of a MAP display:

```
IOD  IOC   0     1     2      3      4
Stat           1DDUOS

DIRP    EXFER:

IOC     Card   0   1    2    3    4    5
        Port 0123 0123 0123 0123 0123 0123
        Stat .--- ..SS .--- SSSS P--- SSSS


Card 4   Unit           1
        User         SYSTEM  Drive_State
        Status        Ready    on_line
Alloc

VOLID VOL_NAME SERIAL_NO BLOCKS ADDR TYPE R/O FILES OPEN
   0    IMAGE      A000    12288  D010   0   NO     0
   1    VOL1       A001     3000  D010   0   NO     0
   2    UNALLOCD   A002    15004 D010   1   NO     0
   3    AMAP      A002    15004 D010   1   NO     0
```

18 Repeat step 17 for each DDU.

19 To access the disk utility, type

>DISKUT

and press the Enter key.

20 To enter the parallel volume name, type

>LISTVOL vol_name ALL

and press the Enter key.

where

vol_name
is the parallel volume name that you determined in step 17

Example of a MAP display:

```
DSKUT
>listvol D000AMAP ALL
```

21 Note the active file name.

For example:

DIRPPARALEL_AMA

22 To enter the active file name, type

>SHOWFL file_name

Recovering AMA data without DIRP block numbers (continued)

and press the Enter key.

where

file_name
is the active file name that you noted in step 21

Example of a MAP display:

```
DSKUT:

>showfl B900821122501_AMA
Volume Size:    32000   blocks
Free Space:     1246 blocks
Number of Files:     26


Show all Volume data

>showvol D000AMAP   full
Volume Size:        32000   blocks
Free Space:         1246  blocks
Number of Files:        1
Volume number:      5
Volume Id:          2845


Show all File data

>showfl D000AMAP  full
Number of Records:  6788
Last Modified:    1991/11/17  00:00:23.387 MON.
Fixed Record:     2845 0008  0001
File Owner:         SYSTEM
```

23 Note the Last Modified date and the time of each file.

24 Repeat steps 20 through 23 for each parallel volume you obtained in step 17.

25 Compare the times and dates that you obtained in step 23 with the same information given by the data center. This information is also the information that you recorded in steps 6 and 8. To locate the parallel volume that collected AMA data during the period that the DPP failed, compare the times and dates.

26 To exit the disk utility, type

>QUIT

and press the Enter key.

27 To access the DIRP level of the MAP, type

>DIRP

and press the Enter key.

Recovering AMA data without DIRP block numbers (continued)

28 To query the volumes, which are now mounted in the AMA subsystem, type

>QUERY AMA VOLUMES

and press the Enter key.

Example of a MAP display:

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0    1       2      0        6      NO

REGULAR VOLUMES
VOL#   VOLNAME  STATE   IOC  CARD  VOL  FSEG  ROOM  VLID  FILES
PARALLEL VOLUME(S)
VOL# VOLNAME STATE  IOC  CARD  VOL  FSEG  ROOM  VLID  CURR
   0 D00AMA2 READY    0     0    0   N/A     1  2400  YES
```

29 From the MAP response you obtained in step 28, determine if you have parallel volumes in the available state.

If	Do
If parallel volumes	Do
are available	step 31
are not available	step 30

30 Add a new disk volume.

Refer to *Setting up parallel recording on disk in the DIRP utility* in *Routine Maintenance Procedures*, and return to this point.

31

CAUTION
Loss of parallel data
Manual parallel rotations reduce the total amount of parallel data that the switch retains. Loss of parallel data can occur.

To rotate the subsystem, type

>ROTATE AMA PARALEL

and press the Enter key.

Example of a MAP display:

```
 **WARNING–MANUAL PARALLEL ROTATIONS REDUCE THE TOTAL
  **AMOUNT OF PARALLEL DATA RETENTION ON THE SWITCH
 SENDING REQUEST TO SUBSYSTEM
 PLEASE CONFIRM ("YES" OR NO"):
```

Recovering AMA data without DIRP block numbers (continued)

32 To confirm the information, type

>YES

and press the Enter key.

Example of a MAP display:

```
REQUEST SENT TO SUBSYSTEM, CHECK DIRP LOG FOR DETAILS
```

33 Wait for a DIRP101 log to confirm the rotation.

If	Do
If the DIRP101 log	Do
confirmed the rotation	step 34
did not confirm the rotation	step 72

34 To access the disk utility, type

>DISKUT

and press the Enter key.

35 To locate the block number that the data center received after the DPP power failure, type

>LISTVOL vol_name ALL

and press the Enter key.

where

vol_name
is the parallel volume name that you determined in step 17

Example of a MAP display:

```
DSKUT
>LISTVOL D000AMAP ALL
```

36 Note the active file name.

37 Note the Last Modified date and time of each file.

38 To exit the disk utility, type

>QUIT

and press the Enter key.

39 To return to the DIRP level of the MAP, type

>DIRP

and press the Enter key.

40 To dump the contents of the AMA file, type

>AMADUMP BC file_name

and press the Enter key.

Recovering AMA data without DIRP block numbers (continued)

where

file_name
is the AMA file name that you noted in step 25

41 Determine the number of the DPP block that the data center received before the DPP power failure. To determine the number, filter the information that you obtained in step 11. To begin, type

```
>FILTER  ADD  'structure_code
```

and press the Enter key.

where

structure_code
is the structure code you obtained in step 11

Example input:

```
>FILTER  ADD  '00700
```

Example of a MAP display:

```
>>>ADDING....STRUCTURE CODE: 00700
          RECORD CODE:  00700
            CALL CODE:
```

42 Enter the call code that you obtained in step 11.

Example input:

```
>043C
```

In response, the filter function prompts you for a number of fields.

43 To fill in the ORIG NPA field, use the originating numbering plan area (NPA) value that you obtained in step 11. If the value contains zeros, you must define the field with all the zeros included.

Example input:

```
>602* or 602C
```

To continue to the next field, press the Enter key.

Note: The * is a wild card. The * matches any variable.

44 To fill in the ORIG NUMBER field, use the originating number value that you obtained in step 11. If the value contains zeros, define the field with all the zeros included.

Example input:

```
>9422640* or 9422640C
```

To continue to the next field, press the Enter key.

Note: The * is a wild card. The * matches any variable.

45 To fill in the TERM NPA field, use the terminating numbering plan area (NPA) value you obtained in step 11. If the value contains zeros, define the field with all the zeros included.

Example input:

```
>00602* or 00602C
```

Recovering AMA data without DIRP block numbers (continued)

To continue to the next field, press the Enter key.

Note: The * is a wild card. The * matches any variable.

46 To fill in the TERM NUMBER field, use the terminating number value that you obtained in step 11. If the value contains any zeros, define the field with all the zeros included.

Example input:

>8385792* or 8385792C

To continue to the next field, press the Enter key.

Note: The * is a wild card. The * matches any variable.

47 To fill in the CONNECT TIME field on the screen, use the connect time value that you obtained in step 11. If the value contains zeros, define the field with all the zeros included.

Example input:

>0000152* or 0000152C

Press the Enter key.

Note: The * is a wild card. The * matches any variable.

48 To stop the movement of prompts to the next field, type

>$

and press the Enter key.

49 To check the information you entered in the filter field in steps 43 to 47, type

>FILTER DISPLAY ALL

and press the Enter key.

This command displays a record that contains all the fields that you defined.

Example of a MAP display:

```
*HEX ID = AA STRUCT CODE:00700*  CALL TYPE:****
SENSOR TYPE: **** SENSOR ID: ******** REC OFC TYPE: ****
REC OFC ID: ******** DATE: ****** TIMING IND: ******
STUDY IND: ******** ANSWER: ** SERV OBSERVED: **
OPER ACTION: ** SERV FEAT: **** ORIG NPA; 602C
ORIG NO: 9422640C OVERSEAS IND: **  TERM NPA; 00602C
TERM NO: 8385792C TIME: ******** ELAPSED TIME: **********
IC/INC PREFIX: ****** CC DATE: ****** CC TIME: 0000152C
ELAPSED CC: ********** IC/INC EVENT: **** TRK ROUTING: **
DIALING: ** ANI: **
```

50 To enable the filter function, type

>FILTER ENABLE

and press the Enter key.

51 To filter through the parallel file, type

>DUMP CALL DETAILS

and press the Enter key.

Recovering AMA data without DIRP block numbers (continued)

This command filters through the parallel file. The command searches for the defined record. One record matches the data that you entered into the filter. When the utility locates the record, the block number that the data center received before the DPP power failure appears.

Example of a MAP display:

```
>>>BLOCK NO:15
*HEX ID = AA STRUCT CODE:00700*  CALL TYPE:****
SENSOR TYPE: **** SENSOR ID: ******** REC OFC TYPE: ****
REC OFC ID: ******** DATE: ****** TIMING IND: ******
STUDY IND: ******** ANSWER: ** SERV OBSERVED: **
OPER ACTION: ** SERV FEAT: **** ORIG NPA; 602C
ORIG NO: 9422640C OVERSEAS IND: **  TERM NPA; 00602C
TERM NO: 8385792C TIME: ******** ELAPSED TIME: **********
IC/INC PREFIX: ****** CC DATE: ****** CC TIME: 0000152C
ELAPSED CC: ********** IC/INC EVENT: **** TRK ROUTING: **
DIALING: ** ANI: **
```

52 Note the block number that appears on the screen. In the example in step 51, the block number is 15.

53 To check the full block against the block the data center provided, type

`>DUMP CALL DETAILS block_number 1`

and press the Enter key.

where

block_number
is the number that you recorded in step 52

54 To disable the FILTER ADD command you used in step 41, type

`>FILTER DISABLE`

and press the Enter key.

55 To delete the FILTER ADD command you used in step 41, type

`>FILTER DELETE structure_code 1`

and press the Enter key.

where

structure_code
is the structure code you obtained in step 11

Example input:

`>FILTER DELETE '00700`

56 Determine the number of the DPP block the data center received after the DPP power failure. To determine the number, filter the information you obtained in step 13. To begin, type

`>FILTER ADD 'structure_code`

and press the Enter key.

where

Recovering AMA data without DIRP block numbers (continued)

structure_code
is the structure code you obtained in step 13

Example of a MAP display:

```
>>>ADDING....STRUCTURE CODE: 00625
          RECORD CODE:  00625
            CALL CODE:
```

57 Enter the call code that you obtained in step 13.

Example input:

>067C

In response, the filter function prompts you for a number of fields.

58 To fill in the ORIG NPA field, use the originating numbering plan area (NPA) value that you obtained in step 13. If the value contains zeros, define the field with all the zeros included.

Example input:

>602* or 602C

To continue to the next field, press the Enter key.

Note: The * is a wild card. The * matches any variable.

59 To fill in the ORIG NUMBER field, use the originating number value that you obtained in step 13. If the value contains zeros, define the field with all the zeros included.

Example input:

>602* or 602C

To continue to the next field, press the Enter key.

Note: The * is a wild card. The * matches any variable.

60 To fill in the TERM NPA field, use the terminating numbering plan area (NPA) value that you obtained in step 13. If the value contains zeros, define the field with all the zeros included.

Example input:

>00602* or 00602C

To continue to the next field, press the Enter key.

Note: The * is a wild card. The * matches any variable.

61 To fill in the TERM NUMBER field, use the terminating number value that you obtained in step 13. If the value contains any zeros, define the field with all the zeros included.

Example input:

>2239754* or 2239754C

To continue to the next field, press the Enter key.

Note: The * is a wild card. The * matches any variable.

62 To fill in the CONNECT TIME field on the screen, use the connect time value you obtained in step 13. If the value contains zeros, define the field with all the zeros included.

Recovering AMA data without DIRP block numbers (continued)

Example input:

>0000943* or 0000943C

Press the Enter key.

Note: The * is a wild card. The * matches any variable.

63 To stop the movement of prompts to the next field, type

>$

and press the Enter key.

64 To check the information again that you obtained in the filter field in steps 58 to 62, type

>FILTER DISPLAY ALL

and press the Enter key.

This command displays a record that contains all the fields you defined in step 64.

Example of a MAP display:

```
*HEX ID = AA STRUCT CODE:00625*  CALL TYPE:****
SENSOR TYPE: **** SENSOR ID: ******** REC OFC TYPE: ****
REC OFC ID: ******** DATE: ****** TIMING IND: ******
STUDY IND: ******** ANSWER: ** SERV OBSERVED: **
OPER ACTION: ** SERV FEAT: **** ORIG NPA; 602C
ORIG NO: 6319561C OVERSEAS IND: **  TERM NPA; 00602C
TERM NO: 2239754C TIME: ******** ELAPSED TIME: **********
IC/INC PREFIX: ****** CC DATE: ****** CC TIME: 0000943C
ELAPSED CC: ********** IC/INC EVENT: **** TRK ROUTING: **
DIALING: ** ANI: **
```

65 To enable the filter function, type

>FILTER ENABLE

and press the Enter key.

66 To filter through the parallel file, type

>DUMP CALL DETAILS

and press the Enter key.

This command filters through the parallel file. This command searches for the defined record. One record matches the data you entered into the filter. When the utility locates the record, the block number the data center received before the DPP power failure appears.

Example of a MAP display:

Recovering AMA data without DIRP block numbers (continued)

```
>>>BLOCK    NO:27
*HEX ID = AA STRUCT CODE:00625*  CALL TYPE:****
SENSOR TYPE: **** SENSOR ID: ******** REC OFC TYPE: ****
REC OFC ID: ******** DATE: ****** TIMING IND: ******
STUDY IND: ******** ANSWER: ** SERV OBSERVED: **
OPER ACTION: ** SERV FEAT: **** ORIG NPA; 602C
ORIG NO: 6319561C OVERSEAS IND: **  TERM NPA; 00602C
TERM NO: 2239754C TIME: ******** ELAPSED TIME: **********
IC/INC PREFIX: ****** CC DATE: ****** CC TIME: 0000943C
ELAPSED CC: ********** IC/INC EVENT: **** TRK ROUTING: **
DIALING: ** ANI: **
```

67 Note the block number that appears on the screen.

68 To check the block against the block the data center provided, type

>DUMP CALL DETAILS block_number 1

and press the Enter key.

where

block_number
is the number you noted in step 67

69 Mount a tape acceptable for subsystem recording on a magnetic tape drive.

Refer to *Magnetic Tape Reference Manual*, 297-1001-118 and return to this point.

70 To copy the parallel AMA file to the tape, type

>DIRPCOPY AMA file_name Tn start_no block_length

and press the Enter key.

where

file_name
is the parallel file name

Tn
is the number of the tape drive

start_no
is the block number you obtained in step 52, plus 1;

for example, 15+1=16

block_length
is the number you obtained in step 67. Subtract 1, and subtract the start_no; for example, (27-1)-16=10

Example input:

>DIRPCOPY AMA DIRPPARALLEL_AMA T2 16 10

Note: The length of time the DIRPCOPY utility requires to copy the file depends on the length of the parallel file. The length of time required also depends on the number of blocks the utility must copy.

Recovering AMA data without DIRP block numbers (end)

71 Determine if the DIRPCOPY command was successful.

If	Do
If the DIRPCOPY command	Do
was successful	step 73
was not successful	step 72

72 For additional help, contact the next level of support.

73 The procedure is complete.

Recovering CCS7 linksets

Application

Use this procedure to recover Common Channel Signaling 7 (CCS7) linksets.

The CCS7 linksets consist of the following links:

- CCS7 link interface units (LIU7 and MLIU)
- CCS7 dual-link interface units (DLIU)

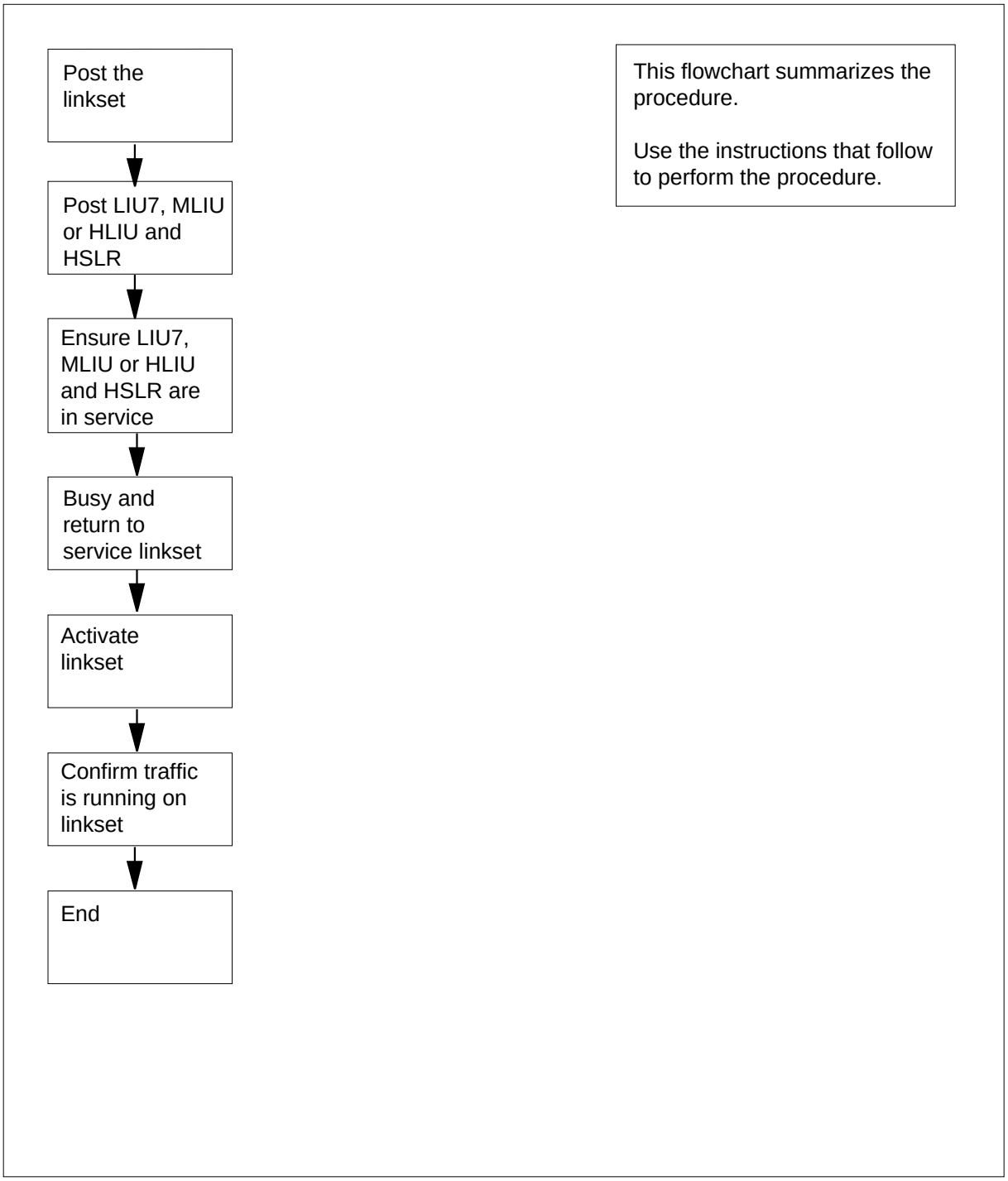
DLIU consists of high-speed link interface unit (HLIU) and high-speed link router (HSLR).

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 recovery task.

Recovering CCS7 linksets (continued)

Summary of Recovering CCS7 linksets



Recovering CCS7 linksets

At the MAP terminal

1 To access the C7LKSET level of the MAP display, type

>CCS;CCS7;C7LKSET

and press the Enter key.

2 To post the linksets that are in an in-service-trouble (ISTb) state, type

>POST S ISTB

and press the Enter key.

Example of a MAP display:

```
Linkset  SSP100_LK        ISTb
   Traf Sync                                          Link
LK Stat Stat Resource  Stat Physical Access   Stat Action
0  InSv Sync LIU7 101  InSv DS0A
1  ISTb Sync LIU7 103  InSv DS0A
2  InSv Sync DLIU 300  InSv DS1

Size of Posted Set = 3
```

If there are	Do
ISTb linksets	step 4
not ISTb linksets	step 3

3 To post the linksets that are system busy (SysB), type

>POST S SYSB

and press the Enter key.

Example of a MAP display:

```
Linkset  SSP100_LK        SysB
   Traf Sync                                          Link
LK Stat Stat Resource  Stat Physical Access   Stat Action
0  SysB SysB LIU7 101  InSv DS0A
1  SysB SysB LIU7 103  InSv DS0A
2  SysB SysB DLIU 300  InSv DS1

Size of Posted Set = 3
```

If there are	Do
SysB linksets	step 4

Recovering CCS7 linksets (continued)

If there are	Do
not SysB linksets	step 45

4 Determine if any links are out of service.

If one or more links are	Do
InSv or ISTb, and the linkset is InSv or ISTb	step 5
out of service	step 6

5 You have restored traffic on the linkset.

If there are out-of-service link-sets and you have	Do
worked on all the linksets	step 42
not worked on all the linksets	step 2

6 Select an out-of-service link and follow the table below.

If the selected link is associated with an	Do
LIU7 or MLIU	step 7
DLIU	step 16

7 To access the PM level of the MAP display, type

```
>MAPCI;MTC;PM
```

and press the Enter key.

8 To post the LIU7 or MLIU, type

```
>POST  LIU7  liu_no
```

or

```
>POST MLIU mliu_no
```

and press the Enter key.

where

liu_no
is the number of the LIU7 (0 to 511)

mliu_no
is the number of the MLIU

Recovering CCS7 linksets (continued)

9 Determine the state of the posted LIU7 or MLIU.

If the state of the LIU7 or MLIU is	Do
InSv	step 15
Offl	step 10
ManB	step 11

10 To force the LIU7 or MLIU to busy, type

>BSY FORCE

and press the Enter key.

11 To return the LIU7 or MLIU to service, type

>RTS FORCE

and press the Enter key.

If the RTS command	Do
passed	step 15
failed	step 12

12 To reset the LIU7 or MLIU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 14
failed	step 13

13 To load the LIU7 or MLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 14
failed	step 44

14 To force the LIU7 or MLIU to return to service, type

>RTS FORCE

Recovering CCS7 linksets (continued)

and press the Enter key.

If the RTS command	Do
passed	step 15
failed	step 44

15 To determine which link this LIU7 or MLIU belongs to, type

>QUERYPM

and press the Enter key.

Go to step 32.

16 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

17 To post the HLIU, type

>POST HLIU liu_no

or

>POST MLIU mliu_no

and press the Enter key.

where

liu_no or mliu_no
is the number of the HLIU (0 to 511)

18 Determine the state of posted HLIU.

If the state of the HLIU is	Do
InSv	step 24
Offl	step 19
ManB	step 20

19 To force the HLIU to busy, type

>BSY FORCE

and press the Enter key.

20 To return the HLIU to service, type

>RTS FORCE

and press the Enter key.

If the RTS command	Do
passed	step 24

Recovering CCS7 linksets (continued)

If the RTS command	Do
failed	step 21

21 To reset the HLIU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 23
failed	step 22

22 To load the HLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 23
failed	step 44

23 To force the HLIU to return to service, type

>RTS FORCE

and press the Enter key.

If the RTS command	Do
passed	step 24
failed	step 44

24 To post the HSLR, type

>POST HSLR liu_no

and press the Enter key.

where

liu_no or mliu_no
is the number of the HSLR (0 to 511)

25 Determine the state of posted HSLR.

If the state of the HSLR is	Do
InSv	step 31
Offl	step 26

Recovering CCS7 linksets (continued)

If the state of the HSLR is	Do
ManB	step 27

26 To force the HSLR to busy, type

>BSY FORCE

and press the Enter key.

27 To return the HSLR to service, type

>RTS FORCE

and press the Enter key.

If the RTS command	Do
passed	step 31
failed	step 28

28 To reset the HSLR, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 30
failed	step 29

29 To load the HSLR, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 30
failed	step 44

30 To force the HSLR to return to service, type

>RTS FORCE

and press the Enter key.

If the RTS command	Do
passed	step 31
failed	step 44

Recovering CCS7 linksets (continued)

31 To determine which link this HSLR belongs to, type

>QUERYPM

and press the Enter key.

Go to step 32.

32 To post the linkset type

>CCS;CCS7;C7LKSET;post c linkset_name

where linkset_name is that returned by the QUERYPM command.

33 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)

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

Note: The link_no shown applies only to the ITU protocol. ITU is the only protocol that supports MLIU.

If the response is	Do
`Link link_no:Traffic is running on that link` `Please confirm(“YES",“Y",“NO", or “N"):`	step 34
anything else including additional messages with above response	step 44

34 To confirm the command, type

>YES

and press the Enter key.

35 To return the link to service, type

>RTS link_no

and press the Enter key.

where

link_no
is the number of the link in the posted linkset (0 to 15)

Recovering CCS7 linksets (continued)

link_no
is the number of the link in the posted linkset (0 to 7)

If the RTS command	Do
passed	step 36
failed	step 41

36 To activate the link, type

>ACT link_no

and press the Enter key.

where

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

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

If the ACT command	Do
passed	step 37
failed	step 44

37 To determine if traffic is running on the link, type

>QUERYTRF link_no

and press the Enter key.

where

link_no
is the number of the link in the linkset (0 to 15)

link_no
is the number of the link in the linkset (0 to 7)

Example of a MAP response for LIU7 links:

```
QueryTrf: Link occupancy for 13:30:00 – 14:00:00
Link    Speed   Byte/sec  Erlang  MSU len  %RTx  Msg/sec
   0    7000           0    0.00       17    0        0
```

Note: For LIU7 or MLIU links, in the Byte/sec and Erlang fields, a value of 0 (zero) means that no traffic is running, and a value greater than zero means that traffic is running. In this example, no traffic is running on the link.

Example of a MAP response for high-speed (DLIU) links:

```
QueryTrf: Link occupancy for 13:30:00 – 14:00:00
Link  CellRate  Cell/sec  CPU Occ  MSU len  %RTx  Msg/sec
   0    3622       691       51%      25     0      671
```

Recovering CCS7 linksets (continued)

Note: For DLIU links, in the Cell/sec and CPU Occ fields, a value of 0 (zero) means that no traffic is running, and a value greater than zero means that traffic is running. In this example, traffic is running on the link.

If traffic on the link is	Do
running, and the linkset is InSv or ISTb	step 41
running, and the linkset is out of service	step 38
not running	step 39

38 You have restored traffic to the link, but the linkset is still out of service. Contact the far-end office. Tell far-end personnel that you have in-service or in-service trouble links, and that the associated linkset is out of service.

Go to step 41.

39 Wait until the next query traffic snapshot. In the Example of a MAP response in step 37, the next snapshot is at 14:30.

40 To determine if the traffic has begun to run on the link, type

>QUERYTRF link_no

and press the Enter key.

where

link_no
is the number of the link in the linkset (0 to 15)

link_no
is the number of the link in the linkset (0 to 7)

Example of a MAP response:

```
QueryTrf: Link occupancy for 14:00:00 – 14:30:00
Link    Speed  Byte/sec  Erlang   MSU len  %RTx  Msg/sec
   0    7000         52     0.40      28     0      128
```

If traffic on the link is	Do
running, and the linkset is InSv or ISTb	step 41
running, and the linkset is out of service	step 38
not running	step 44

Recovering CCS7 linksets (end)

41 Check if out-of-service links still exist in the linkset on which you are working.

If out-of-service links still exist in the linkset and you have	Do
not worked on those links	step 6
worked on those links	step 42

42 Determine if there are any alarms present in the alarm banner.

If alarms are	Do
present	step 43
not present	step 45

43 Clear any alarms that remain. Perform the correct alarm clearing procedures in *Alarm and Performance Monitoring Procedures*. When this procedure is complete, return to step 42.

44 For additional help, contact the next level of support.

45 This procedure is complete.

Recovering CompuCALL

Application

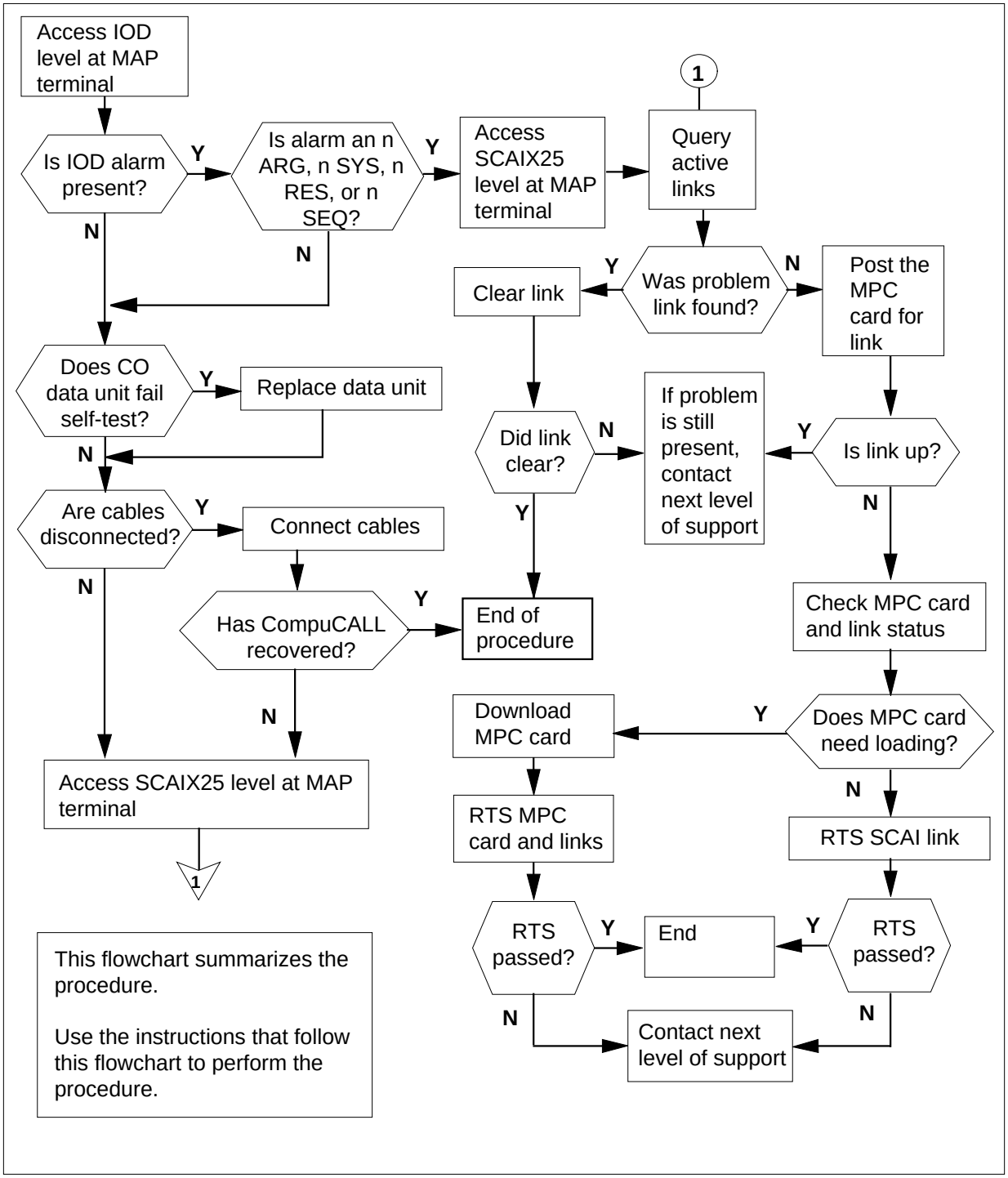
Use this procedure to restore CompuCALL to service.

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Recovering CompuCALL (continued)

Summary of Recovering CompuCALL



Recovering CompuCALL (continued)

Recovering CompuCALL

At the MAP terminal:

1 To access the menu for the input/output device (IOD), type

`>MAPCI;MTC;IOD`

and press the Enter key.

2 To check for an IOD alarm, look for an alarm code under the IOD subsystem header.

Note: There are no alarms for CompuCALL. The alarms mentioned here are for the multiprotocol controller (MPC) card and MPC card functions.

Example of a MAP display:

```
CC  MS  IOD   Net  PM  CCS  Lns  Trks  Ext
 .   .    .     .   .   .    .    .     .
```

If	Do
a dot (.) appears under the IOD subsystem header	step 4
an alarm code appears under the IOD subsystem header	step 3

3 Identify the alarm code under the IOD subsystem header.

Example of a MAP display:

```
CC  MS   IOD   Net  PM  CCS  Lns  Trks  Ext
 .   .   n ARG   .    .   .    .    .     .
```

If	Do
an n ARG, n SYS, n RES, or n SEQ alarm code appears	step 9
an alarm code other than listed here appears	clear the alarm and go to step 4.

4 Perform a self-test on the NT4X25 data unit to verify the operation of the data unit for the central office (CO).

Lift the flip-flop lid of the data unit. Toggle the self-test/normal option switch to the self-test position and back to the normal position.

You hear a short beep. After a short delay, all LEDs on the face of the data unit light for 4 s.

If the directory number (DN) LEDs flash, a self-test failure is present.

Recovering CompuCALL (continued)

You hear a short beep. All LEDs (except the power LED) turn off.

If the central office data unit	Do
fails the self-test	step 5
passes the self-test	step 6

5 Replace the data unit with a new data unit.

6 Check for disconnected cables between the MPC circuit pack and the data unit. Check for disconnected cables between the data unit and the jackbox.

Connect the 32-pin connector of the NT0X26LY cable to either port 2 or port 3 of the MPC circuit pack.

Connect the 25-pin connector of the NT0X26LY cable to the data unit or modem.

Use a cable with RJ11 connectors to connect the data unit or modem to the jackbox. If the connect light on the data unit flashes, either the cable does not connect or the data unit is bad.

If you	Do
find disconnected cables	step 7
do not find disconnected cables	step 9

7 Connect the disconnected cables.

8 The CO part of this recovery procedure is complete. If CompuCALL is not recovered, go to step 9.

At the MAP terminal:

9 The problem is not in the CO.

To access the SCAIX25 MAP terminal level, type

```
>MAPCI;MTC;IOD;SCAIX25
```

and press the Enter key.

10 To post the link that has the problem, type

```
>POST  mpc#  link#
```

and press the Enter key.

where

mpc#
is the number of the MPC where the link is associated

link#
is the number of the link where you found the problem

11 To query the active links, type

```
>QUERY session#
```

and press the Enter key.

where

session#
is the active session number to query (range of values is 0through 59)

If you	Do
find the problem link	step 22
do not find the problem link	step 12

12 To post the MPC card for the problem link and make sure that the link is up, type

>IOD;IOC x;CARD y

and press the Enter key.

where

IOC x
is the IOC shelf number where the MPC resides

CARD y
is the number of the MPC card

If the link	Do
is not up	step 13
is up but trouble is present	step 24
is up and fault cleared	step 25

13 Check the status of the MPC and the MPC link.

```
Card 7      Unit  10
   User     SYSTEM BOARD LINK0 LINK1 LINK2 LINK3
   Status   Ready COMACT  UNEQ  N/A   UNEQ  OFFL
```

Example of a MAP display:

If the MAP of the posted MPC	Do
resembles the following display	step 14
does not resemble the following display	step 16

14 To busy the link, type

>BSY mpc# link#

and press the Enter key.

where

mpc#
is the number of the MPC card

Recovering CompuCALL (continued)

link#
is the number of the link

15 To return the busied link to service, type

>RTS mpc# link#

and press the Enter key.

where

mpc#
is the number of the MPC card

link#
is the number of the link

If RTS	Do
passed	step 25
failed	step 24

16 Continue to check the status of the MPC and the MPC link.

Example of a MAP display:

```
Card 7      Unit  10
   User     SYSTEM BOARD LINK0 LINK1 LINK2 LINK3
   Status   SysB  NOLOAD  UNEQ  N/A   UNEQ  OFFL
```

If the MAP of the posted MPC	Do
resembles the following display	step 17
does not resemble the following display	step 24

17 To download the MPC card, type

>DOWNLD mpc#

and press the Enter key.

where

mpc#
is the number of the MPC card

Example of a MAP display:

```
Card 7  Unit    10
   User SYSTEM BOARD LINK0 LINK1 LINK2 LINK3
   Status   SysB  LOADED  UNEQ  N/A   UNEQ  OFFL
```

18 To busy the MPC card, type

>BUSY mpc#

and press the Enter key.

where

mpc#
is the number of the MPC card

19 To return the MPC card to service, type

>RTS mpc#

and press the Enter key.

where

mpc#
is the number of the MPC card

If RTS	Do
passed	step 20
failed	step 24

20 To busy each link associated with the MPC card, type

>BSY mpc# link#

and press the Enter key.

where

mpc#
is the number of the MPC card

link#
is the number of the link

21 To return each link to service, type

>RTS mpc# link#

and press the Enter key.

where

mpc#
is the number of the MPC card

link#
is the number of the link

If RTS	Do
passed	step 25
failed	step 24

Recovering CompuCALL (end)

22

WARNING
If you close the link, communications that use the link will close.
If you issue the CLEAR command from the SCAIX25 MAP terminal level, the command ends the CompuCALL session. The link does not close.

To clear the link, type

>CLEAR session#

and press the Enter key.

where

session#
is the session# on the link to clear

Example of a MAP terminal response:

```
Active session:  Do you really want to clear
 (Yes or No)?
```

23 To respond to the prompt, type

>YES

and press the Enter key.

If the link	Do
cleared	step 25
did not clear	step 24

24 For additional help, contact the next level of support.

25 The SCAI link is clear. If CompuCALL did not recover, contact operating company personnel. Inform operating company personnel that a problem occurred with customer premises equipment.

Recovering data from a disk to tape

Application

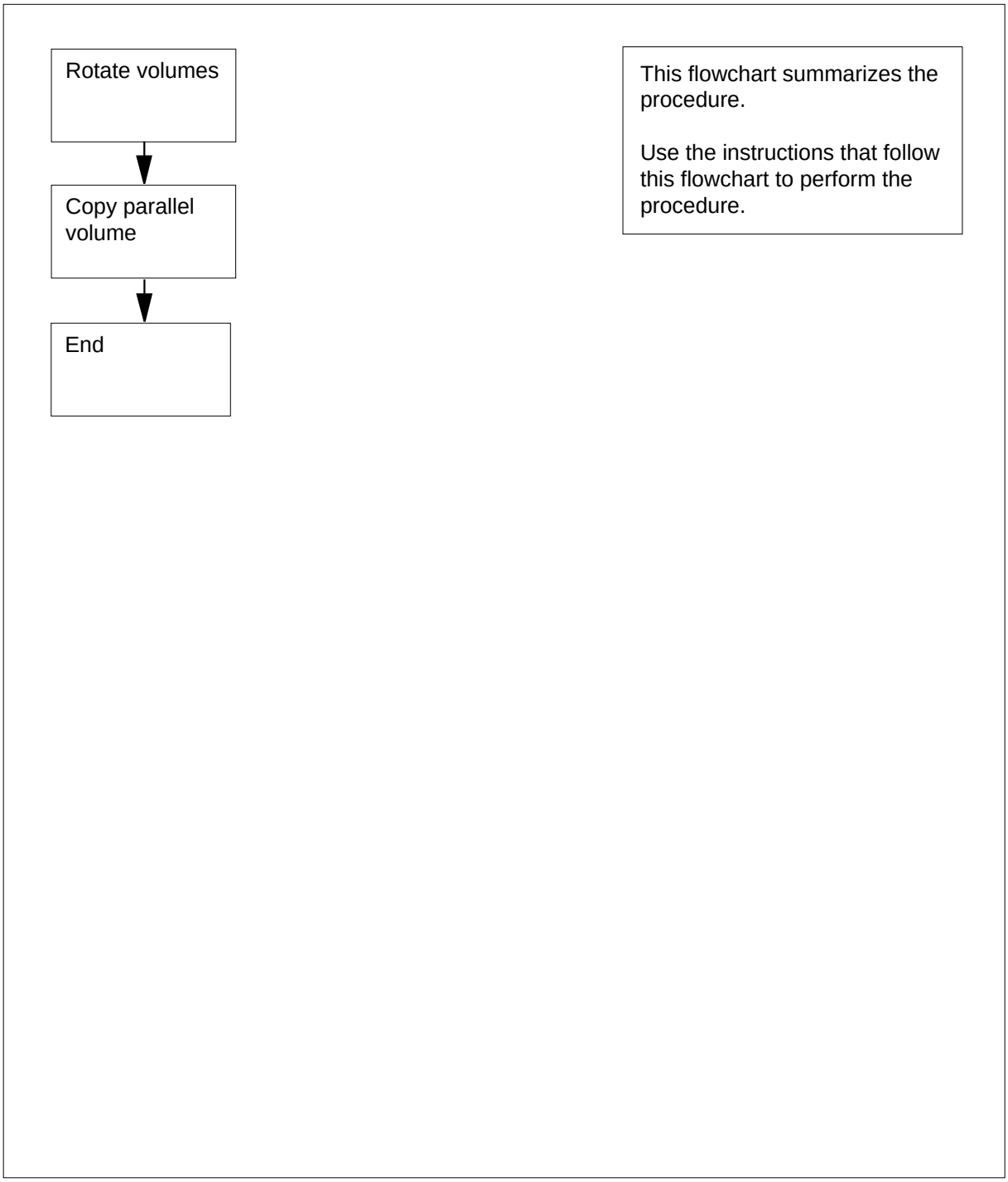
Use this procedure to recover a disk-type file that consists of detected errors. The detection of errors occurs during a data-link transmission to a data center. To recover the file, this procedure copies the file from disk to tape. You can transport the tape file to the data center.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Recovering data from a disk to tape (continued)

Summary of Recovering data from a disk to tape



Recovering data from a disk to tape (continued)

Recovering data from a disk to tape

At the MAP terminal

1

CAUTION
Possible loss or damage of AMA data
Use this procedure and follow it exactly. Not doing so will lose or corrupt automatic message accounting (AMA) data. The operating company uses AMA data to produce billings. Loss or damage of AMA data results in revenue loss for the operating company.

To access the DIRP level of the MAP display, type

>MAPCI;MTC;IOD;DIRP

and press the Enter key.

2 To access the DIRP logs, type

>LOGUTIL;OPEN DIRP

and press the Enter key.

3 To enable the printer, type

>RECORD START ONTO device

and press the Enter key.

where

device
is the printer type

4 Check the DIRP logs to determine the parallel data block numbers that the data center received. Determine the numbers that the data center received before and after the defective data-link transmission.

Example of a MAP response:

```
DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 16 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 22 SOS-FILE-ID= nnnn nnnn nnnn
TEXT1= NEXT PARALLEL FILE BLOCK NUMBER: 1            PARM1= 0
TEXT1= NEXT ACTIVE FILE BLOCK NUMBER: 4              PARM2= FFFF

DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 17 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 23 SOS-FILE-ID= nnnn nnnn nnnn
TEXT1= LAST PARALLEL FILE BLOCK NUMBER: 1            PARM1= 0
TEXT1= LAST ACTIVE FILE BLOCK NUMBER: 1              PARM2= FFFF
```

Recovering data from a disk to tape (continued)

5 Query the volumes that are in the subsystem. Determine the state of the parallel volume. To query the volumes and to determine the state of the parallel volume, type

>QUERY ssys VOLUMES

and press the Enter key.

where

ssys
is the affected subsystem

Example of a MAP display:

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0    1       2      0        6      No

REGULAR
VOL# VOLUMNAME  STATE     IOC  CARD  VOL  FSEG  ROOM  VLID  FILES

PARALLEL VOLUMES(S)
VOL# VOLNAME STATE  IOC  CARD  VOL  FSEG  ROOM  VLID  CURR
   0 D00AMA2 READY    0     0    0   N/A     1  2400  YES
```

If	Do
If the parallel volume that you want to recover data from	Do
is the current device	step 6
is not the current device	step 11

6 Determine if parallel volumes are available.

If	Do
If parallel volumes	Do
are available	step 8
are not available	step 7

7 Add a new disk volume.

Refer to *Setting up parallel recording on disk in the DIRP utility* in *Routine Maintenance Procedures*, and return to this point.

Recovering data from a disk to tape (continued)

At your current location

8

CAUTION
Loss of parallel data
Manual parallel rotations reduce the total amount of parallel data that the switch retains. Loss of parallel data can occur.

To rotate the subsystem, type

>ROTATE AMA PARALLEL

and press the Enter key.

Example of a MAP display:

```
 **WARNING–MANUAL PARALLEL ROTATIONS REDUCE THE TOTAL
  **AMOUNT OF PARALLEL DATA RETENTION ON THE SWITCH
SENDING REQUEST TO SUBSYSTEM
PLEASE CONFIRM (”YES” OR NO”):
```

9 To confirm the information, type

>YES

and press the Enter key.

Example of a MAP response:

```
REQUEST SENT TO SUBSYSTEM, CHECK DIRP LOG FOR DETAILS
```

10 Wait for a DIRP101 log to confirm the rotation.

If	Do
If the DIRP101 log	Do
confirms the rotation	step 11
does not confirm the rotation	step 14

11 Load an empty or expired tape on the magnetic tape drive.

Refer to *Magnetic Tape Reference Manual*, 297-1001-118, and return to this point.

12 To copy the subsystem file to the tape, type

>DIRPCOPY ssys file_name Tn start_no block_length

and press the Enter key.

where

ssys
is the affected subsystem

Recovering data from a disk to tape (end)

file_name
is the parallel file name

Tn
is the number of the tape drive

start_no
is the first sequence number that you will recover

(you obtained the sequence number in step 4)

block_length
is the first sequence number subtracted from the last sequence number (you obtained both sequence numbers in step 4).

Example input:

```
>DIRPCOPY  AMA DIRPPARALLEL_AMA T2 5400 100
```

Note: The time that the DIRPCOPY utility requires to copy the file depends on the length of the parallel file. The time also depends on the number of files that the DIRCOPY must copy.

13 Determine if the DIRPCOPY command was successful.

If	Do
If the DIRPCOPY command	Do
was successful	step 15
was not successful	step 14

14 For additional help, contact the next level of support.

15 The procedure is complete.

Recovering a dead DIRP utility

Application

Use this procedure to recover the main processes for the DIRP utility. The following are the main processes of the DIRP utility:

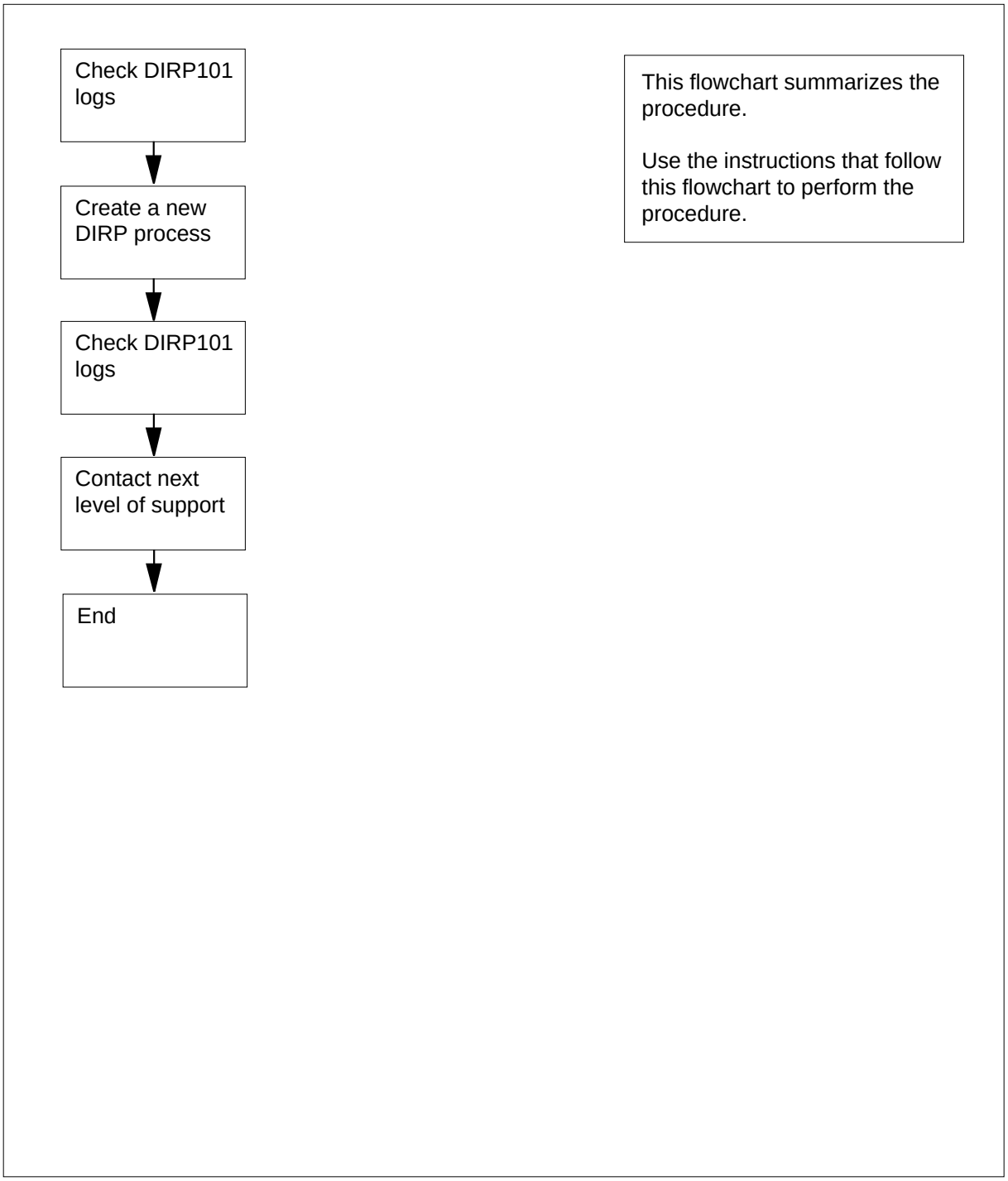
- DIRPGI
- DIRPDSON
- DIRPTSON

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Recovering a dead DIRP utility (continued)

Summary of Recovering a dead DIRP utility



Recovering a dead DIRP utility (continued)

Recovering a dead DIRP utility

CAUTION
Loss or damage of AMA data
Use this procedure and follow it exactly. Not doing so will lose or corrupt automatic message accounting (AMA) data. The operating company uses AMA data to produce billings. Loss or damage of AMA data results in revenue loss for the operating company.

At the MAP terminal

1 To silence an audible alarm, type

>MTC;SIL

and press the Enter key.

2 To access the DIRP level of the MAP display, type

>MAPCI;MTC;IOD;DIRP

and press the Enter key.

3 To enable the printer, type

>RECORD START ONTO device

and press the Enter key.

where

device
is the printer type

4 To access the DIRP logs, type

>LOGUTIL;OPEN DIRP

and press the Enter key.

Example of a MAP response:

```
DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 60 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 22 SOS-FILE-ID= nnnn nnnn nnnn
TEXT1= COULDN'T RECREATE DIRGI AFTER DEATH PARM1= operatingsys. RC
TEXT2=                                     PARM2= hhh

DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 61 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 22 SOS-FILE-ID= nnnn nnnn nnnn
TEXT1= DIRGI NOT RECREATED, DIED TWICE<30secs PARM1= operatingsys. RC
TEXT2=                                     PARM2= hhh
```

5 Check the DIRP logs to determine the DIRP process that died.

Recovering a dead DIRP utility (end)

6 To create the correct DIRP process (DIRPGI, DIRPDSON, or DIRPTSON), type

```
>REVIVE  ALL
```

and press the Enter key.

Note: The REVIVE command puts life back into the DIRP child process. The command does not correct the problem that caused the death of the DIRP child process.

7 Check the DIRP logs to determine if the REVIVE command created a new process. Go to step 8.

8 For additional help, contact the next level of support.

9 The procedure is complete.

Recovering enhanced link peripheral processors

Application

Use this procedure to recover enhanced link peripheral processors that are system busy (SysB). ELPPs are SysB when both link interface module (LIM) units lose A and B dc power feeds.

If the whole switch loses power, restore primary switching functions. Do not use this procedure until the primary switching functions are restored. To restore primary switching functions, refer to procedure *Recovering from a dead system in a SuperNode switch* in this document.

To recover ELPPs when both LIMs are system busy and other problems exist, refer to the following:

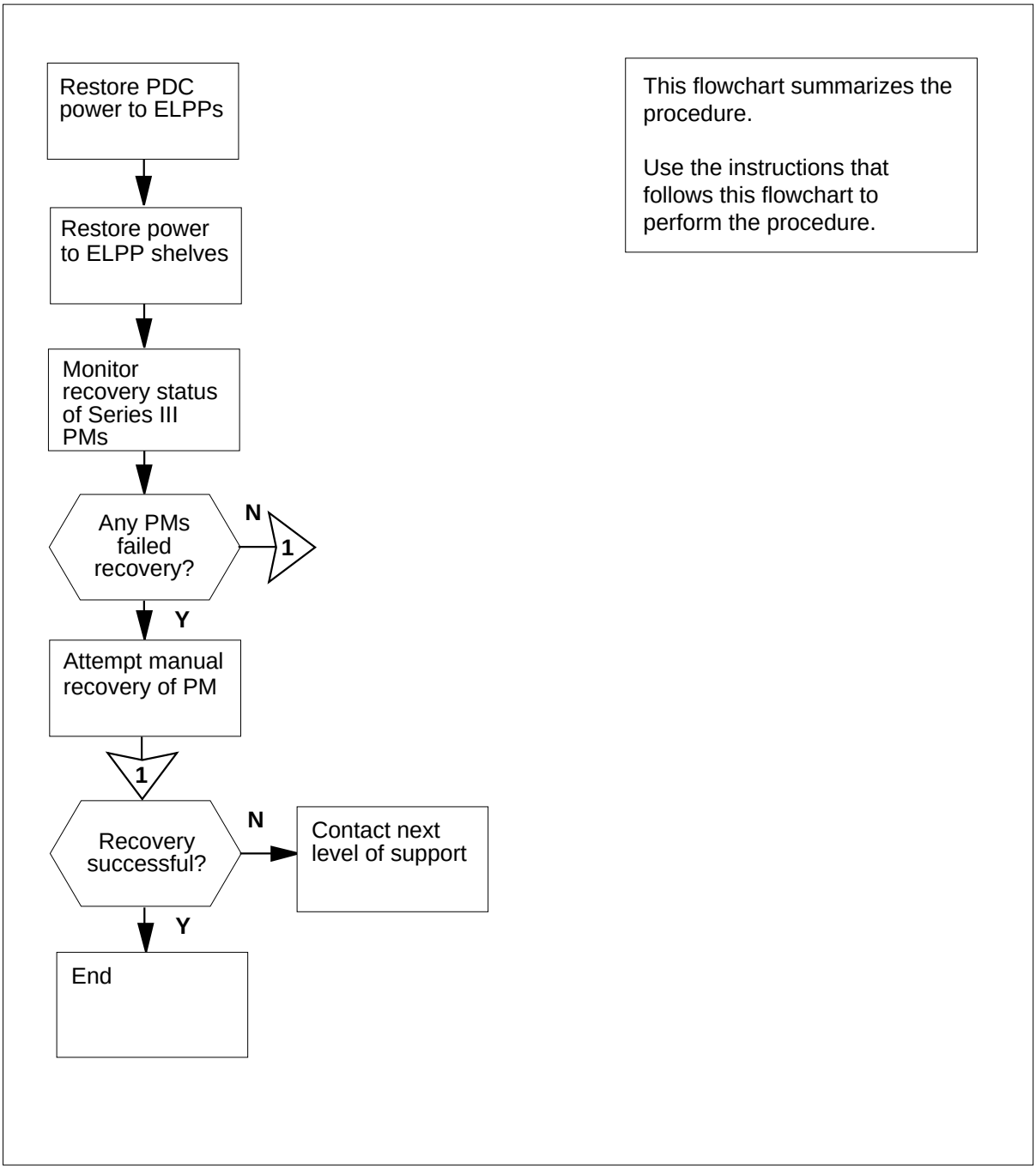
- *Clearing a PM LIM critical alarm*
- *Alarm and Performance Monitoring Procedures*

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 recovery task.

Recovering enhanced link peripheral processors (continued)

Summary of Recovering enhanced link peripheral processors



Recovering enhanced link peripheral processors (continued)

Recovering enhanced link peripheral processors

At the PDC

1

DANGER
Possible equipment damage or service interruption
To ensure that the ELPP is recovered as quickly as possible, contact Nortel ETAS or your next level of support before you begin this procedure.

Check the PDC fuses that supply the ELPPs involved in the recovery process.

If	Do
there are blown fuses	step 2
there are no blown fuses	step 3

2 Replace the blown fuses.

Note: If fuses blow repeatedly, contact your next level of support.

When PDC power is restored to the ELPPs, go to step 3 of this procedure.

3 Locate the ELPPs involved in the recovery process.

At the ELPP cabinet

4 Determine if the ELPP shelves have power.

Note: When the ELPP shelves have power, the Converter Off lights on all power converters (NT9X30, NT9X31, or NTDX16 cards) are not lit.

If the Converter Off lights in the ELPP	Do
are not lit	step 15
are lit	step 5

5

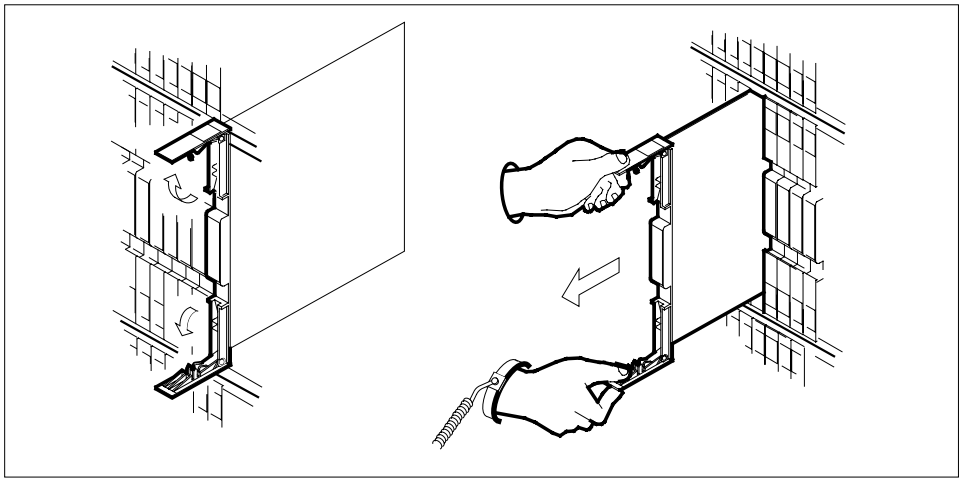
WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) while handling circuit cards. This protects the cards against static electricity damage.

Recovering enhanced link peripheral processors (continued)

Locate the NT9X74 cards in all link interface shelves (LIS) in the ELPP.

Note: For a LIS, locate the NT9X74 card on shelf 7F and 32F.

6 Unseat each NT9X74 card. To unseat a card, unlatch the locking levers and slowly pull the card toward you 25 mm (1 in.).



7 Locate the NT9X30 power converters in slot 4F and 36F on the link interface module (LIM) unit shelf and the NT9X31 power converter in slots 1F and 33F.

8 To turn on the LIM unit shelf power converters, toggle the switch of each NT9X30 and NT9X31 card.

9 Locate the NT9X30 or NTDX16 power converters for each LIS in the ELPP.

Note: For an LIS, locate the NT9X30 power converters in slots 4F and 36F. For an LIS, locate the NTDX16 power converters in slots 1F, 4F, 33F, and 36F for each LIS.

10 To turn on the LIS power converter, toggle the switch of each NT9X30 or NTDX16 card.

11 Determine if all the converters have power. To determine if the converter has power, check the Converter Off switch. When all of the Converter Off lights are off, the converter has power.

If all power converters	Do
powered up	step 13
did not power up	step 12

12 To restart the power for the frame, refer to the *Clearing an Ext FSP LPP cabinet major alarm* procedure from *Alarm and Performance Monitoring Procedures*.

When the procedure is complete, return to this point.

Go to step 7.

13 Reseat all NT9X74 cards as follows:

a Slowly slide the card back into the LIS.

Recovering enhanced link peripheral processors (continued)

b Push on the upper and lower edges of each faceplate to reseat the card completely.

c Close the locking levers on the card.

14 Repeat steps 3 through 13 for each ELPP in your office.

When all of the ELPPs are restored to power, continue this procedure at step 15.

At the MAP

15 To access the SRSTATUS level of the MAP display, type

>MAPCI;MTC;SRSTATUS

and press Enter

Example of a MAP display:

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_       Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS     0    0      2       0   IOD   5     5      30     2
 4        NET    0    0      6       0   Other 21    3      13     3
 5        SER1   0    1      6       0
 6        SER2   1    1      60      1
 7        SER3   11   8      30      1
 8
 9        SRSTATUS:
```

16 From the MAP display, determine the state of the recovered Series III PMs

Note: The series III PM recovery status appears at the right of the word SER3 of the MAP display. The recovery status is either pending, in progress, complete, or failed.

If the number of Series III PMs, that failed recovery	Do
is zero	step 32
is other than listed here	step 17

17 To access the PM level of the MAP display, type

>PM

and press the Enter key.

18 To display a list of all system busy PMs, type

>DISP STATE SYSB

and press the Enter key.

19 Determine which of the Series III PM types are system busy.

If	Do
LIMs are SysB	step 21

Recovering enhanced link peripheral processors (continued)

If	Do
HLIUs are SysB	step 1
HSLRs are SysB	step 7
any other type of Series III PM types are SysB	step 20
Series III PMs are not SysB	step 32

20 Refer to procedure *Recovering link peripheral processors* in this document.

21 Select a system busy LIM to work on.

22 To post the system busy LIM, 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  SysB        OOS     OOS_Taps
                  Links  LIS1  LIS2  LIS3
Unit0: SysB        6      8       8     8
Unit1: SysB        6      8       8     8
```

23 Determine if the LIM unit is system busy, resource unavailable (SysB RU).

Note: When a LIM unit is system busy, the message SysB (RU) appears in the MAP response. This message appears to the right side of the LIM unit number.

If	Do
either LIM unit is SysB (RU)	step 24
neither LIM unit is SysB (RU)	step 31

24 To clear the fault, refer to the *Clearing a PM LIM critical alarm* procedure in *Alarm and Performance Monitoring Procedures*.

When you have completed the procedure, return to this point.

25 To access the LIS level of the MAP display, type

>LIS_no

and press the Enter key.

where

lis_no
is the number of the LIS (1, 2, or 3)

Recovering enhanced link peripheral processors (continued)

Note: For ELPPs F-bus 0 and F-bus 1 exist for each LIS level (1, 2, and 3).

26 Determine if the F-buses are in-service.

If	Do
all F-buses are InSv	step 18
a minimum of one F-bus is SysB	step 27

27 To manually busy the system busy F-bus, type

>BSY FBUS fbus_no

and press the Enter key.

where

fbus_no
is the number of the F-bus you wish to manually busy

28 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 that you wish to return to service

If the RTS command	Do
passed	step 29
failed	step 31

29 Determine if another F-bus is system busy.

If	Do
all other F-buses are InSv	step 30
another F-bus is SysB	step 27

30 To access the next LIS level, type

>NEXT

and press the Enter key.

If	Do
you have already accessed this LIS level	step 18

Recovering enhanced link peripheral processors (end)

If	Do
you have not already accessed this LIS level	step 26

31 For additional help, contact the personnel responsible for the next level of support.

32 The procedure is complete.

Recovering a stuck HLIU or HSLR

Application

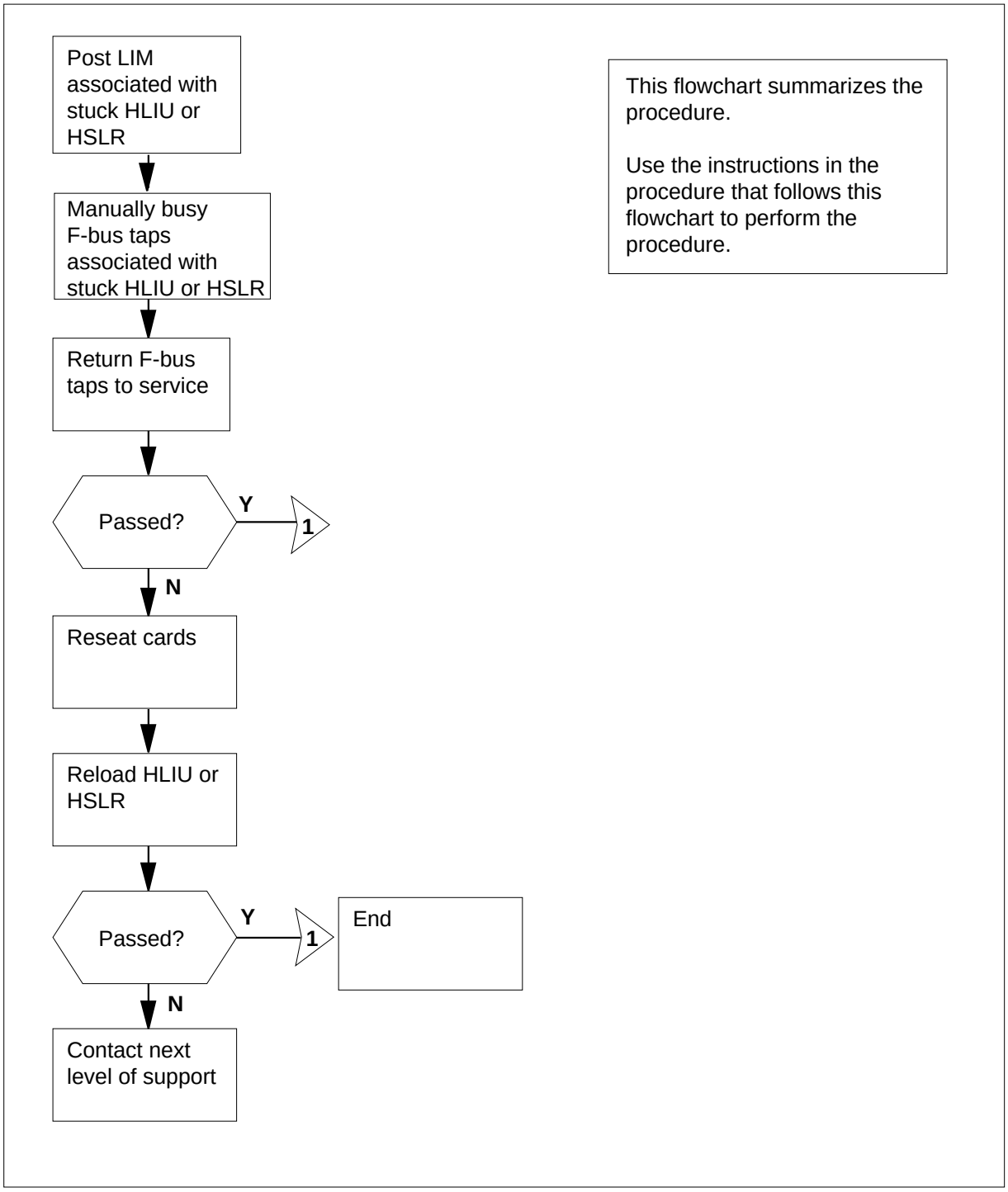
Use this procedure to recover a stuck high-speed link interface unit (HLIU) or a high-speed link router (HSLR). HLIUs and HSLRs are stuck when both F-bus taps of the individual HLIU or HSLR are not accessible (NA).

Action

This procedure contains a summary flowchart and a list of specific steps. Use the flowchart as an overview of the procedure. Follow the specific steps to perform the procedure.

Recovering a stuck HLIU or HSLR (continued)

Summary of Recovering a stuck HLIU or HSLR



Recovering a stuck HLIU or HSLR (continued)

Recovering a stuck HLIU or HSLR

At the MAP terminal

1

DANGER
Contact your next level of support
Do not attempt this procedure before contacting your next level of support.

Access the PM level of the MAP display by typing

>MAPCI;MTC;PM

and pressing the Enter key.

2 Post the system-busy HLIU or HSLR by typing

>POST HLIU SYSB

and pressing the Enter key.

or

>POST HSLR SYSB

and pressing the Enter key.

If the state of the HLIU or HSLR is	Do
SysB (NA)	step 5
SysB	step 3

3 Display the next system-busy HLIU or HSLR by typing

>NEXT

and pressing the Enter key.

4 Repeat step 3 until you find the system-busy (NA) HLIU or HSLR.

5 Determine the LIM associated with the stuck HLIU or HSLR by typing

>QUERYPM

and pressing the Enter key.

```
QueryPM
PM type:  HLIU    PM NO.: 0    Status: SysB
LIM: 0  Shelf: 1  Slot: 8      LIU FTA  4240 1000
Default Load:  HCA11AV
Running Load:  HCA11AV
Potential service affecting conditions:
Msg Channel #1  NA
TAP #0 OOS/NA
```

Recovering a stuck HLIU or HSLR (continued)

```
TAP #1 OOS/NA
LMS States  :  InSv     InSv
Auditing    :  No       No
Msg Channels:  Acc      No
TAP 0       :  I (NA)   S (NA)
Reserved HLIU forms part of CCS7 Linkset :HSL172001000 SLC:0
LIU is not allocated
```

6 Post the LIM associated with the stuck HLIU or HSLR by typing

`>POST LIM lim_no or`

and pressing the Enter key.

where

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

7 Post the LIS associated with the stuck HLIU or HSLR by typing

`>POST LIS lis_no`

and pressing the Enter key.

where

lis_no
is the number of the shelf (1 to 3)

8 Determine which F-bus taps are associated with the stuck HLIU or HSLR by typing

`>TRNSL fbus_no`

and pressing the Enter key.

where

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

Example of a MAP response for HLIU:

```
LIM 8 LIS 2 FBus 0 Tap 0 is unequipped.
LIM 8 LIS 2 FBus 0 Tap 1 is unequiped
LIM 8 LIS 2 FBus 0 Tap 2 is on HLIU 1
LIM 8 LIS 2 FBus 0 Tap 3 is on HSLR 1
LIM 8 LIS 2 FBus 0 Tap 4 is unequipped
```

9 Manually busy the F-bus taps associated with the stuck HLIU or HSLR by typing

`>BSY FBUS fbus_no tap_no`

and pressing 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 11)

Recovering a stuck HLIU or HSLR (continued)

Perform this step for both F-bus taps associated with the stuck HLIU or HSLR.

10 Return the F-bus taps associated with the stuck HLIU or HSLR to service by typing

>RTS FBUS fbus_no tap_no

and pressing 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 11)

Perform this step for both F-bus taps associated with the stuck HLIU or HSLR.

Example of a MAP response:

```
LIM lim_no LIS lis_no FBus fbus_no Tap tap_no Return
to Service initiated.
```

If the RTS command	Do
passed	step 28
failed	step 11

11 Access the PM level of the MAP display by typing

>PM

and pressing the Enter key.

12 Post the stuck HLIU or HSLR by typing

>POST HLIU liu_no

and pressing the Enter key.

or

>POST HSLR liu_no

and pressing the Enter key.

where

liu_no
is the number of the stuck HLIU or HSLR (0 to 511)

13 Manually busy the HLIU or HSLR by typing

>BSY

and pressing the Enter key.

14 Confirm the command by typing

>YES

and pressing the Enter key.

15 Prepare to unseat and reseat the cards that belong to the stuck HLIU or HSLR.

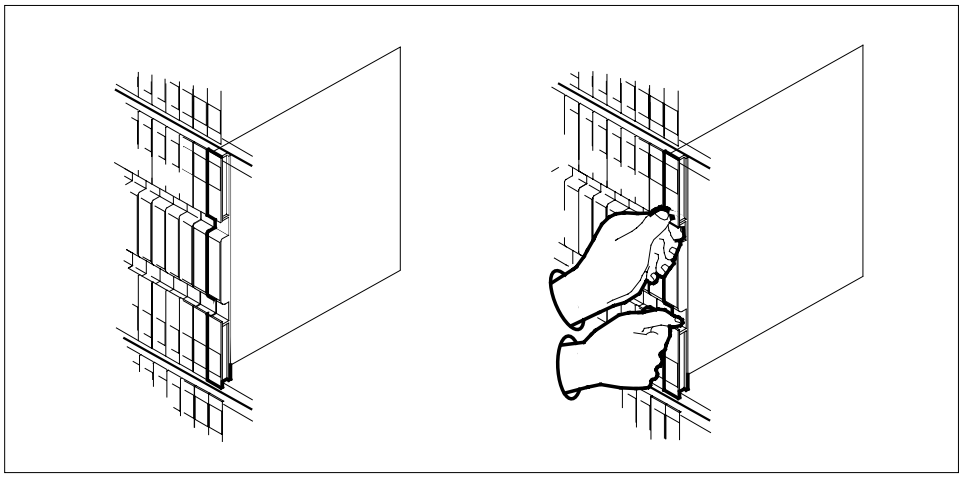
Recovering a stuck HLIU or HSLR (continued)

At the ELPP

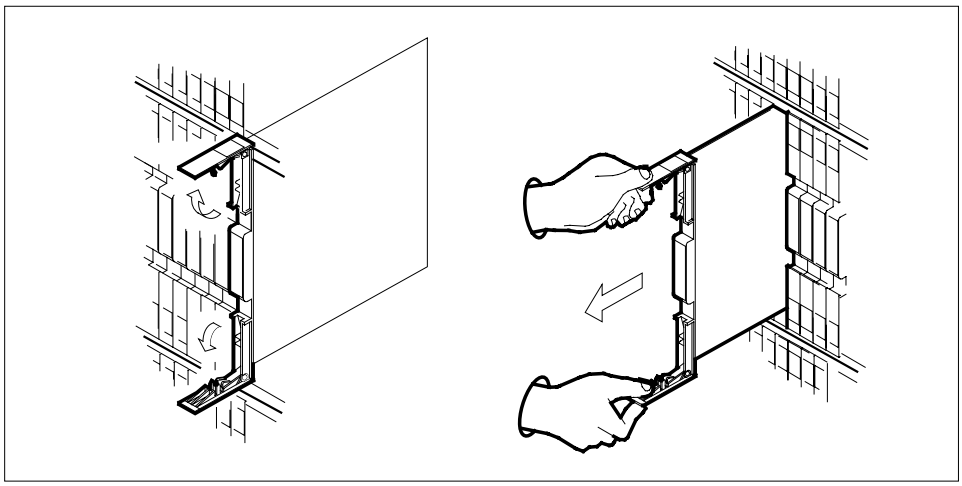
16

WARNING
Static electricity damage
Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP) while handling cards. This protects the cards against damage caused by static electricity.

Locate the NTEX22 card that belongs to the stuck HLIU or HSLR.



17 Carefully pull the card 25 mm (1 in.) toward you.



18 Leave the NTEX22 sitting in its slot on the link interface shelf (LIS).

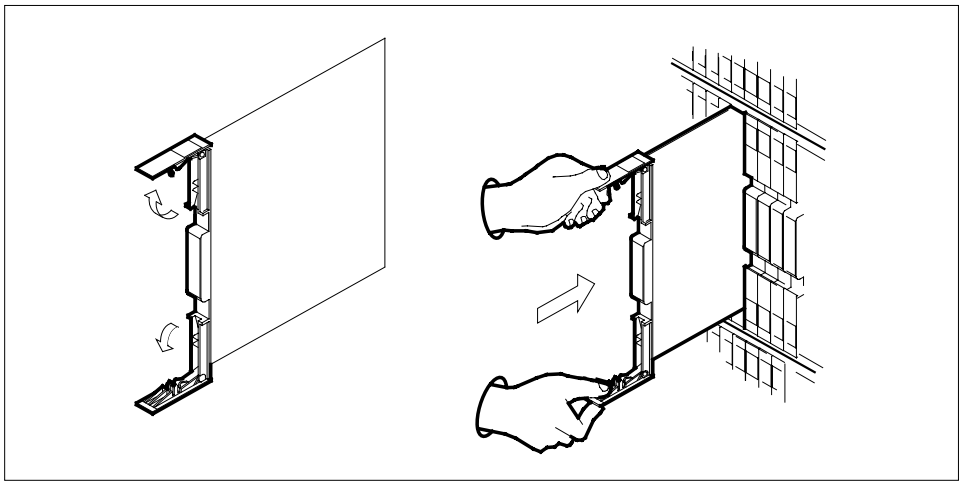
Recovering a stuck HLIU or HSLR (continued)

19 Verify the type of PM.

If the PM is an	Do
HLIU	step 20
HSLR	step 21

20 Repeat steps 16, 17, and 18 for the NTEX76 card that belongs to the stuck HLIU.

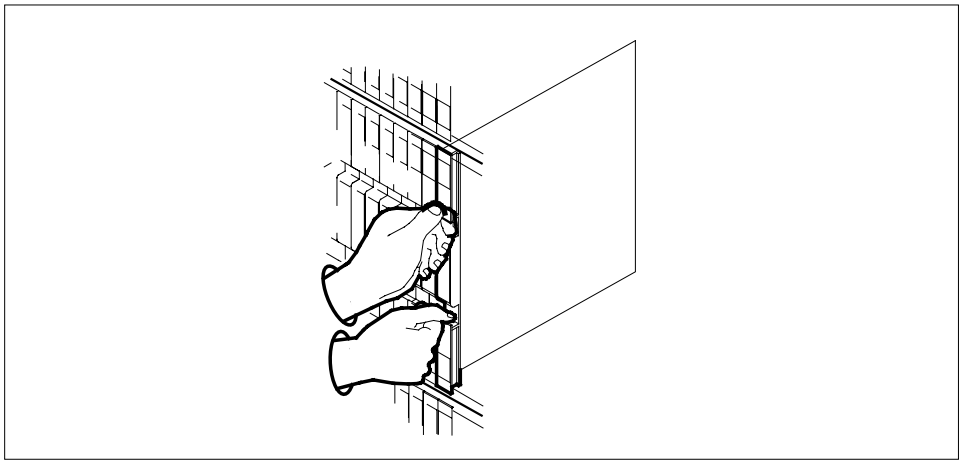
21 Carefully slide the NTEX22 card back into the LIS.



22 Seat and lock the card, as follows:

a Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is in the shelf.

b Close the locking levers.



Recovering a stuck HLIU or HSLR (end)

23 Verify the type of PM.

If the PM is an	Do
HLIU	step 24
HSLR	step 25

24 Repeat steps 21 and 22 for the NTEX76 card that belongs to the stuck HLIU.

At the MAP terminal

25 Reload the HLIU or HSLR by typing

>LOADPM

and pressing the Enter key.

If the LOADPM command	Do
passed	step 26
failed	step 27

26 Return the HLIU or HSLR to service by typing

>RTS

and pressing the Enter key.

If the RTS command	Do
passed	step 28
failed	step 27

27 For further assistance, contact the personnel responsible for the next level of support.

28 You have completed this procedure.

Recovering a stuck HLIU under a composite clock failure

Application

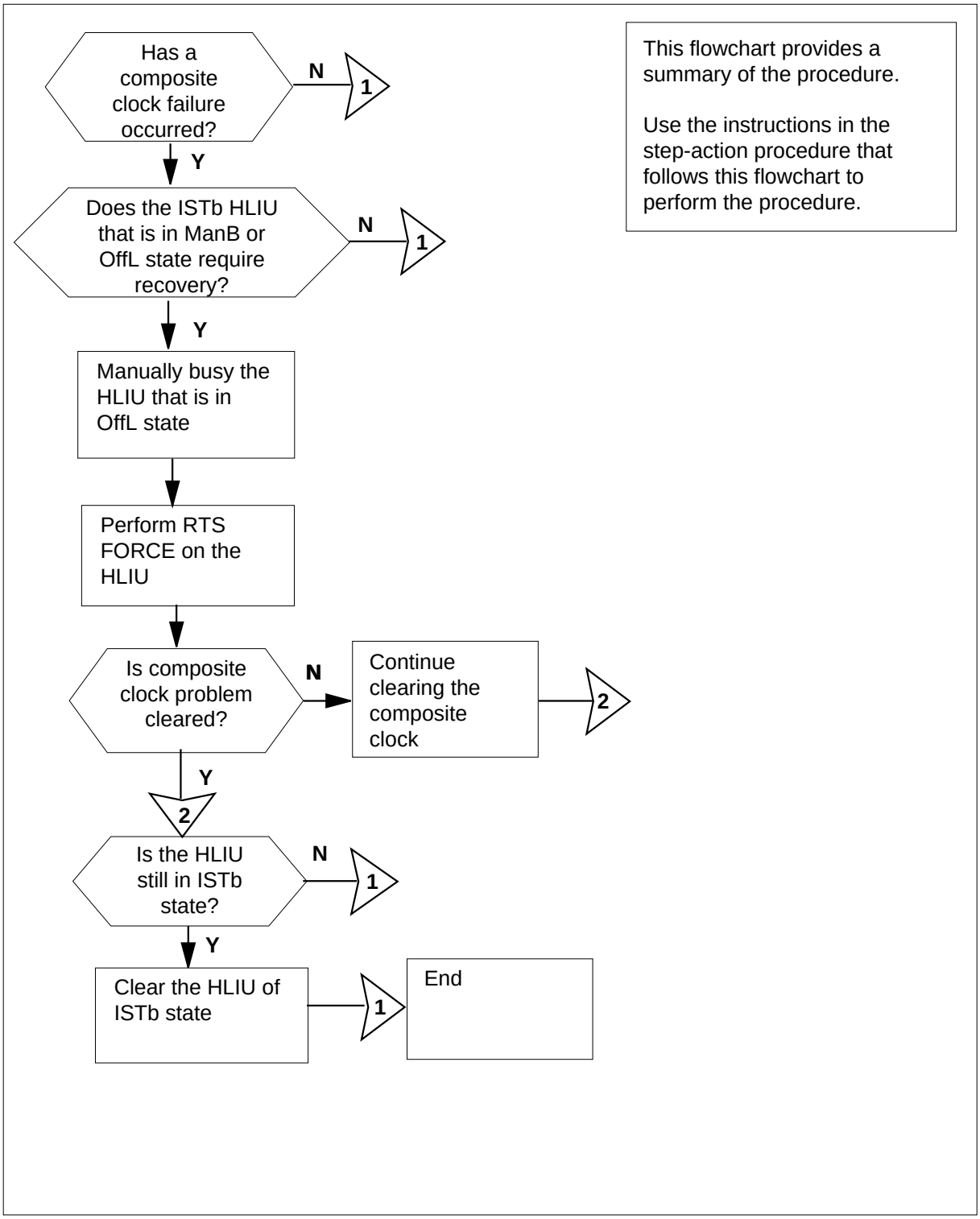
Use this procedure to return a high-speed link interface unit (HLIU) to service when the composite clock is down due to a failure.

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery procedure.

Recovering a stuck HLIU under a composite clock failure (continued)

Summary of Recovering a stuck HLIU under a composite clock failure



Recovering a stuck HLIU under a composite clock failure (continued)

Recovering a stuck HLIU under a composite clock failure

At the MAP terminal

1 Composite clock problem is associated with problems in the link interface module (LIM). To determine if the LIM has a problem, type

>MAPCI;MTC

and press the Enter key.

The following is an example of the MAP display:

```
CM   MS   IOD   Net   PM    CCS    Trks  Ext.   APPL .
       .  pool01  .   1LIMF    .      .     .       .
                       M
                    SysB    ManB   OffL   CBsy  ISTb  INSv
          PM          0       0      0      0     3    24
          HLIU        0       0      0      0     2     2
     HLIU       0 ISTb    Rsvd
```

Note: Value 1LIMF indicates an LIM related problem. Check log PM181 to determine if the problem is related to the composite clock.

2 Access the LOGUTIL level of the MAP display to check log PM181. At the MAP terminal, type

>MAPCI;MTC;LOGUTIL

and press the Enter key.

3 Log PM181 indicates composite clock problems. To check if log PM181 was generated, type

>OPEN PM181

and press the Enter key.

The following is an example of the MAP display:

```
CM         PM181  FEB24    18:55:22  8800   INFO
LIM  2Fbus 1
Non-service affecting faults.
CODE: 00030000020000000000000000000
Fault found against LMS
1. Composite clock failure detected LIS 3SHELFPOS        0).

POSSIBLE CAUSE: FBUS, ST Card, composite
(external)clock cables, composite (external)clock.

POSSIBLE ACTION: Tst the FBUS (insv), BSY/TST/RTS
the FBUS, inspect composite (external) clock cables,then
composite clock generator (TSG), and monitor occurrences.
Site Flr RPos Bay_id Shf  Description  Slot  EqPEC
Host  03  C02 LIM 501 00  FBUS     32 9X79BA BACK
```

Recovering a stuck HLIU under a composite clock failure (continued)

Note: A composite clock failure causes HLIUs to go into in-service trouble (ISTb) state until the composite clock is recovered.

4 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

5 To post HLIUs in ISTb state, type

>POST HLIU ISTb

and press the Enter key.

6 To determine the condition of HLIUs in ISTb state, type

>QUERYPM

and press the Enter key.

The following is an example of the display for command QUERYPM:

```
querypm
PM type:  HLIU    PM NO.: 0    Status: ISTb
LIM: 1 Shelf: 1  Slot: 8      LIU FTA  4255 1000
Default Load:  HCA78DX
Running Load:  HCA78DX
ISTB conditions:
     Failed  00S Test
     TAP #0 00S/NA


LMS Unit    :  0           1
LMS states  : ISTb        InSv
Auditing    :  Yes         Yes
Msg Channels:  Acc       No
TAP 0       :  I
Reserved HLIU forms  part of CCS7 Linkset :HSL100000 SLC:0
LIU is not allocated
```

Note: Value 00S/NA indicates possible composite clock problem. A failed 00S Test indicates a failed attempt to perform an RTS command on the HLIU.

7 Determine if the HLIU that is in ISTb state due to the composite clock failure is also in ManB (manual busy) or OffL (offline) state, and if it requires recovery.

If HLIU	Do
is in OffL state and requires recovery,	step 8
is in ManB state, and requires recovery,	step 9
does not require recovery,	step 15

Recovering a stuck HLIU under a composite clock failure (continued)

Note: When the composite clock is down, the HLIU goes into ISTb state. The HLIU in ISTb state returns to in-service state when the composite clock is recovered. Do not attempt to recover the HLIU with the RTS command. Use step 7, 8 and 9 to return a stuck HLIU to service,

8 Manually busy the HLIU that is in OffL state by typing

```
>BUSY hliu_no
```

where

hliu_no
is the number of the HLIU

9 To return an HLIU in ManB state to service, type

```
>RTS FORCE
```

and press the Enter key.

Note: If you have previously attempted an RTS before performing the RTS FORCE command on the HLIU, the HLIU will remain in the ISTb state even after the composite clock is recovered. Refer to Step 11 for information on how to clear an HLIU of ISTb state after the composite clock is recovered.

The following is a description of what happens after you apply the RTS FORCE command to an HLIU:

If the composite clock	Dothen
is the preferred clock for the HLIU,	the HLIU returns to service in an ISTb state. When the composite clock is restored, the system clears the ISTb state from the HLIU and returns it to the InSv (In-service) state. See note in Step 9 for a description of an exception.
is not the preferred clock for the HLIU,	the HLIU returns to the ISTb state, and then the InSv state.

10 To recover the composite clock, perform the ``Recovering a composite clock'' procedure as described in DMS-100 Family STP Recovery Procedures, 297-8101-545.

11 For HLIUs that remain in ISTb state after the composite clock is recovered, determine the condition of HLIUs by typing

```
>QUERYFLT
```

and pressing the Enter key.

Note: A failed 00S test indicates that an RTS had been attempted while the composite clock was down. If there is no failed 00S test, follow the "Recovering a stuck HLIU" procedure as described in DMS-100 Family STP Recovery Procedures, 297-8101-545 to clear the HLIU of ISTb state.

Recovering a stuck HLIU under a composite clock failure (end)

12 To clear the HLIU of ISTb state after the composite clock is recovered, perform step 13 and step 14 during a scheduled maintenance interval.

13 To start clearing the HLIU of ISTb state, manually busy the HLIU in ISTb state by typing

`>BUSY hliu_no`

and pressing the Enter key.

where

hliu_no
is the number of the HLIU

14 To return the ManB HLIU to service, type

`>RTS hliu_no`

and press the Enter key.

where

hliu_no
is the number of the HLIU

15 You have completed the procedure.

Recovering a stuck LIU7

Application

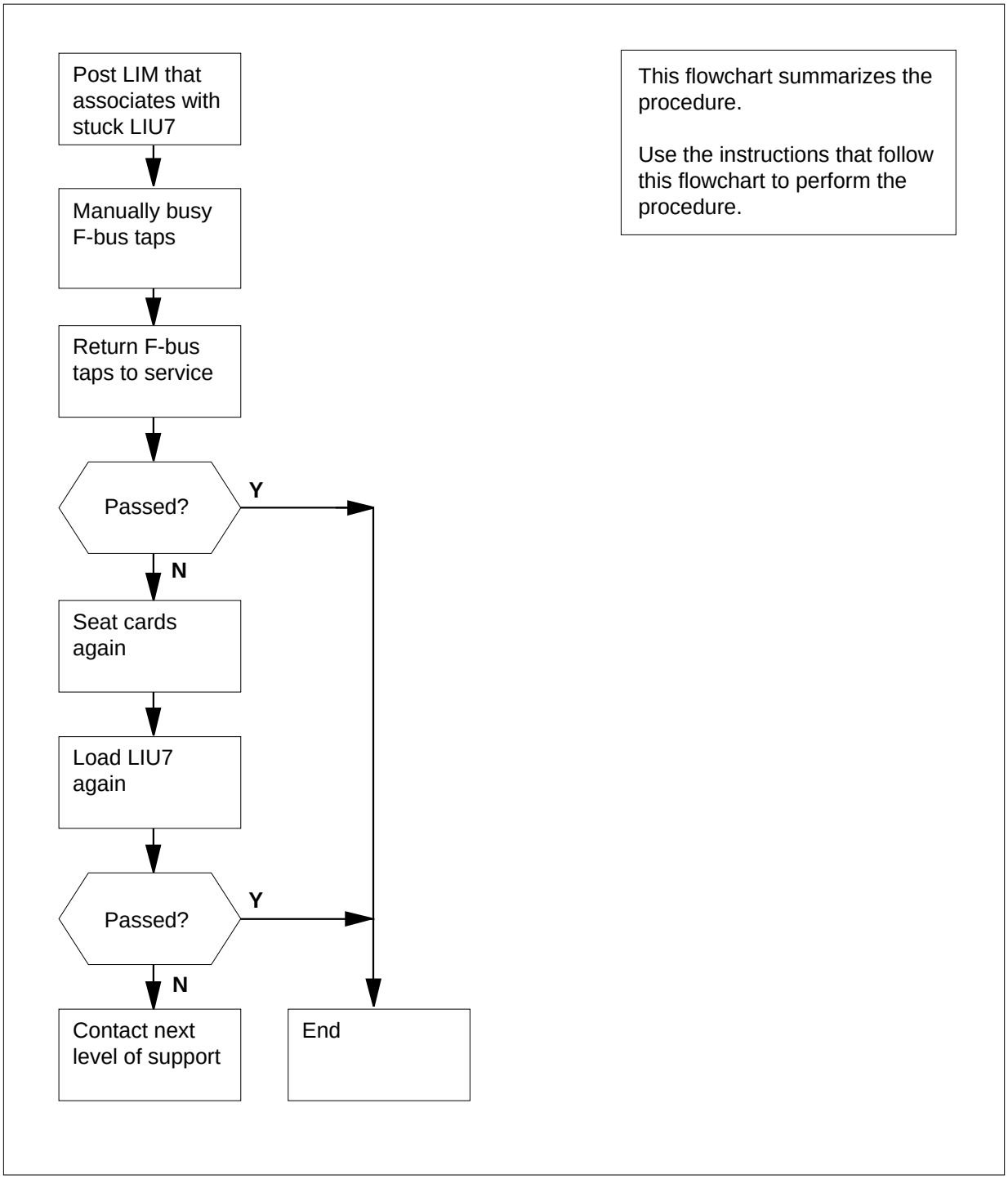
Use this procedure to recover a stuck CCS7 link interface unit (LIU7). An LIU7 is stuck when both F-bus taps of the LIU7 are not accessible (NA). This procedure applies only to three-slot LIU7s.

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Recovering a stuck LIU7 (continued)

Summary of Recovering a stuck LIU7



Recovering a stuck LIU7 (continued)

Recovering a stuck LIU7

At the MAP terminal

1

WARNING
Contact the next level of support
Do not attempt this procedure before you contact the next level of support.

To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

2 To post the system-busy LIU7 that is not accessible, type

>POST LIU7 SYSB

and press the Enter key.

If the LIU7 that appears	Do
is SysB (NA)	step 9
is SysB	step 3

3 To display the next system busy LIU7, type

>NEXT

and press the Enter key.

4 Repeat step 3 until you find the system-busy LIU7 that is not accessible.

5 Determine the location of the LIU7.

If the LIU7	Do
is in an SCC shelf in a SuperNode SE	step 6
is in an LPP	step 9

6 To access the MS CARD level of the MAP display, type

>MAPCI;MTC;MS:CARD 12

and press the Enter key.

Note 1: In the example, card 12 is the NT9X73 T-bus to F-bus interface card.

Note 2: In the example, the state of the tap appears under the F-bus Tap: header.

Example of a MAP response:

Recovering a stuck LIU7 (continued)

```
                          1 1 1 1
Card  1 2 3 4 5 6 7 8 9 0 1 2 3
Chain           |
MS 0  . . . . . . – . . . . . .
MS 1  . . . . . . – . . . . . .

Card 12          FBus Tap: 0      11 12   16   20
MS 0  .            .       .      .  S... .... ....
MS 1  .            .       .      .  .... .... ....
```

7 To manually busy the tap, type

>BSY ms_num TAP tap_num

and press the Enter key.

where

ms_num
is the number of the message switch (0 or 1)

tap_num
is the number of the tap (0 to 23)

8 To return the tap to service, type

>RTS ms_num TAP tap_num

and press the Enter key.

where

ms_num
is the number of the message switch (0 or 1)

tap_num
is the number of the tap (0 to 23)

If the RTS command	Do
passed	step 30
failed	step 15

9 To determine the LIM that associates with the LIU7, type

>QUERYPM

and press the Enter key.

10 To post the LIM that associates with the stuck LIU7, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 or 1)

Recovering a stuck LIU7 (continued)

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

>FBUS

and press the Enter key.

Example of a MAP response:

```
                                11111111112222
                     01234567890123456789012345
FBus 0 ISTb (NA) ...M....SSSS.....................
FBus 1 InSv      ..........S.....................
```

Note: In the example, S indicates that F-bus taps are system busy.

12 To determine the F-bus taps that associate with the stuck LIU7, type

>TRNSL fbus_no

and press the Enter key.

where

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

Example of a MAP response:

```
LIM lim_no FBus fbus_no Tap tap_no is unequipped.
LIM lim_no FBus fbus_no Tap tap_no is on LIU7 liu_no.
LIM lim_no FBus fbus_no Tap tap_no is on LIU7 liu_no.
```

13 To manually busy the F-bus taps that associate with the stuck LIU7, 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)

14 To return the F-bus taps that associate with the stuck LIU7 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)

Example of a MAP response:

Recovering a stuck LIU7 (continued)

```
LIM lim_no FBus fbus_no Tap tap_no Return to Service
initiated.
```

If the RTS command	Do
passed	step 30
failed	step 15

15 To access the PM level of the MAP display, type

>PM

and press the Enter key.

16 To post the stuck LIU7, type

>POST LIU7 liu_no

and press the Enter key.

where

liu_no
is the number of the stuck LIU7 (0 to 511)

17 To manually busy the LIU7, type

>BSY

and press the Enter key.

If the response	Do
is Busying LIU7 liu_no will take a CCS7 resource out of servicePlease confirm ("YES","Y","NO", or "N"):	step 18
is other than listed here, including additional messages with above response	step 29

18 To confirm the busy command, type

>YES

and press the Enter key.

If the BSY command	Do
passed	step 19
failed	step 29

19 Prepare to release and replace the cards that belong to the stuck LIU7.

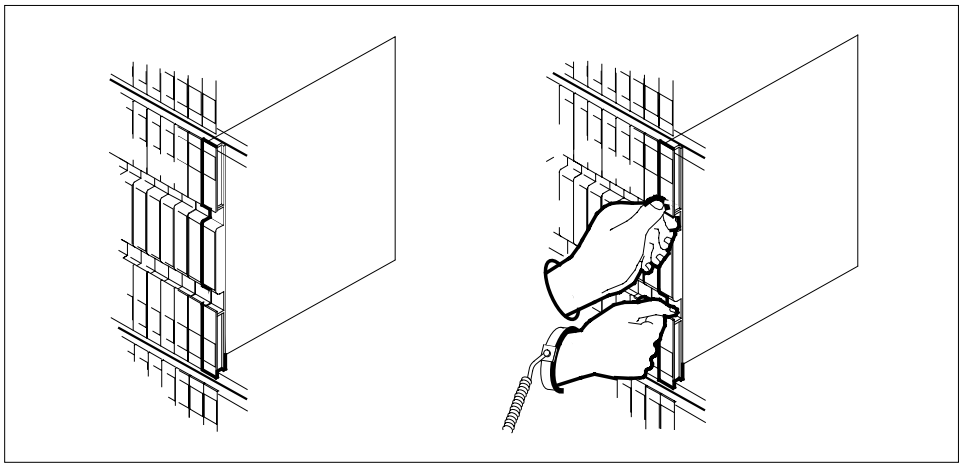
Recovering a stuck LIU7 (continued)

At the LPP

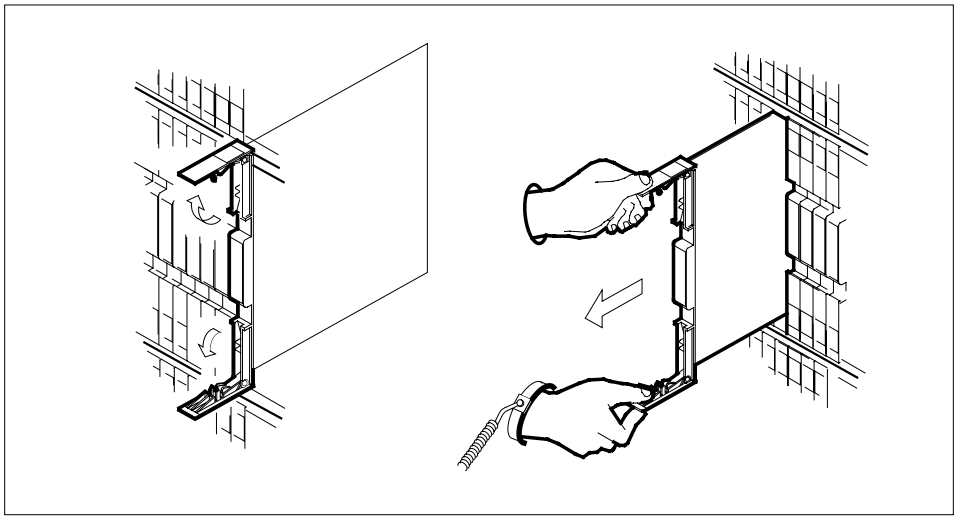
20

WARNING
Static electricity damage
Wear a wrist strap that connects to 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 NT9X75 card that belongs to the stuck LIU7.



21 Carefully pull the card toward you 25 mm (1 in.).

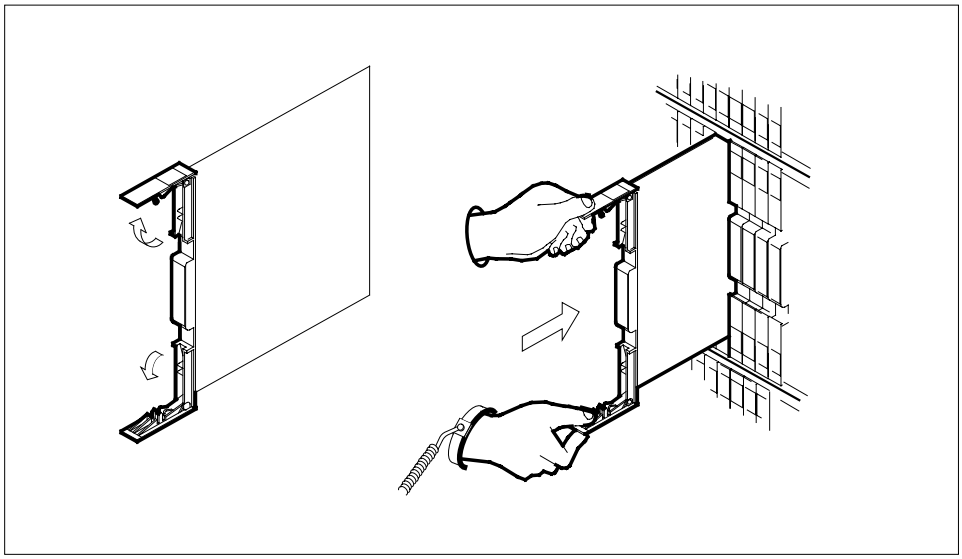


22 Leave the NT9X75 in the slot on the link interface shelf (LIS).

Recovering a stuck LIU7 (continued)

23 Repeat steps 20, 21, and 22 for the NT9X76 and the NT9X13 cards that belong to the stuck LIU7.

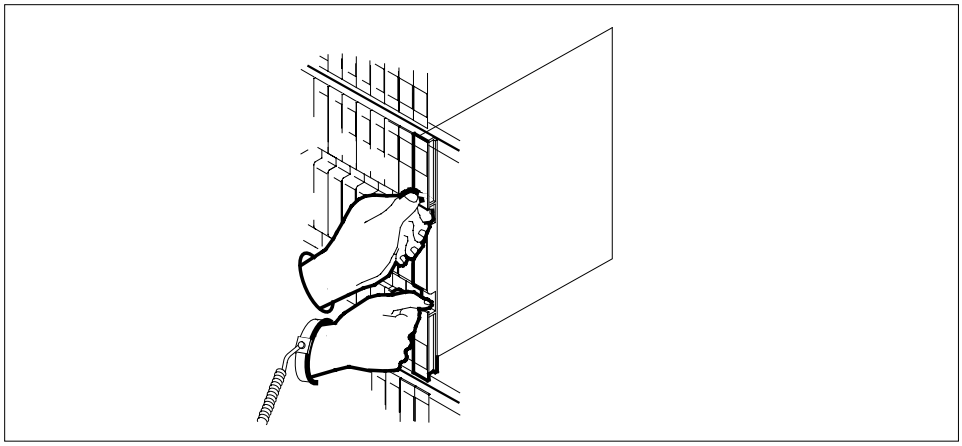
24 Carefully slide the NT9X13 card back into the LIS.



25 Replace 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.



26 Repeat steps 24 and 25 for the NT9X76 and NT9X75 card that belongs to the stuck LIU7.

Recovering a stuck LIU7 (end)

At the MAP terminal

27 To load the LIU7 again, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 28
failed	step 29

28 To return the LIU7 to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 30
failed	step 29

29 For additional help, contact the next level of support.

30 The procedure is complete.

Recovering volumes marked INERROR

Application

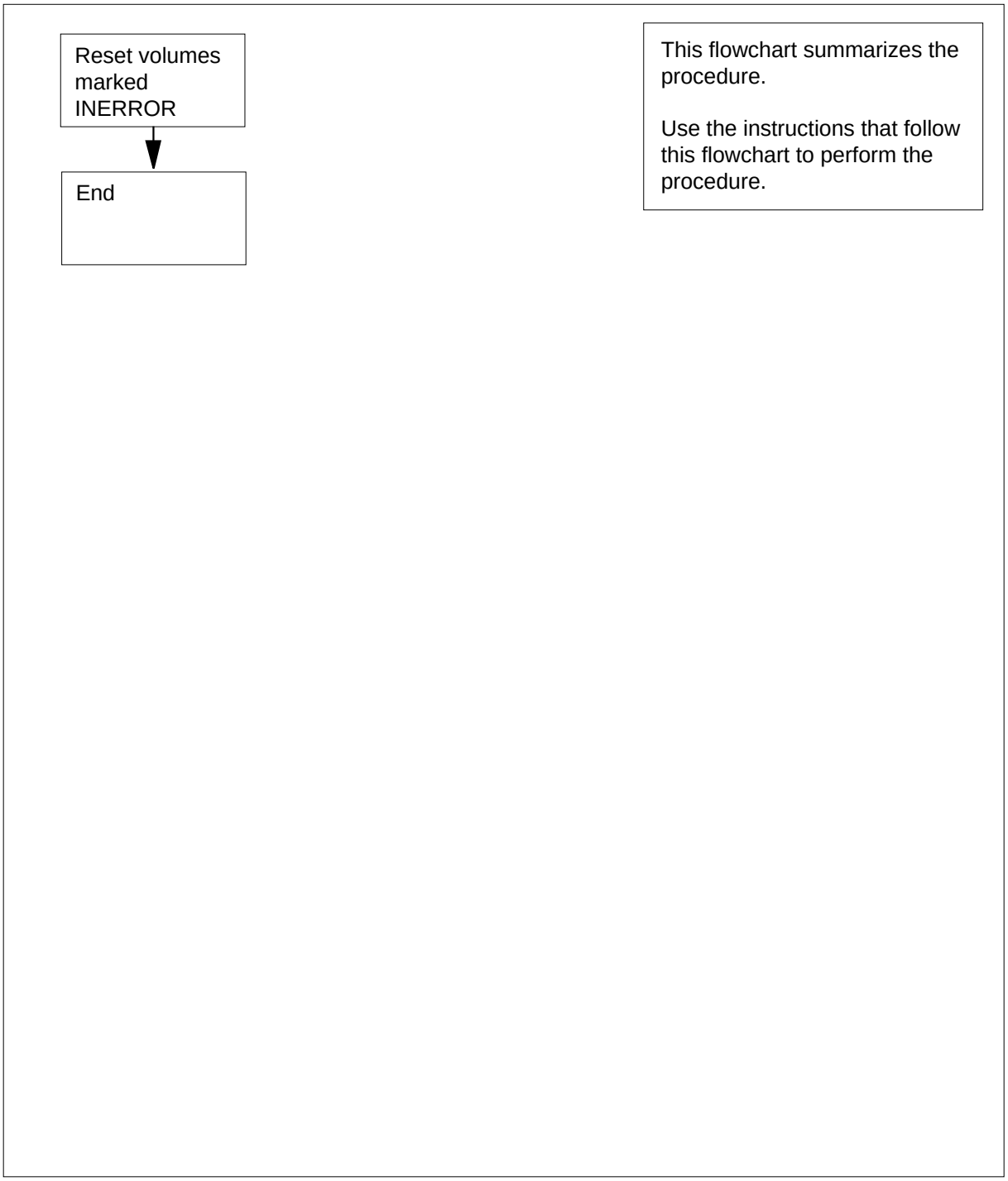
Use this procedure to recover volumes marked INERROR. A restart recovery of the DIRP utility requires a verification of all volumes and files. This verification determines if the volume recovery was successful.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Recovering volumes marked INERROR (continued)

Summary of Recovering volumes marked INERROR



Recovering volumes marked INERROR (continued)

Recovering volumes marked INERROR

CAUTION
Possible loss or damage of AMA data
Use this procedure and follow it exactly. Not doing so will lose or corrupt automatic message accounting (AMA) data. The operating company uses AMA data to produce billings. Loss or damage of AMA data results in revenue loss for the operating company.

At the MAP terminal

1 To access the DIRP level of the MAP, type

```
>MAPCI;MTC;IOD;DIRP
```

and press the Enter key.

2 To access the DIRP logs, type

```
>LOGUTIL;OPEN  DIRP
```

and press the Enter key.

3 To enable the printer, type

```
>RECORD  START  ONTO  device
```

and press the Enter key.

where

device
is the printer type

4 To query the volumes that are now mounted in the subsystem, type

```
>QUERY  ssys  VOLUMES
```

and press the Enter key.

Example of a MAP:

ssys
is the affected subsystem

Recovering volumes marked INERROR (continued)

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0    1       2      0        6      No

REGULAR
VOL# VOLUMNAME  STATE     IOC  CARD  VOL  FSEG  ROOM  VLID  FILES
22     T0  INERROR      0     0    0   N/A     0   2400
23     T1  INERROR      2     1    0   N/A     0   2400

PARALLEL VOLUMES(S)
PARALLEL          STATE  IOC  CARD  VOL  FSEG  ROOM  VLID  CURR
B910212061307AMA  READY    0     0    0   N/A     1  2400  YES
```

5 Determine if any INERROR volumes are present.

If	Do
If INERROR volumes	Do
are present	step 6
are not present	step 12

6 Note the names of the INERROR volumes.

7 To reset the INERROR volumes, type

>RSETVOL vol_name

and press the Enter key.

where

vol_name
is the volume name

Example of a MAP response:

```
FILE SYSTEM ERRORS HAVE OCCURRED ON THIS VOLUME WHICH MAY AFFECT ITS
ABILITY TO RECORD DATA RELIABILITY OR MAY HAVE CORRUPTED EXISTING 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”)
```

8 To confirm the reset command, type

>YES

and press the Enter key.

Example of a MAP response:

Recovering volumes marked INERROR (end)

```
REGULAR AMA VOLUME WILL BE MARKED AS ”READY”
vol_name: VOLUME nn IN REGULAR POOL n, pool_name

DONE – AUDITING AFFECTED VOLUME/SUBSYSTEM(S).
```

If	Do
If more INERROR volumes	Do
are present	step 7
are not present	step 9

9 To query the subsystem again and verify the status of the reset volumes, type

>QUERY ssys VOLUMES

and press the Enter key.

where

ssys
is the affected subsystem

If	Do
If the INERROR volumes	Do
have the label READY	step 12
do not have the label READY	step 11

10 Determine if any other volumes have the label INERROR.

If	Do
If any other volumes	Do
have the label INERROR	step 7
do not have the label INERROR	step 12

11 For additional help, contact the next level of support.

12 The procedure is complete.

5 Emergency power conservation recovery procedures

Introduction to emergency power conservation recovery procedures

This chapter contains procedures for performing emergency power conservation recovery tasks for the DMS-100 switch. For each recovery task, you will find a procedure containing

- explanatory and context-setting information
- information
- step-action instructions

Explanatory and context-setting information

The first page of each procedure contains the following headings:

- Application (when to use the procedure)
- Action (how to use the flowchart and step-action instructions)

Summary flowchart

The flowchart is only a summary of the main actions, decision points, and possible paths you may take. Do not use the summary flowchart to perform the procedure. Instead, use it to preview what you will be doing and to prepare for it. For example, if you see that these instructions involve another office, you will know to advise that office before you begin the step-action instructions.

Step-action instructions

The step-action instructions tell you how to perform the recovery task. Normally you will perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and system information you use or see while performing the procedure. For help on DMS

commands, see *DMS-100 Family Commands Reference Manual*, 297-10001-822

Emergency power conservation Restoration

Application

Perform all or sections of the procedure *Emergency power conservation* to conserve emergency backup power. After you perform all or sections of the procedure, use this procedure to return a DMS SuperNode switch to normal operation.

This procedure consists of a top level procedure and subprocedures. The top level procedure in this document is *Emergency power conservation—Restoration*. This procedure specifies the equipment that you will restore and the order to restore this equipment. The top level procedure refers to subprocedures. The table of contents lists the subprocedures. The subprocedures provide detailed instructions to restore separate elements of the switch.

Usage notes

This procedure specifies equipment recovery in descending order. The basis of this procedure is the effect of equipment recovery on system reliability. The procedure begins with required equipment like the inactive computing module CM plane. The procedure ends with less required equipment like maintenance trunk modules. You can return switching subsystems to service in an alternate order. This order must be based on the configuration of your office and the priorities of your operating company.

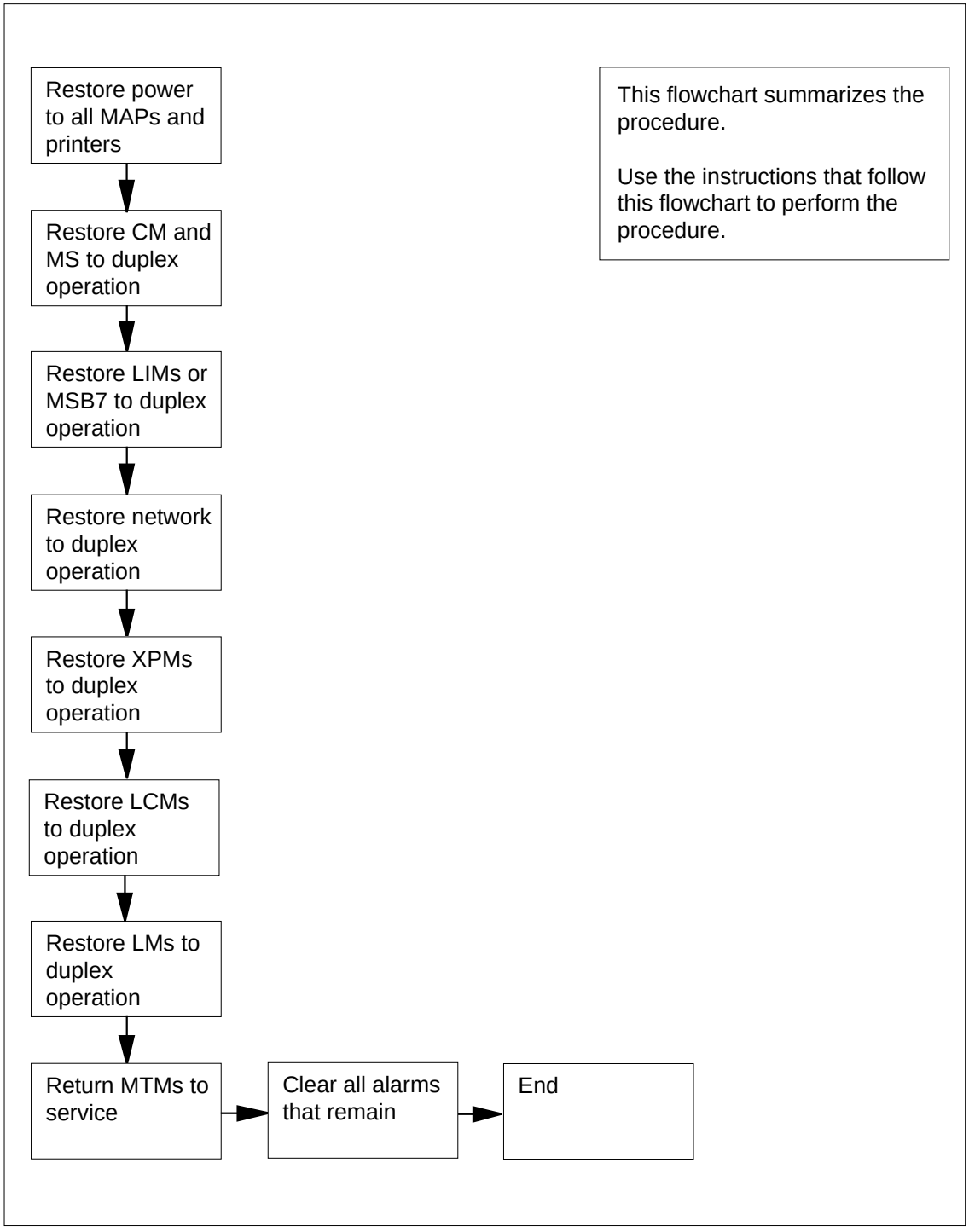
This procedure assumes that you followed the procedure *Emergency power conservation—Shutdown* in this document to remove equipment from service. All equipment must be in-service operation before you perform the procedure for emergency power conservation.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Restoration (continued)

Summary of Emergency power conservation - Restoration



Emergency power conservation Restoration (continued)

Emergency power conservation—Restoration

WARNING
Potential extended equipment outage
To expedite recovery of equipment, Nortel recommends that you perform this procedure with the help of Emergency Technical Assistance Services (ETAS).

WARNING
Potential loss of service or extended outage
Use this procedure to restore normal operation after you perform emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

At the MAP terminal

1 Read the section Usage notes at the beginning of this procedure.

2 Restore power to the inverters that supply printers and spare MAPs.

3 To recover one plane of the computing module (CM), perform the procedure *Restoring the CM to duplex operation* in this document. To conserve emergency backup power, perform the procedure if you power down one plane of the computing module.

4 To recover one side of the remote oscillator (Bliley) shelf, perform the procedure *Restoring the remote oscillator shelf to duplex operation* in this document. To conserve emergency backup power, perform the procedure if you power down one side of the Bliley shelf.

5 To recover one message switch (MS) shelf, perform the procedure *Restoring the MS to duplex operation* in this document. To conserve emergency backup power, perform the procedure if you power down one MS shelf.

6 To recover one unit of a CCS7 message switch and buffer MSB7, perform the procedure *Restoring the MSB7 to duplex operation* in this document. To conserve emergency backup power, perform the procedure if you power down one unit of a CCS7 MS and buffer MSB7.

7 To recover one link interface module (LIM) on one or more link peripheral processors (LPP), perform the procedure *Restoring the LPP LIM to duplex operation* in this document. To recover one link interface module (LIM) on one or more enhanced link peripheral processors (ELPP), perform the procedure *Restoring the ELPP LIM to duplex operation* in this document. Perform these procedures only if you powered down one link interface module (LIM) unit on a minimum of one LPP or ELPP to conserve emergency backup power.

8 Restore power to the affected frames at the power distribution center (PDC) if you power down one or more network frames.

Emergency power conservation
Restoration (end)

9 To recover a minimum of one junctored network (JNET) shelf, perform the procedure *Restoring the junctored network to duplex operation* in this document. If you power down a minimum of one JNET shelf to conserve emergency backup power, perform the procedure.

10 To recover a minimum of one enhanced network ENET shelf, perform the procedure *Restoring the enhanced network to duplex operation* in this document. If you power down a minimum of one ENET shelf to conserve emergency backup power, perform the procedure .

11 To recover a minimum of one of the following, perform the procedure *Restoring LGCs, LTCs and DTCs to duplex operation* in this document:

- the line group controller (LGC) unit
- the line trunk controllers (LTC) unit
- the digital trunk controller (DTC) unit

If you power down the LGCs, LTCs or DTCs to conserve emergency power, perform this procedure.

12 To recover the line concentrating module (LCM) units, perform the procedure *Restoring LCMs to duplex operation* in this document. If you power down a minimum of one LCMs to conserve emergency power, perform this procedure.

13 To recover the line module (LM) controllers, perform the procedure *Restoring line modules to duplex operation* in this document. If you power down the LM controllers to conserve emergency power, perform this procedure.

14 To recover a maintenance trunk module (MTM), perform the procedure *Returning maintenance trunk modules to service* in this document. If you power down one or more MTMs to conserve emergency power, perform the procedure.

15 To clear all the alarms that remain on the MAP display, use the correct alarm clearing NTPs.

16 The procedure is complete.

Emergency power conservation
Restoring the CM to duplex operation in SuperNode

Application

Use this procedure to restore the computing module (CM) to normal duplex operation. Perform this procedure after you power down one central processing unit (CPU) to conserve emergency backup power.

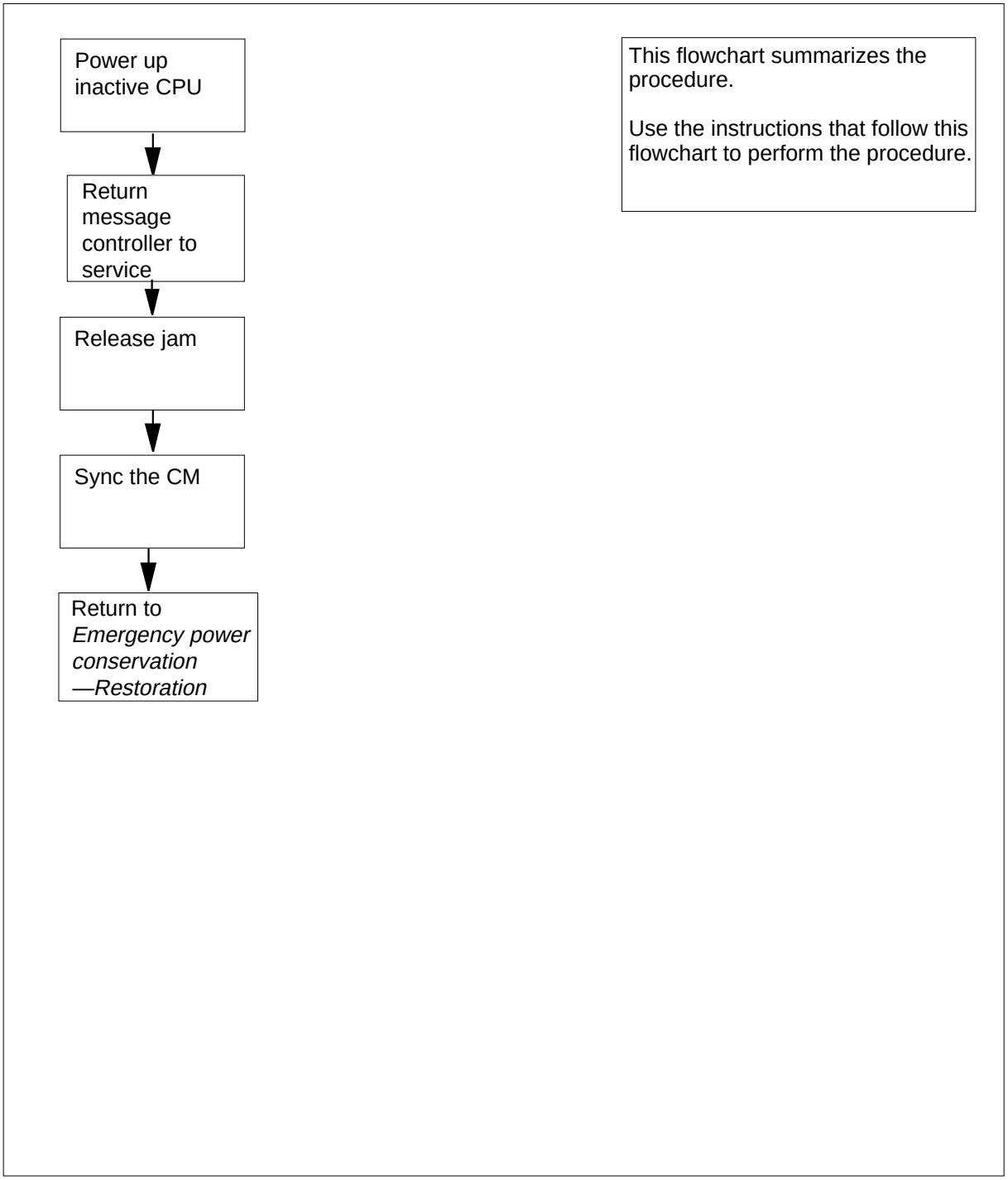
You must follow the procedure *Emergency power conservation—Shutdown* in this document to remove equipment from service. Equipment is in normal in-service operation before you need to perform the procedure for emergency power conservation.

Action

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

Emergency power conservation
Restoring the CM to duplex operation in SuperNode (continued)

Summary of Restoring the CM to duplex operation in SuperNode



Emergency power conservation
Restoring the CM to duplex operation in SuperNode (continued)

Restoring the CM to duplex operation in SuperNode

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of the equipment.

CAUTION
Potential loss of service or extended outage
This procedure restores normal operation after you perform the emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

WARNING
Static electricity damage
Wear a wrist strap that connects to 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.

At your CM shelf

1 Power up the inactive CPU as follows:

Lift and release the power switch on the faceplate of the NT9X31 power converter. The NT9X31 power converter is on the inactive side of the CM shelf.

Lift and release the power switch on the faceplate of the NT9X30 power converter. The NT9X30 power converter is on the inactive side of the CM shelf.

Note 1: The power converter appears in slots 1F to 3F for CPU 0. The power converter appears in slots 33F to 35F for CPU 1.

Note 2: The power converter appears in slots 4F to 6F for CPU 0. The power converter appears in slots 36F through 38F for CPU 1.

At the CM reset terminal for the inactive CPU

2 After the inactive CPU powers up, wait 3 min for the switch to complete memory card tests.

Example of an RTIF response:

Emergency power conservation
Restoring the CM to duplex operation in SuperNode (continued)

```
Shelf      Slot
00         12          NT9X14DB...
00         13          NT9X14DB...
Waiting for activity...
```

Note: The Waiting for activity message appears when the CPU powers up completely.

At the MAP terminal

3 To access 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   .     .    mbsy  .
```

4 To access the message controller (MC) level of the MAP display, type

>MC

and press the Enter key.

5 To return the manual busy MC to service, type

>RTS mc_number

and press the Enter key.

where

mc_number
is the number of the manual busy MC (0 or 1)

Example of a MAP response:

```
Maintenance action submitted.
MC RTS ok.
```

At the CM reset terminal for the inactive CPU

6 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key.

RTIF response:

```
JAM RELEASE DONE
```

Emergency power conservation
Restoring the CM to duplex operation in SuperNode (end)

At the MAP terminal

7 To synchronize the CM, type

>SYNC

and press the Enter key.

Example of a MAP response:

```
Maintenance action submitted.
Synchronization successful.
```

8 Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Restoring the CM duplex operation in SuperNode SE

Application

Use this procedure to return the computing module (CM) to normal duplex operation. Perform this procedure after you power down one central processing unit (CPU) to conserve emergency backup power.

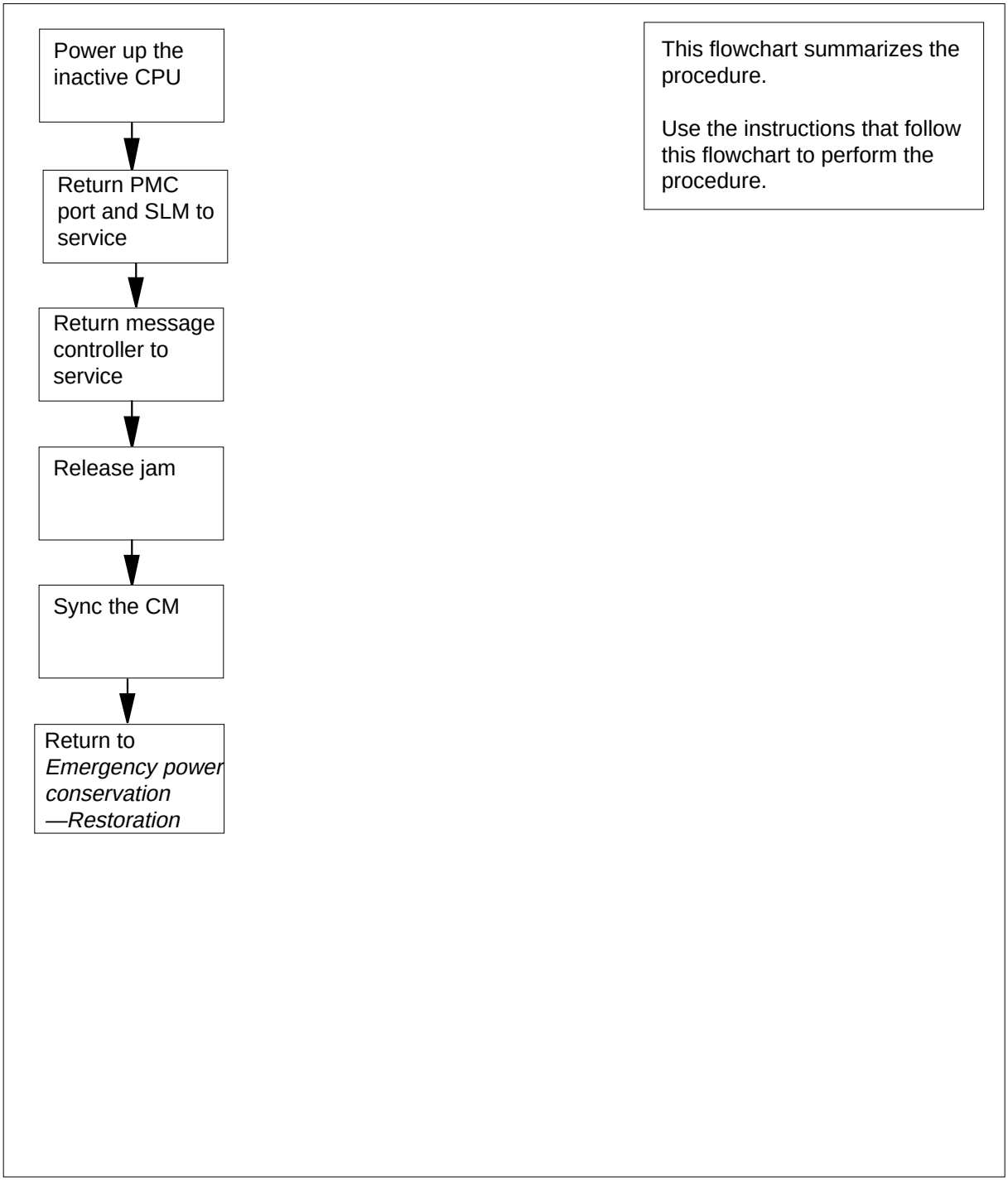
This procedure assumes the *Emergency power conservation—Shutdown* procedure totake down equipment has been followed. Instructions to restore normal operations assumes all equipment is in normal in-service operation before the need for the emergency power conservation procedure arises.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Restoring the CM duplex operation in SuperNode SE (continued)

Summary of Restoring the CM to duplex operation in SuperNode SE



Emergency power conservation
Restoring the CM duplex operation in SuperNode SE (continued)

Restoring the CM to duplex operation in SuperNode SE

CAUTION
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of equipment.

CAUTION
Potential loss of service or extended outage
This procedure restores normal operation after you perform the emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

WARNING
Static electricity damage
Wear a wrist strap that connects to 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.

At the CMISLM shelf

1 To power up the inactive CPU plane, lift and release the power switch on the faceplate of the NTDX15 power converter.

Note: Slots 4F through 6F contain the power converter for plane 0. Slots 33F through 35F contain the power converter for plane 1.

At the CM reset terminal for the inactive CPU

2 Allow the system to complete memory tests. Continue this procedure when the message Waiting for activity appears.

Example of an RTIF response:

Emergency power conservation
Restoring the CM duplex operation in SuperNode SE (continued)

```
Testing Memory:
Shelf    Slot         PEC       Modu
le Status
 00       12       NT9X14EA     ...
 00       13       NT9X14EA     ...
Waiting for activity...
```

At the MAP terminal

3 To access the peripheral message controller (PMC) level of the MAP display, type

>CM;PMC

and press the Enter key.

Example of a MAP display:

```
          PMC 0
           .

PORT0:   mbsy
PORT1:    .
```

4 To return the manual busy PMC port to service, type

>RTS pmc_number PORT port_number

and press the Enter key.

where

pmc_number
is the PMC number (0 or 1)

port_number
is the number of the manual busy port (0 or 1)

5 To access the MAP display for the manual busy system load module (SLM), type

>IOD;SLM slm_number

and press the Enter key.

where

slm_number
is the number of the manual busy SLM (0 or 1)

6 To return the manual busy SLM to service, type

>RTS

and press the Enter key.

Emergency power conservation
Restoring the CM duplex operation in SuperNode SE (continued)

7 Determine if the autoload route changed when you powered down the inactive CM plane down to conserve emergency backup power.

If the autoload route	Do
changed	step 8
did not change	step 10

8 To access the CMMNT level of the MAP display, type

>CM;CMMNT

and press the Enter key.

9 To reset the primary autoload route to the correct storage device, type

>AUTOLD SLM slm_number device_type

and press the Enter key.

where

slm_number
is the number of the SLM (0 or 1) that was the primary SLM

device_type
is the type of SLM device (DISK or TAPE)

10 To access the MC level of the MAP display, type

>CM;MC

and press the Enter key.

11 To return the manual busy message controller (MC) to service, type

>RTS mc_ number

and press the Enter key.

where

mc_number
is the number of the manual busy MC (0 or 1)

At the CM reset terminal for the inactive CPU

12 To release the jam on the inactive CPU, type

>\RELEASE JAM

and press the Enter key.

RTIF response:

```
JAM RELEASE DONE
```

Emergency power conservation
Restoring the CM duplex operation in SuperNode SE (end)

At the MAP terminal

13 To synchronize the CPUs, type

>SYNC

and press the Enter key.

Example of a MAP response:
Maintenance action submitted.Synchronization successful.

14 Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation Restoring the ELPP LIM to duplex operation

Application

Use this procedure to restore to duplex operation the link interface module (LIM) in each enhanced link peripheral processor (ELPP). Perform this procedure after you power down one unit of the LIM to conserve emergency power.

Use this procedure to restore the ELPP LIM to duplex operation only if the following conditions are met:

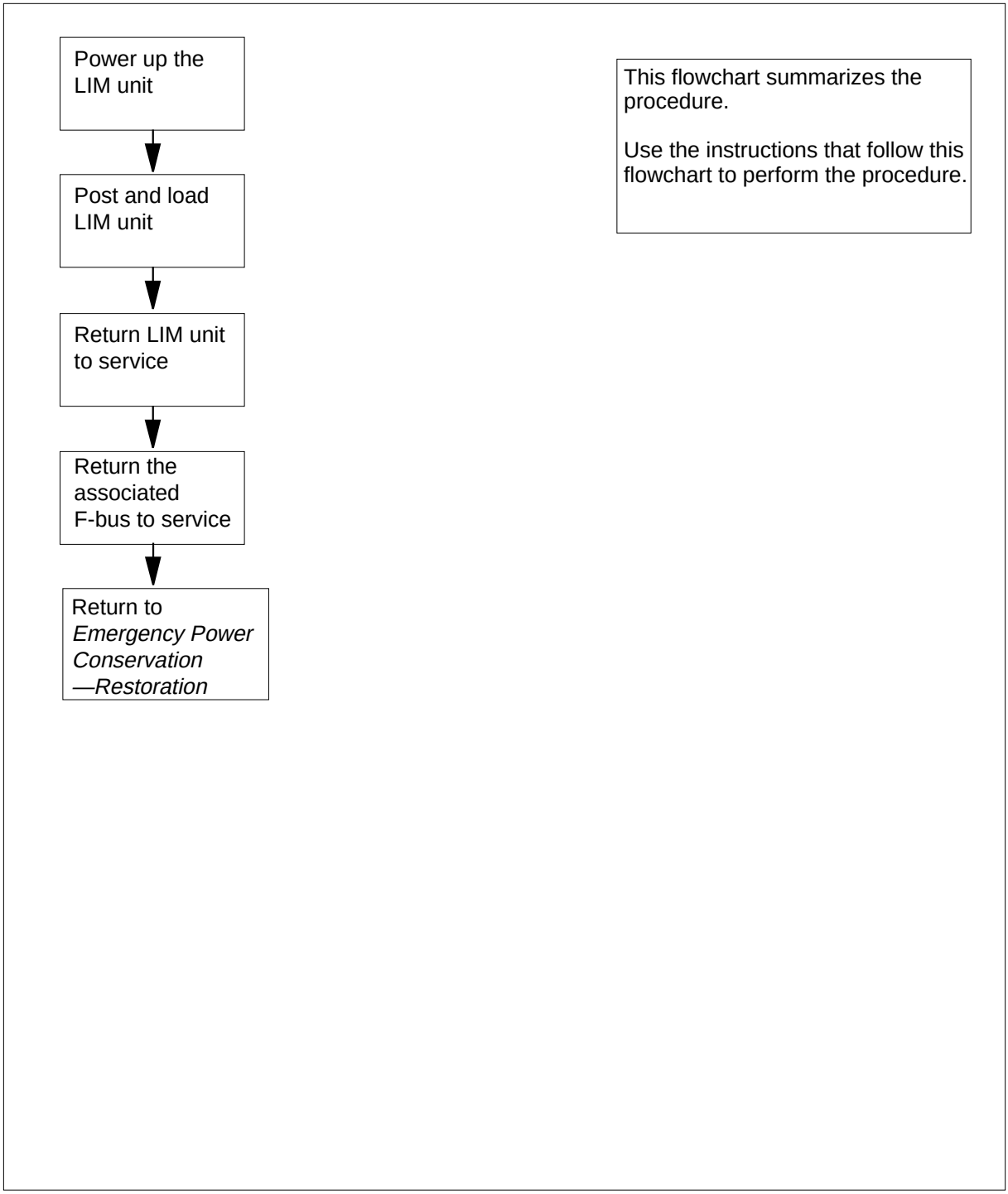
- The equipment was in normal in-service operation before being shutdown.
- Procedure *Emergency power conservation—Shutdown* in this document was used to remove equipment from service.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to clear the alarm.

Emergency power conservation
Restoring the ELPP LIM to duplex operation (continued)

Restoring the ELPP LIM to duplex operation



Emergency power conservation
Restoring the ELPP LIM to duplex operation (continued)

Restoring the ELPP LIM to duplex operation

At the ELPP

1

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) to expedite the recovery of equipment.

WARNING
Potential loss of service or extended outage
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

Power up the LIM unit you powered down to conserve emergency power as follows:

- If you powered down unit 0, lift and release the power switch on the faceplate of the NT9X31 power converter. The power switch on the faceplate of the NT9X31 power converter is in slot 1F. Lift and release the power switch on the faceplate of the NT9X30 power converter. The power switch on the faceplate of the NT9X30 power converter is in slot 4F.
- If you powered down unit 1, lift and release the power switch on the faceplate of the NT9X31 power converter. The power switch on the faceplate of the NT9X31 power converter is in slot 33F. Lift and release the power switch on the faceplate of the NT9X30 power converter. The power switch on the faceplate of the NT9X30 power converter is in slot 36F.

At the MAP terminal

2 To access the peripheral module (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     10     12      0      6     49
```

3 To post the LIM that you wish to restore to duplex operation, type

`>POST  LIM  lim_no`

Emergency power conservation
Restoring the ELPP LIM to duplex operation (continued)

and press the Enter key.

where

lim_no
is the number of the LIM that you post (0 to 16)

Example of a MAP response:

```
LIM 0  ISTB     OOS     OOS_Taps
                Links  LIS1  LIS2  LIS3
Unit0: ManB      2       12    12    12
Unit1: ISTb      2        .     .     .
```

4 To load the LIM unit that you powered up in step 1, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

5 To return to service the LIM unit that you powered up in step 1 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)

6 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 LIS (1, 2, or 3)

7 To return the F-bus to service, type

>RTS FBUS fbus_no

and press the Enter key.

where

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

Note: F-bus 0 and F-bus 1 exist for each LIS level (1, 2, and 3).

8 Repeat steps 6 and 7 for the F-bus on each LIS level (1, 2, and 3). When the F-bus for each LIS has been returned to service, go to step 9.

9 Repeat steps 1 to 7 for each ELPP that you converted to simplex operation to conserve emergency power. Once all ELPPs have been restored, go to step 10.

Emergency power conservation
Restoring the ELPP LIM to duplex operation (end)

10 Return to the procedure *Emergency power conservation—Restoration* in this document and proceed as directed.

Emergency power conservation
Restoring the junctored network to duplex operation

Application

Use this procedure to restore the junctored network (JNET) to duplex operation. Use this procedure after you power down one JNET plane to conserve emergency power.

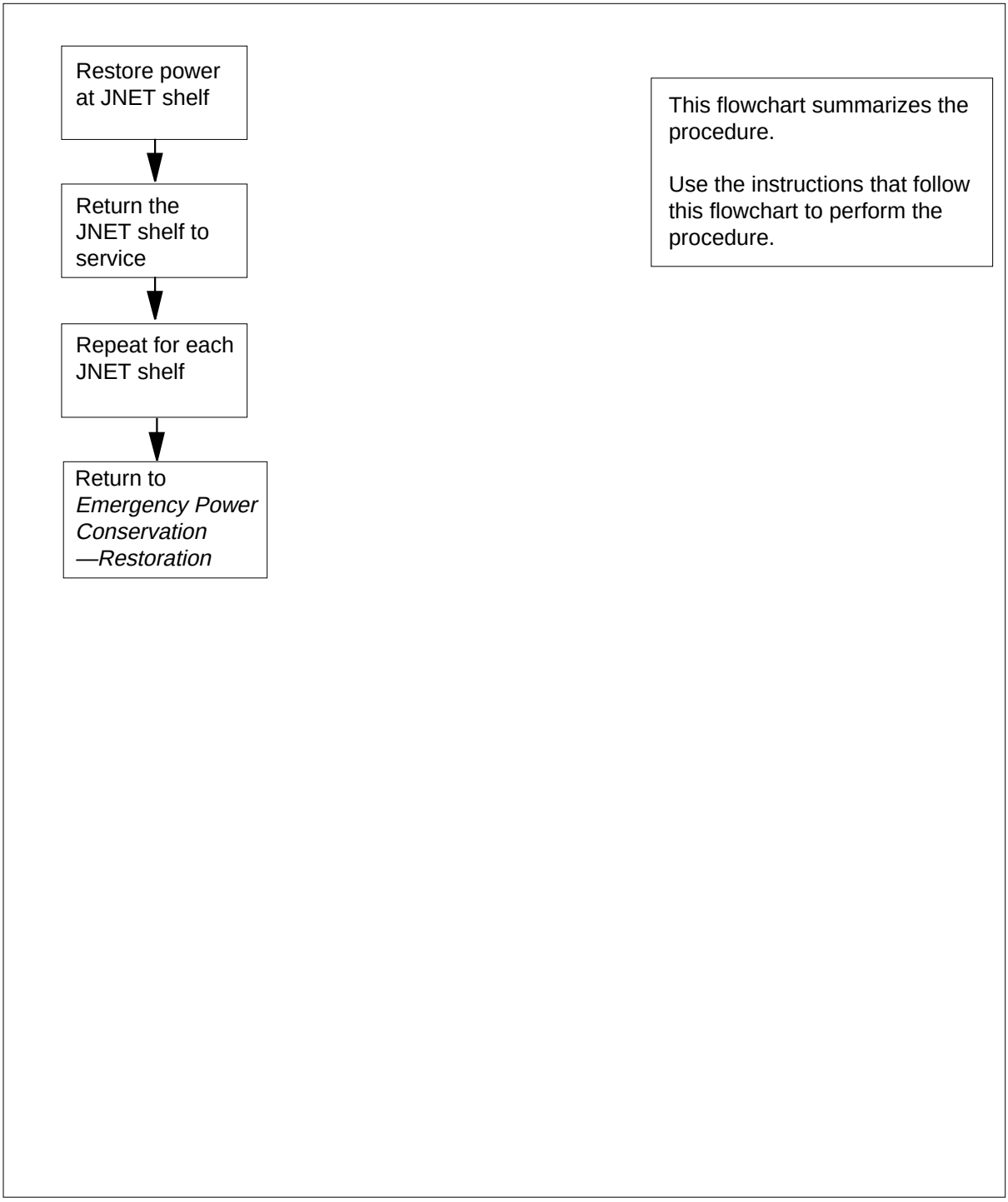
This procedure assumes that you followed the *Emergency power conservation—Shutdown* procedure in this document to remove equipment from service. Instructions to restore normal operation assumes all equipment is in normal in-service operation before the need for the emergency power conservation procedure arises.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

Emergency power conservation
Restoring the junctored network to duplex operation (continued)

Summary of Restoring the junctored network to duplex operation



Emergency power conservation
Restoring the junctored network to duplex operation (continued)

Restoring the junctored network to duplex operation

At the JNET shelf

1

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of equipment.

WARNING
Potential loss of service or extended outage
This procedure restores normal operation after you performed the emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Determine if the power converter is an NT2X70AE card.

If the power converter	Do
is an NT2X70AE card	step 2
is not an NT2X70AE card	step 5

2 Determine if the frame supervisory panel (FSP) or modular supervisory panel (MSP) has circuit breakers.

If the FSP or MSP	Do
has circuit breakers	step 3
does not have circuit breakers	step 4

3 Power up the converter as follows:

Emergency power conservation
Restoring the junctored network to duplex operation (continued)

a Pull up and set the handle of the POWER switch to the RESET position and hold.

b Set the handle of the converter circuit breaker on the FSP or MSP up until it clicks into place.

c Release the handle.

Go to step 8.

4 Power up the converter as follows:

a Pull up and set the handle of the POWER switch to the RESET position and hold until the CONVERTER FAIL LED turns off.

b Release the handle.

Go to step 8.

5 Determine if the FSP or MSP has circuit breakers.

If the FSP or MSP	Do
has circuit breakers	step 6
does not have circuit breakers	step 7

6 Power up the converter as follows:

a Pull up and set the handle of the POWER switch to the ON position.

b Press and hold the RESET button on the power converter.

c Set the handle of the converter circuit breaker on the FSP or MSP up until it clicks into place.

d Release the RESET button.

Go to step 8.

7 Power up the converter as follows:

a Pull up and set the handle of the POWER switch to the ON position.

b Press the RESET button on the power converter until the CONVERTER FAIL LED turns off.

c Release the RESET button.

At the MAP display

8 To access the NET level of the MAP display, type

```
>MAPCI;MTC;NET
```

and press the Enter key.

Example of a MAP response:

Emergency power conservation
Restoring the junctored network to duplex operation (end)

```
Net
            11111   11111   22222   22222   33
Plane   01234   56789   01234   56789       01234   56
789 01
  0     0000
  1     0000
JNET:
```

9 To return the network module to service, type

>RTS plane_no pair_no

and press the Enter key.

where

plane_no
is the network plane number (0 or 1)

pair_no
is the network plane pair number (0 to 31)

10 Repeat steps 1 to 9 for each plane pair that you remove from service to conserve emergency power.

11 Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation Restoring the LCMs to duplex operation

Application

Use this procedure to restore line concentrating modules (LCM) to duplex operation. Perform this procedure after you powered down one unit of each LCM to conserve emergency power.

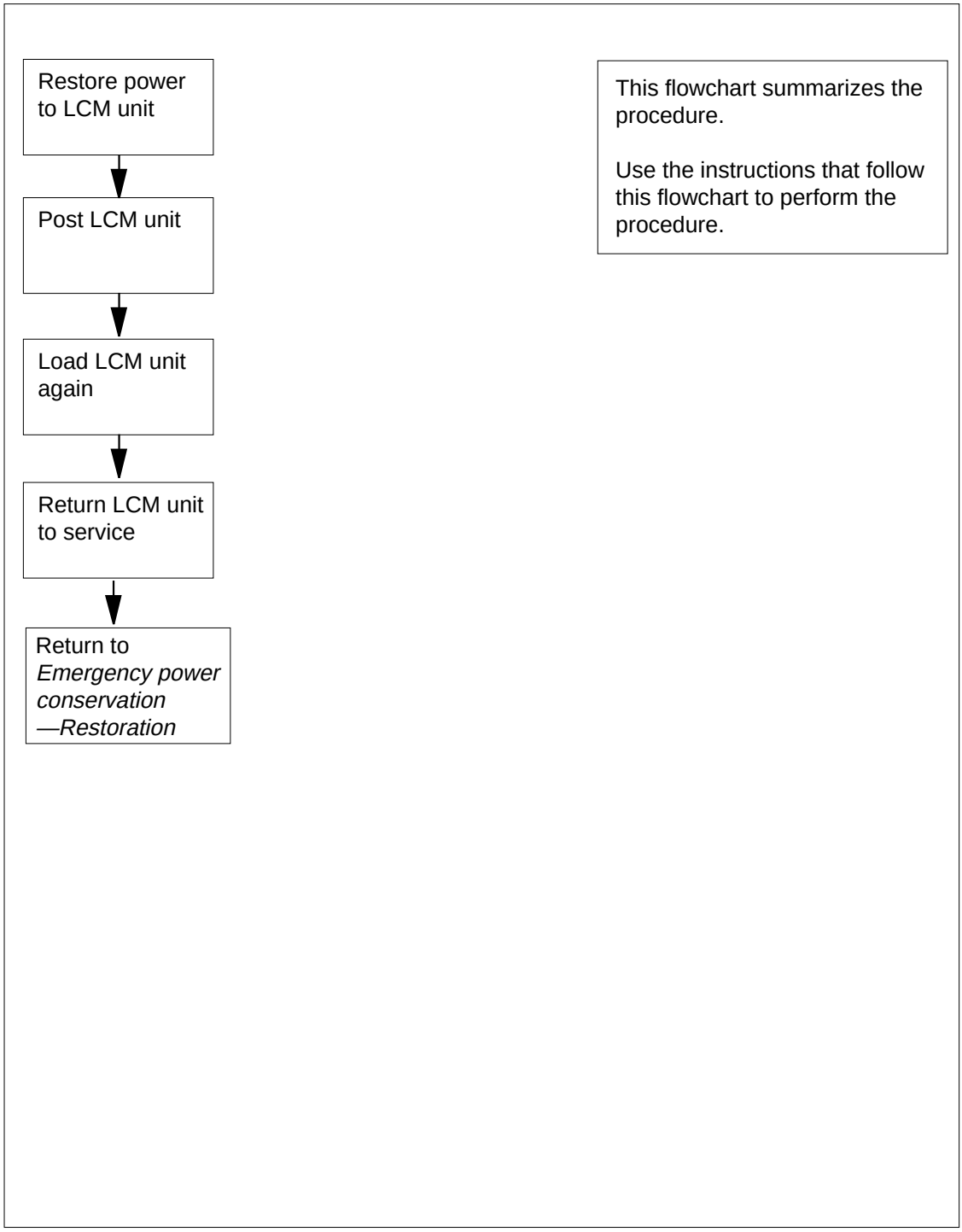
This procedure assumes that you followed the *Emergency power conservation—Shutdown* procedure in this document to remove equipment from service. Instructions to restore normal operation assumes all equipment is in normal in-service operation before the need for the emergency power conservation procedure arises.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

Emergency power conservation
Restoring the LCMs to duplex operation (continued)

Summary of Restoring the LCMs to duplex operation



Emergency power conservation
Restoring the LCMs to duplex operation (continued)

Restoring the LCMs to duplex operation

At the LCM

1

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of equipment.

WARNING
Potential loss of service or extended outage
This procedure restores normal operation after you performed emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Turn on the appropriate circuit breakers at the FSP or MSP.

At the MAP terminal

2 To access the peripheral module (PM) level of the MAP display, type

```
>MAPCI; MTC;PM
```

and press the Enter key.

3 To post the LCM , type

```
>POST  LCM  HOST  frame  pair
```

and press the Enter key.

where

frame
is the frame number (00 to 99)

pair
is the frame pair number (0 to 1)

Emergency power conservation
Restoring the LCMs to duplex operation (end)

Example of a MAP response:

```
LCM HOST 00 0 InSv Links  OOS: Cside 0 Pside 0
Unit 0: InSv        /RG:0
Unit 1: InSv    /RG:1
                      11 11 11 11 11
Drwr:   01 23 45 67 89 01 23 45 67 89   RG:Pref 0 InSv
                                         Stby 1 InSv
```

4 To load the LCM unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

unit_no
is the PM unit number (0 or 1)

5 To return the LCM to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no
is the PM unit number (0 or 1)

6 Repeat steps 1 to 5 for each LCM unit that you powered down to conserve emergency power.

7 Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation measures
Restoring the LGCs, LTCs, and DTCs to duplex operation

Application

Use this procedure to restore the following controllers to duplex operation:

- a line group controller (LGC)
- a line trunk controller (LTC)
- a digital trunk controller (DTC)

Perform this procedure after you power down one unit of each XPM to conserve emergency power.

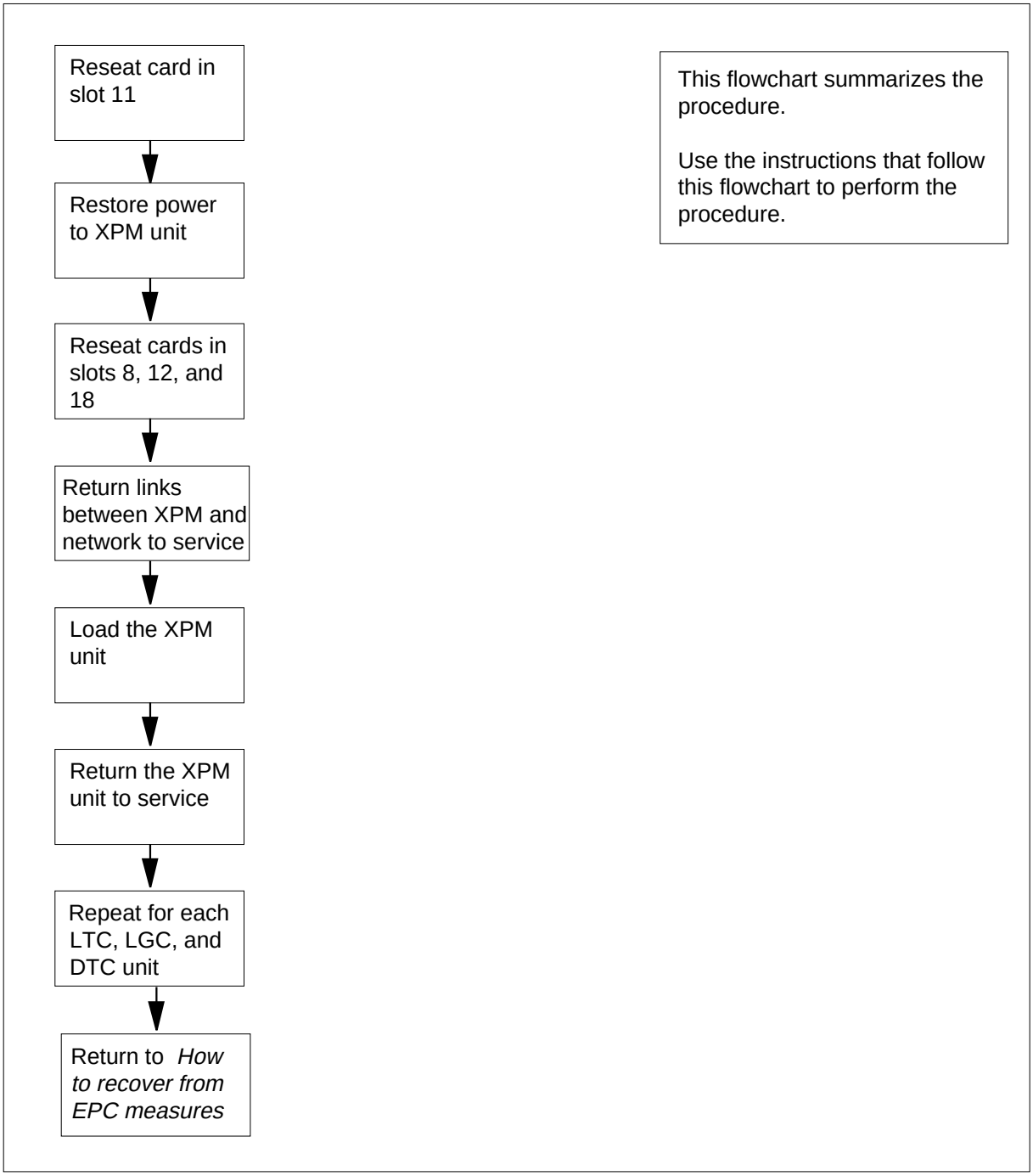
This procedure assumes that you follow the procedure *Emergency power conservation* procedure in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation measures
Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

Restoring the LGCs, LTCs, and DTCs to duplex operation



Emergency power conservation measures
Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

Restoring the LGCs, LTCs, and DTCs to duplex operation

At the shelf

1

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) before you expedite recovery of equipment.

WARNING
Potential loss of service or extended outage
Use this procedure only to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes

WARNING
Static electricity damage
When you handle circuit cards, wear a wrist strap that connects to the wrist-strap grounding point. A grounding point is on the frame supervisory panel (FSP) or the modular supervisory panel (MSP). The wrist strap protects the cards against static electricity damage.

WARNING
Briefly state reasons for the ESDS caution
Enter the reasons for the electro-static discharge caution: an ESDS caution informs the reader to observe precautions for handling an electrostatically sensitive device.

Reseat the NT6X46 signaling processor memory card in slot 11.

2 Determine if the power converter is a NT2X70AE card.

If the power converter	Do
is a NT2X70AE card	step 3

Emergency power conservation measures
Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

If the power converter	Do
is not a NT2X70AE card	step 6

3 Determine if the FSP or MSP has circuit breakers.

If the FSP or MSP	Do
has circuit breakers	step 4
does not have circuit breakers	step 5

4 Power up the converter as follows

a Pull and set the handle of the POWER switch up to the RESET position and hold.

b Set the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

c Release the handle.

d Go to step 9.

5 Power up the converter in slot 25 as follows:

a Pull and set the handle of the POWER switch up to the RESET position. Hold the handle of the POWER switch up until the CONVERTER FAIL LED turns off.

b Release the handle.

c Go to step 9.

6 Determine if the FSP or MSP has circuit breakers.

If the FSP or MSP	Do
has circuit breakers	step 7
does not have circuit breakers	step 8

7 Power up the converter in slot 25 as follows

a Pull and set the handle of the POWER switch up to the ON position.

b Press and hold the RESET button on the power converter.

c Set the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

d Release the RESET button.

e Go to step 9.

8 Power up the converter in slot 25 as follows:

a Pull and set the handle of the POWER switch up to the ON position.

b Press the RESET button on the power converter until the CONVERTER FAIL LED goes off.

Emergency power conservation measures
Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

c Release the RESET button.

9 Reseat the NT6X45 master processor card in slot 8.

10 Reseat the NT6X45 signaling processor card in slot 12.

11 Reseat the NT6X69 message protocol card or the NT6X43 message interface card in slot 18.

At the MAP terminal

12 To access the peripheral module (PM) level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

13 To post the XPM, type

>POST pm_type pm_no

and press the Enter key.

where

pm_type
is the PM type (LGC, DTC, or LTC)

pm_no
is the PM identification number (0 to 999)

Example of a MAP response:

```
DTC    0 ISTb  Links_OOS: CSide  0 , PSide  0
Unit0:          Act     InSv
Unit1:          Inact       ManB
```

14 To identify the network type and network links associated with the manual busy XPM unit, type

>TRNSL C

and press the Enter key.

Example of a MAP response for JNET:

```
LINK 0: NET 0 1 0;CAP MS;Status:OK
LINK 1: NET 1 1 0;CAP MS;Status:MBsy
LINK 2: NET 0 1 4;CAP MS;Status:OK
LINK 3: NET 1 1 4;CAP MS;Status:MBsy
LINK 4: NET 0 1 8;CAP MS;Status:OK
...
LINK 31 NET 1 1 60;CAP MS;Status:MBsy
```

Note: Links 5 to 30 do not appear.

Example of a MAP response for ENET:

Emergency power conservation measures
Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

```
LINK 0: ENET 0  0 14 01 0;CAP MS;Status:OK
LINK 1: ENET 1  0 24 01 0;CAP MS;Status:MBsy
LINK 2: ENET 0  0 14 01 1;CAP MS;Status:OK
LINK 3: ENET 1  0 24 01 1;CAP MS;Status:MBsy
LINK 4: ENET 0  0 14 01 2;CAP MS;Status:OK
LINK 5: ENET 1  0 24 01 2;CAP MS;Status:MBsy
LINK 6: ENET 0  0 14 01 3;CAP MS;Status:OK
LINK 7: ENET 1  0 24 01 3;CAP MS;Status:MBsy
```

15 Determine if the network on your switch is a junctored network (JNET) or enhanced network (ENET).

If the network	Do
is JNET	step 16
is ENET	step 22

16 Determine the XPM unit that is manual busy (0 or 1). Record the speech link numbers (0 to 31) associated with the XPM. Even numbered speech links (0, 2, 4 ... 30) associate with XPM unit 0. Odd numbered speech links (1, 3, 5 ... 31) associate with XPM unit 1.

Note: Speech link numbers 5 to 30 do not appear in the example in step 14. The links associated with XPM unit 1 are manual busy.

17 Record the network plane number, network module (pair) number, and network link number for each speech link recorded in step 16.

Note: A JNET example response appears in step 14. In this example, speech link 2 associates with network plane 0, network module number 1, and network link number 4.

18 To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

19 To access the network link level for the first network link that you return to service, type

```
>LINKS  n
```

and press the Enter key.

where

n
is the network module number recorded in step 17

20 To return the first network link to service, type

```
>RTS  plane_no  link_no
```

and press the Enter key.

where

Emergency power conservation measures
Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

plane_no
is the network plane (0 or 1)

link_no
is the network link number

21 Repeat steps 19 and 20 until all links between the manual busy XPM unit and network return to service. Go to step 29.

22 Determine the speech link numbers associated with the manual busy XPM unit. Even numbered speech links associate with unit 0. Odd numbered speech links associate with unit 1.

Note: Speech links 0, 2, 4 and 6 associate with XPM unit 0 in the ENET example response in step 14. Speech links 1, 3, 5, and 7 associate with XPM unit 1. The speech links associated with XPM unit 1 are manual busy.

23 Record the ENET plane number, shelf number, card number, and network link number associated with the speech link. Perform this procedure for each speech link recorded in step 22.

Note: An ENET example response appears in step 14. In this example, speech link 3 associates with ENET plane 1, shelf 0, card 24, and network link number 01.

24 To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

25 To access the MAP display for the associated ENET card of the first speech link, type

```
>SHELF  shelf_no;  CARD  card_no
```

and press the Enter key.

where

shelf_no
is the ENET shelf number

card_no
is the ENET card number

26 To return the first link recorded in step 22 to service, type

```
>RTS   plane_no  LINK  link_no
```

and press the Enter key.

where

plane_no
is the ENET plane number, recorded in step 23

link_no
is the network link number, recorded in step 23

27 To remove the deload status from the ENET card, type

```
>DELOAD   plane_no  CLEAR
```

and press the Enter key.

Emergency power conservation measures
Restoring the LGCs, LTCs, and DTCs to duplex operation (end)

where

plane_no
is the ENET plane number

28 Repeat steps 25 to 27 for each speech link recorded in step 22. Continue the procedure.

29 To reload the manual busy XPM unit, type

```
>PM;LOADPM  UNIT  unit_no
```

and press the Enter key.

where

unit_no
is the number of the manual-busy unit (0 or 1)

30 To return the XPM unit to service, type

```
>RTS  UNIT  unit_no
```

and press the Enter key.

31 Repeat steps 1 to 30 for each LGC, LTC, and DTC unit that you power down to conserve emergency power.

32 Return to the procedure *Recovering from emergency power conservation measures* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Restoring the line modules to duplex operation

Application

Use this procedure to restore line modules (LM) to duplex operation. Perform this procedure after you power down one unit of each LM controller to conserve emergency power.

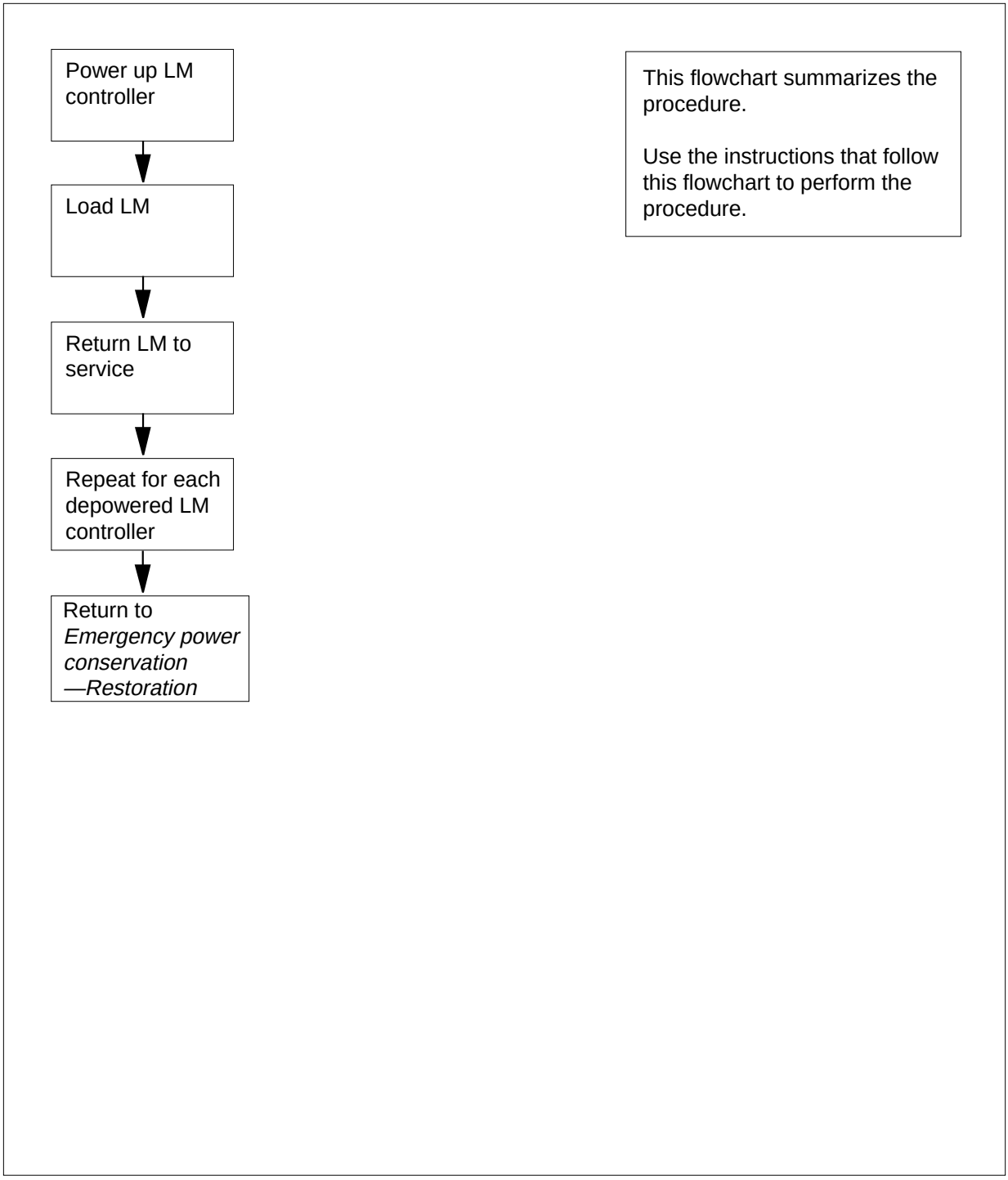
This procedure assumes that you followed the *Emergency power conservation—Shutdown* procedure in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

Emergency power conservation
Restoring the line modules to duplex operation (continued)

Summary of Restoring the line modules to duplex operationss



Emergency power conservation
Restoring the line modules to duplex operation (continued)

Restoring the line modules to duplex operation

At the LM controller shelf

1

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) to expedite recovery of equipment.

WARNING
Potential loss of service or extended outage
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

WARNING
Static electricity damage
Wear a wrist strap that connects to 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.

Determine if the power converter is a NT2X70AE card.

If the power converter	Do
is a NT2X70AE card	step 2
is not a NT2X70AE card	step 5

2 Determine if the FSP or MSP has circuit breakers.

If the FSP or MSP	Do
has circuit breakers	step 3
does not have circuit breakers	step 4

3 Power up the converter in slot 20 as follows:

Emergency power conservation
Restoring the line modules to duplex operation (continued)

a Pull up and set the handle of the POWER switch to the RESET position and hold.

b Set the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

c Release the handle.

Go to step 8.

4 Power up the converter in slot 20 as follows:

a Pull up and set the handle of the POWER switch to the RESET position. Hold the handle in the RESET position until the CONVERTER FAIL LED goes off.

b Release the handle.

Go to step 8.

5 Determine if the FSP or MSP has circuit breakers.

If the FSP or MSP	Do
has circuit breakers	step 6
does not have circuit breakers	step 7

6 Power up the converter in slot 20 as follows:

a Pull up and set the handle of the POWER switch to the ON position.

b Press and hold the RESET button on the power converter.

c Set the handle of the converter circuit breaker on the FSP or MSP up until it clicks into place.

d Release the RESET button.

Go to step 8.

7 Power up the converter in slot 20 as follows:

a Pull up and set the handle of the POWER switch to the ON position.

b Press the RESET button on the power converter until the CONVERTER FAIL LED goes off.

c Release the RESET button.

At the MAP terminal

8 To access the peripheral module (PM) level of the MAP display, type

```
>MAPCI;MTC;PM
```

and press the Enter key.

9 To post the affected LM, type

```
>POST  LM  HOST  frame  pair
```

and press the Enter key.

where

Emergency power conservation
Restoring the line modules to duplex operation (end)

frame
is the frame number (00 to 99)

pair
is the frame pair number (0 to 1)

Example of a MAP response:

```
LM  HOST 00 0  ManB
```

10 To load the PM, type

>LOADPM

and press the Enter key.

11 To return the PM to service, type

>RTS

and press the Enter key.

12 Repeat steps 1 to 11 for each line module controller that you power down to conserve emergency power.

13 Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Restoring the LPP LIM to duplex operation

Application

Use this procedure to restore the link interface module (LIM) in each link peripheral processor (LPP) to duplex operation. Perform this procedure after you power down one unit of the LIM to conserve emergency power.

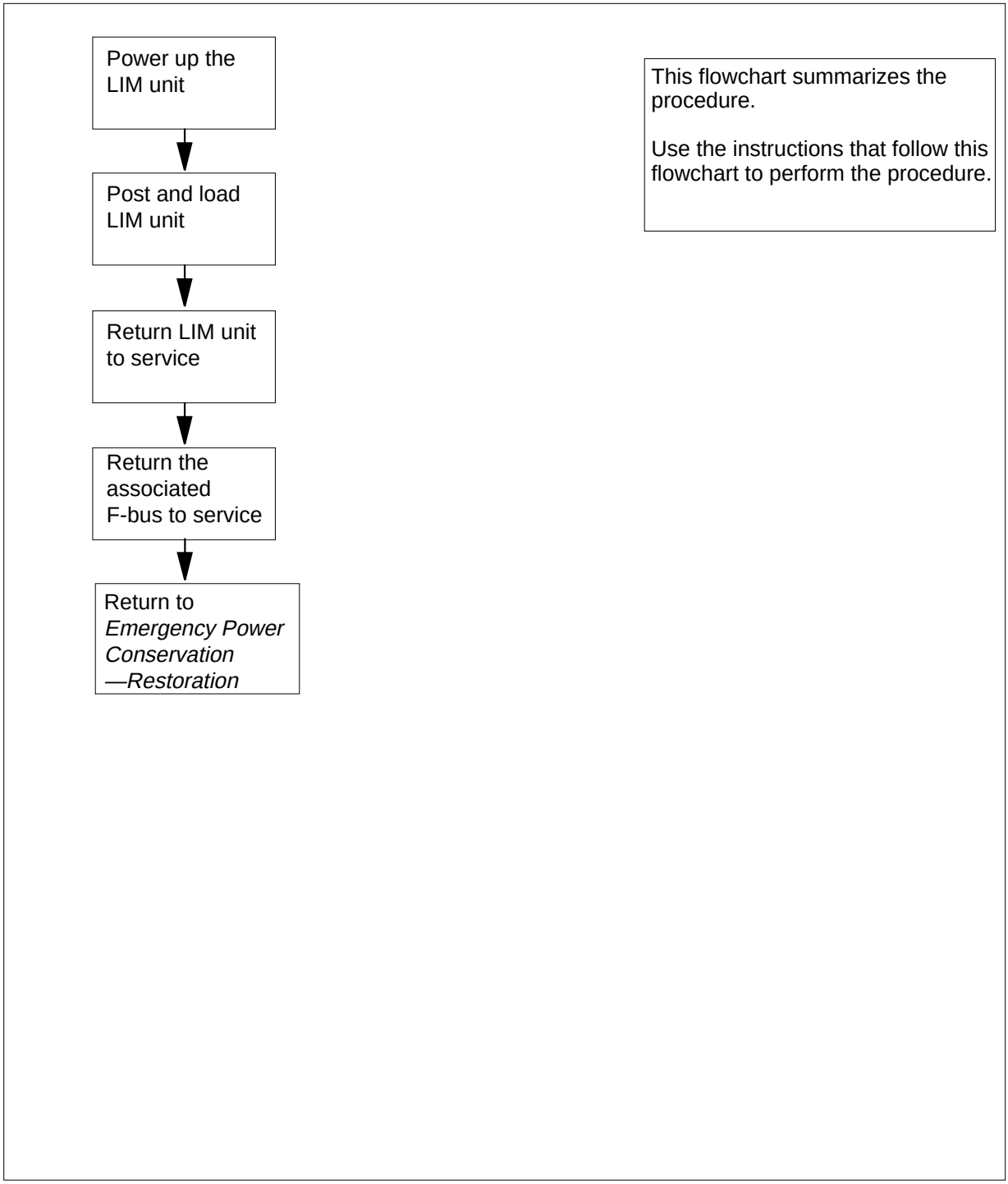
You must follow the procedure *Emergency power conservation—Shutdown* in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to clear the alarm.

Emergency power conservation
Restoring the LPP LIM to duplex operation (continued)

Restoring the LPP LIM to duplex operation



Emergency power conservation
Restoring the LPP LIM to duplex operation (continued)

Restoring the LPP LIM to duplex operation

At the LPP

1

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) to expedite the recovery of equipment.

WARNING
Potential loss of service or extended outage
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

Power up the LIM unit you powered down to conserve emergency power as follows:

- If you powered down unit 0, lift and release the power switch on the faceplate of the NT9X30 power converter. The power switch on the faceplate of the NT9X30 power converter is in slot 4F.
- If you powered down unit 1, lift and release the power switch on the faceplate of the NT9X30 power converter. The power switch on the faceplate of the NT9X30 power converter is in slot 36F.

At the MAP terminal

2 To access the peripheral module (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      10     12      0      6     49
```

3 To post the LIM that you restore to duplex operation, type

`>POST  LIM  lim_no`

and press the Enter key.

where

Emergency power conservation
Restoring the LPP LIM to duplex operation (end)

lim_no
is the number of the LIM that you post (0 to 16)

Example of a MAP response:

```
LIM  1  ISTB
                Links_OOS Taps_OOS
    Unit0: ManB      2       16
    Unit1: InSv      .       .
```

4 To load the LIM unit that you powered up in step 1, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

5 To return the LIM unit that you powered up in step 1 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)

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

>FBUS

and press the Enter key.

At the MAP

7 To return the F-bus to service, type

>RTS FBUS fbus_no

and press the Enter key.

where

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

Note: F-bus 0 associates with LIM unit 0 and F-bus 1 associates with LIM unit 1.

8 Repeat steps 1 to 7 for each LPP that you converted to simplex operation to conserve emergency power.

9 Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Restoring the maintenance trunk modules to service

Application

Use this procedure to recover maintenance trunk modules that you power down to conserve emergency power.

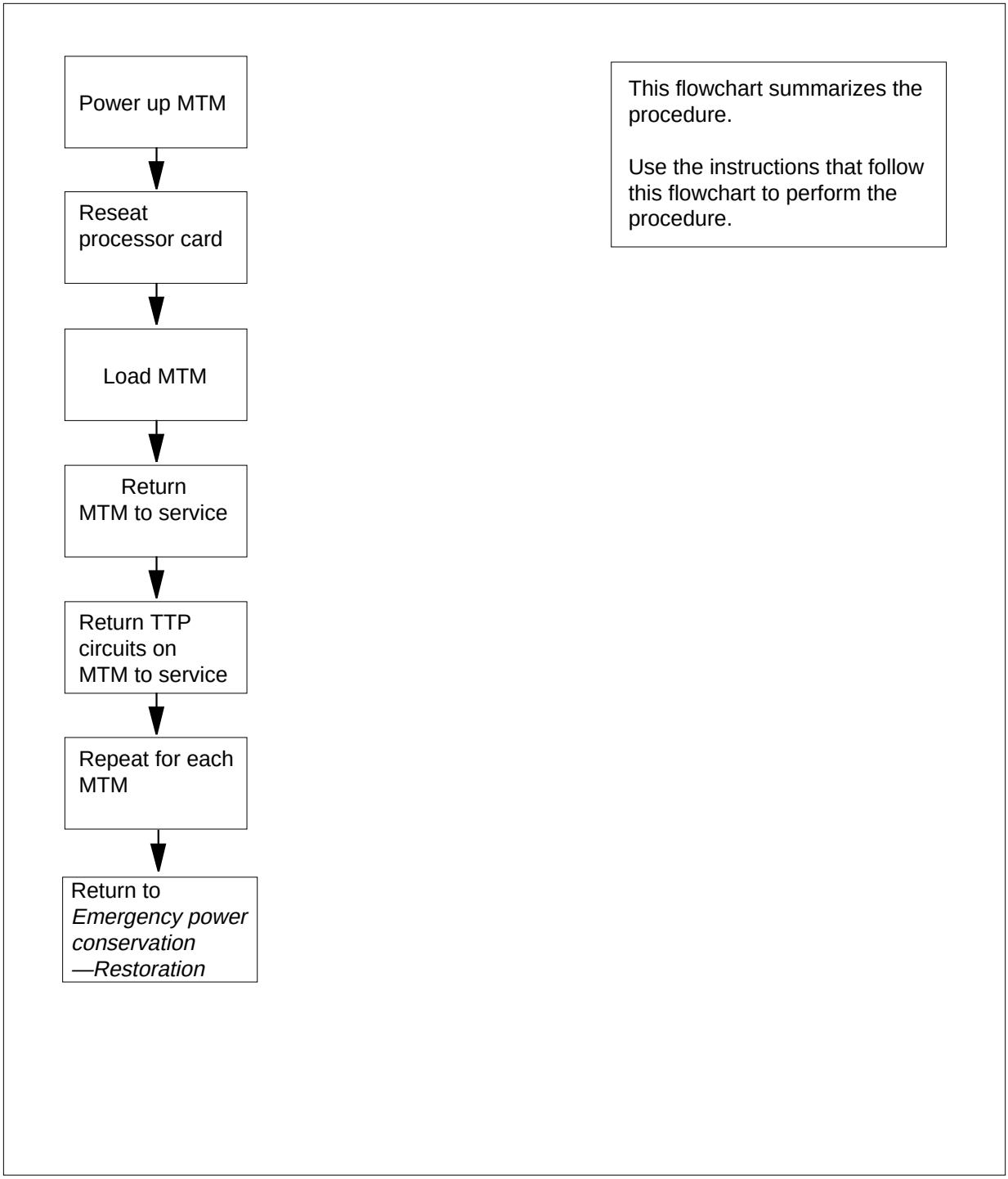
The procedures assumes that you followed the *Emergency power conservation—Shutdown* in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

Emergency power conservation
Restoring the maintenance trunk modules to service (continued)

Summary of Restoring the maintenance trunk modules to service



Emergency power conservation
Restoring the maintenance trunk modules to service (continued)

Restoring the maintenance trunk modules to service

At the MTM

1

CAUTION
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) to expedite recovery of equipment.

CAUTION
Potential loss of service or extended outage
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

CAUTION
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Determine if the FSP or MSP has circuit breakers.

If the FSP or MSP	Do
has circuit breakers	step 2
does not have circuit breakers	step 4

2 Power up the NT2X09 power converter in slot 20 as follows:

a Pull up and set the handle of the POWER switch to the ON position.

b Press and hold the RESET button on the power converter.

c Set the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

d Release the RESET button.

3 Go to step 5.

Emergency power conservation
Restoring the maintenance trunk modules to service (end)

4 Power up the NT2X09 power converter in slot 20 as follows:

a Pull up and set the handle of the POWER switch to the ON position.

b Press the RESET button on the power converter until the CONVERTER FAIL LED goes off.

c Release the RESET button.

5 Replace the NT0X70 processor and memory card.

At the MAP terminal

6 To post the maintenance trunk module (MTM), type

`>POST MTM pm_no`

and press the Enter key.

where

pm_no
is the peripheral module (PM) identification number (0 to 999)

7 To load the PM, type

`>LOADPM`

and press the Enter key.

8 To return the PM to service, type

`>RTS`

and press the Enter key.

9 To access the trunk test position (TTP) level of the MAP display, type

`>TRKS;TTP`

and press the Enter key.

10 To post the TTP circuits that associate with the MTM, type

`>POST P MTM pm_no`

and press the Enter key.

where

pm_no
is the PM identification number (0 to 999)

11 To return the circuits that you busy in step 10 to service, type

`>RTS ALL`

and press the Enter key.

12 Repeat steps 1 to 11 for each MTM that you powered down to conserve emergency power.

13 The procedure is complete.

Emergency power conservation
Restoring the MS to duplex operation

Application

Use this procedure to restore the message switch (MS) to duplex operation. Perform this procedure to conserve emergency power after you power down one plane of the MS.

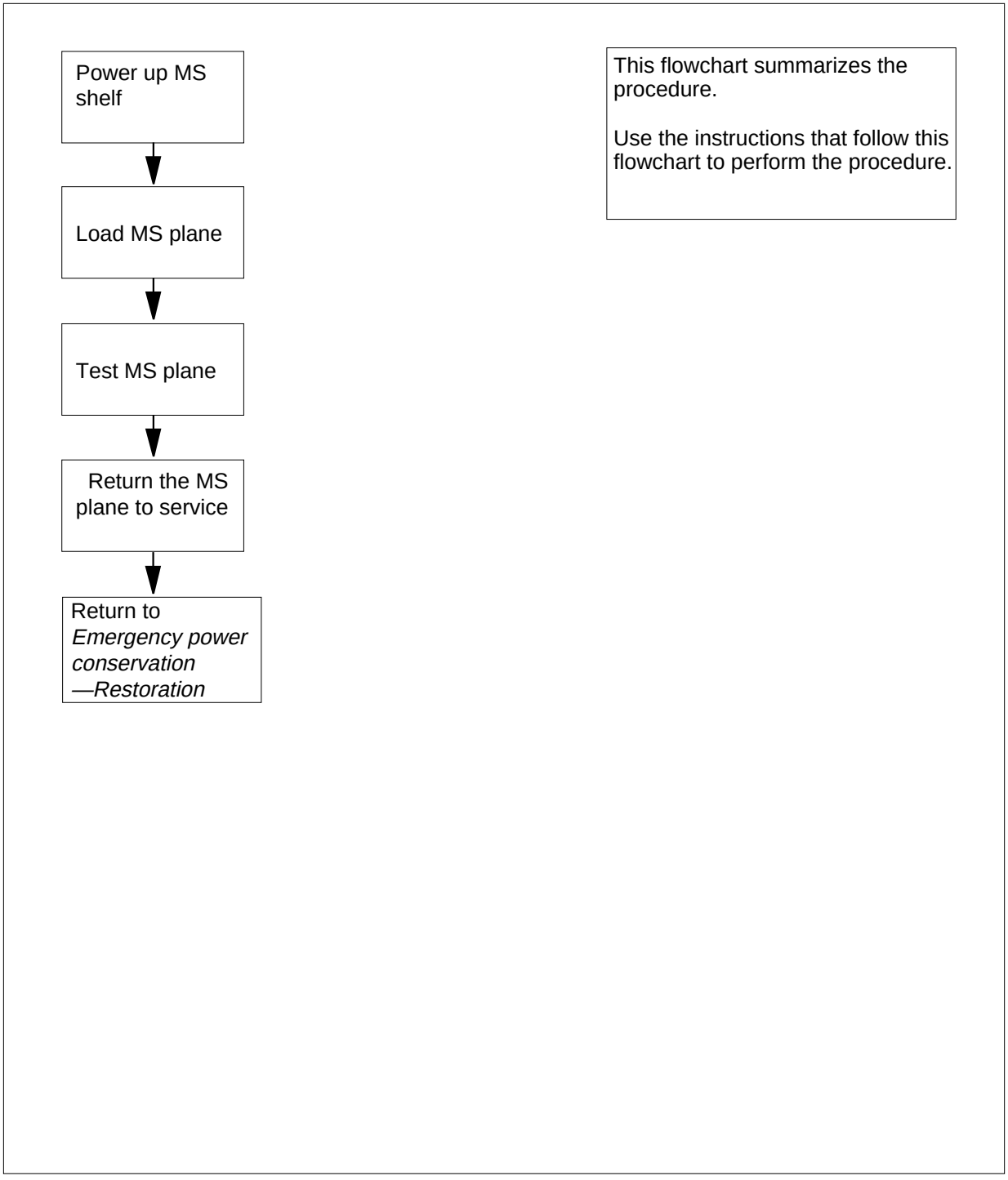
The procedure assumes *Emergency power conservation—Shutdown* in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

Action

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

Emergency power conservation
Restoring the MS to duplex operation (continued)

Summary of Restoring the MS to duplex operation



Emergency power conservation
Restoring the MS to duplex operation (continued)

Restoring the MS to duplex operation

At your Current Location

1

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) to expedite recovery of equipment.

WARNING
Potential loss of service or extended outage
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

If you power down half of the remote oscillator (Bliley) shelf (ROS) to conserve emergency power, restore the ROS to duplex operation. Restore the ROS to duplex operation before you restore the MS. Perform the procedure *Restoring the remote oscillator shelf to duplex operation* in this document. Power up both halves of the ROS and continue this procedure.

At the MS shelf

2

WARNING
Static electricity damage
Wear a wrist strap that connects to 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.

Power up the slave MS as follows:

a At the same time, lift and release the switches on the faceplates of the power converters in slots 33 and 36.

b Lift and release the switch on the faceplate of the NT9X31 -5V power converter in slot 1.

c Lift and release the switch on the faceplate of the NT9X30 +5V power converter in slot 4.

Emergency power conservation
Restoring the MS to duplex operation (continued)

At the MAP terminal

3 To access the MS level of the MAP display, type

`>MAPCI;MTC;MS`

and press the Enter key.

4 To reload the latest MS image file, type

`>LOADMS ms_number`

and press the Enter key.

where

ms_number
is the number of the manual busy MS (0 or 1)

Example of a MAP response:

```
Request to Load MS: 0 submitted.
Request to Load MS: 0 passed.
Loading completed, entry point is #06045FCO
```

5 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)

Example of a MAP response:

```
Request to TEST OOS MS: 0 submitted.
Request to TEST OOS MS: 0 passed.
No node faults were found on MS 0.
No cards were found to be faulty on MS0.
Request to TEST VIA MATE MS: 0 submitted.
Request to TEST VIA MATE MS: 0 passed.
No node faults were found on MS 0.
No cards were found to be faulty on MS 0.
```

6 To return the manual busy MS to service, type

`>RTS ms_number`

and press the Enter key.

where

ms_number
is the number of the manual busy MS (0 or 1)

Example of a MAP response:

Emergency power conservation
Restoring the MS to duplex operation (end)

```
Request to RTS MS: 0 submitted.
Request to RTS MS: 0 passed.
No node faults were found on MS 0.
No cards were found to be faulty on MS 0.
```

7 Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation Restoring the MSB7 to duplex operation

Application

Use this procedure to restore the CCS7 message switch and buffer (MSB7) to duplex operation. Perform this procedure to conserve emergency backup power after you power down one plane of the MSB7.

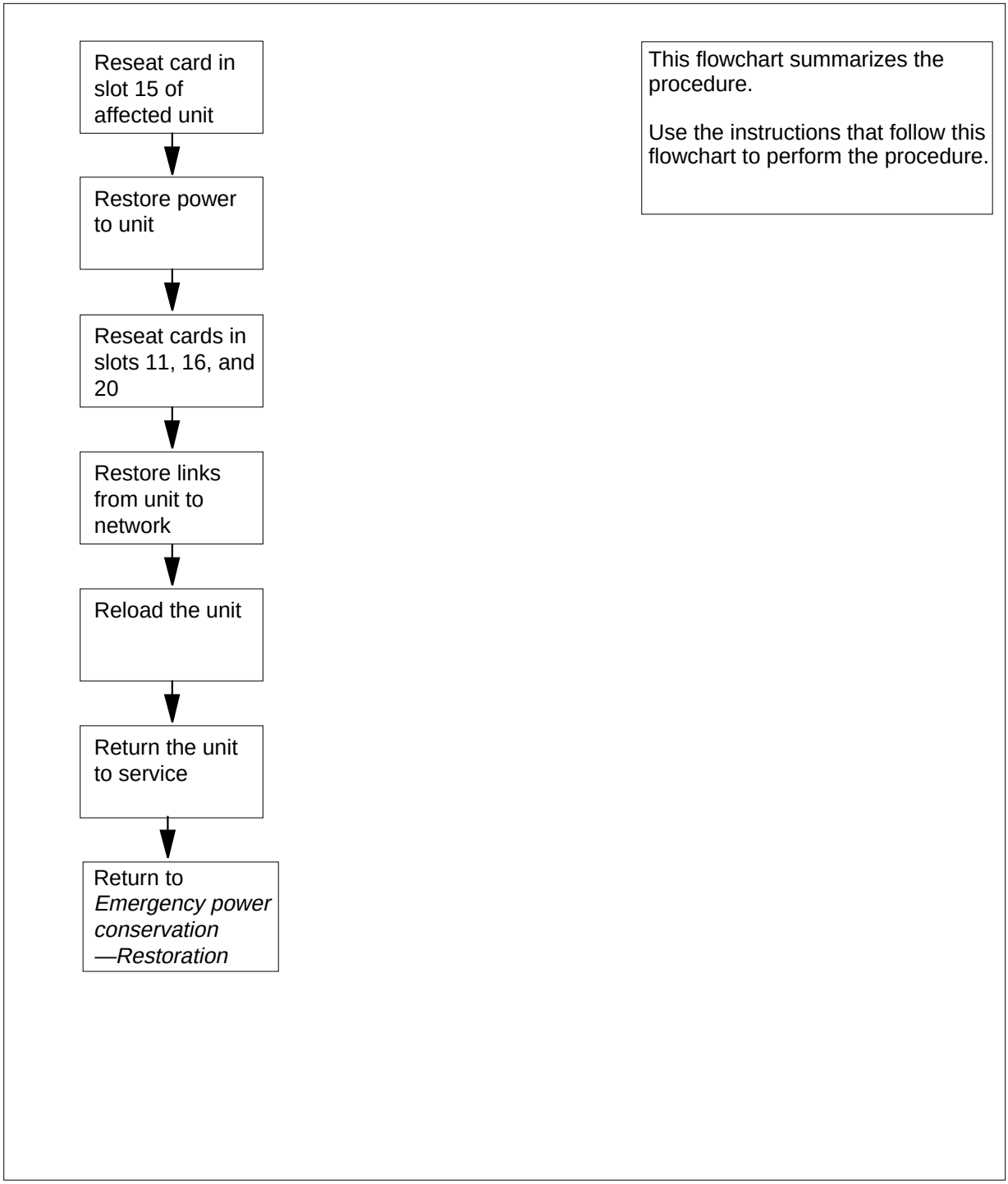
The procedure assumes that you followed the *Emergency power conservation—Shutdown* procedure in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

Action

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

Emergency power conservation
Restoring the MSB7 to duplex operation (continued)

Summary of Restoring the MSB7 to duplex operation



Emergency power conservation
Restoring the MSB7 to duplex operation (continued)

Restoring the MSB7 to duplex operation

At the MSB7 shelf

1

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) before you expedite recovery of equipment.

WARNING
Potential loss of service or extended outage
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

Reseat the memory card for the NT6X46 signaling processor in slot 15.

2 Determine if the FSP or MSP has circuit breakers

If the FSP or MSP	Do
has circuit breakers	step 3
does not have circuit breakers	step 5

3 Power up the converter in the following order:

a Pull up and set the handle of the POWER switch to the RESET position and hold.

b Set the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

c Release the handle.

Note: The power converter appears in slot 25.

4 Go to step 6.

5 Power up the converter as follows:

a Pull up and set the handle of the POWER switch to the RESET position. Hold the handle in the RESET position until the CONVERTER FAIL LED goes off.

b Release the handle.

6 Reseat the NT6X45 master processor card in slot 11.

Emergency power conservation
Restoring the MSB7 to duplex operation (continued)

7 Reseat the NT6X45 signaling processor card in slot 16.

8 Reseat the NT6X69 message protocol card in slot 20.

At the MAP terminal

9 To access the peripheral module (PM) level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

10 To post the MSB7, type

>POST MSB7 pm_no

and press the Enter key.

where

pm_no
is the PM identification number (0 to 999)

Example of a MAP response:

```
MSB7    0 ISTb  Links_OOS: CSide  0
, PSide  0

Unit0:           ManB  Mtce
Unit1:           Insv
```

11 To identify the network type and network links that associate with the manual busy MSB7 unit, type

>TRNSL C

and press the Enter key.

Example of a MAP response for JNET:

```
LINK 0: NET 0 3 12;CAP MS;Status:OK
LINK 1: NET 1 3 12;CAP MS;Status:MBsy
LINK 2: NET 0 3 28;CAP MS;Status:OK
LINK 3: NET 1 3 28;CAP MS;Status:MBsy
LINK 4: NET 0 3 44;CAP MS;Status:OK
...
LINK 31 NET 1 3 63;CAP MS;Status:MBsy
```

Note: Links 5 to 30 do not appear.

Example of a MAP response for ENET:

Emergency power conservation
Restoring the MSB7 to duplex operation (continued)

```
LINK 0: ENET 0  0 13 00;CAP MS;Status:OK
LINK 1: ENET 1  0 23 00;CAP MS;Status:MBsy
LINK 2: ENET 0  0 13 01;CAP MS;Status:OK
LINK 3: ENET 1  0 23 01;CAP MS;Status:MBsy
LINK 4: ENET 0  0 13 02;CAP MS;Status:OK
LINK 5: ENET 1  0 23 02;CAP MS;Status:MBsy
LINK 6: ENET 0  0 13 03;CAP MS;Status:OK
LINK 7: ENET 1  0 23 03;CAP MS;Status:MBsy
```

12 Determine if the network on your switch is a junctored network (JNET) or enhanced network (ENET).

If the network	Do
is JNET	step 13
is ENET	step 19

13 Determine the MSB7 unit that is manual busy (0 or 1). Note the manual busy speech link numbers (0 to 31) that associate with the MSB7 unit. Even numbered speech links (0, 2, 4 ... 30) associate with MSB7 unit 0. Odd numbered spee[Ach links (1, 3, 5 ... 31) associate with MSB7 unit 1.

Note: Speech link numbers 5 to 30 do not appear in the example in step 11. The speech links that associate with MSB7 unit 1 are manual busy.

14 Record the network plane number, network module (pair) number, and network link number for each speech link recorded in step 13.

Note: A JNET example response appears in step 11. In this example, speech link 2 associates with network plane 0, network module number 3, and network link number 28.

15 To access the NET level of the MAP display, type

`>NET`

and press the Enter key.

16 To access the network link level for the first network link that you return to service, type

`>LINKS n`

and press the Enter key.

where

n
is the network module number recorded in step 12

17 To return the first network link to service, type

`>RTS plane_no link_no`

and press the Enter key.

where

Emergency power conservation
Restoring the MSB7 to duplex operation (continued)

plane_no
is the network plane (0 or 1)

link_no
is the network link number

18 Repeat steps 16 and 17 until all the links between the manual busy MSB7 unit and the network return to service. Go to step 26.

19 Determine the speech link numbers associated with the manual busy MSB7 unit. Even numbered speech links associate with unit 0. Odd numbered speech links associate with unit 1.

Note: Speech links 0, 2, 4 and 6 associate with MSB7 unit 0 in the ENET example response in step 11. Speech links 1, 3, 5, and 7 associate with MSB7 unit 1. The speech links associated with MSB7 unit 1 are manual busy.

20 Record the ENET plane number, shelf number, card number, and network link number associated with the speech link. Perform this procedure for each speech link recorded in step 19.

Note: An ENET example response appears in step 11. In this example, speech link 3 associates with ENET plane 1, shelf 0, card 23, and network link number 01.

21 To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

22 To access the MAP display for the ENET card that associates with the first link that you return to service, type

```
>SHELF  shelf_no;  CARD  card_no
```

and press the Enter key.

where

shelf_no
is the ENET shelf number recorded in step 20

card_no
is the ENET card number recorded in step 20

23 To return the first link recorded in step 19 to service, type

```
>RTS   plane_no  LINK  link_no
```

and press the Enter key.

where

plane_no
is the ENET plane number recorded in step 20

link_no
is the network link number recorded in step 20

24 To remove the deload status from the ENET card, type

```
>DELOAD  plane_no  CLEAR
```

and press the Enter key.

Emergency power conservation
Restoring the MSB7 to duplex operation (end)

where

plane_no
is the ENET plane number

25 Repeat steps 22 to 24 for each speech link recorded in step 19. Continue this procedure.

26 To reload the manual busy MSB7 unit, type

```
>PM;LOADPM UNIT  unit_no
```

and press the Enter key.

where

unit_no
is the number of the manual busy unit (0 or 1)

27 To return the manual busy MSB7 unit to service, type

```
>RTS  UNIT  unit_no
```

and press the Enter key.

where

unit_no
is the number of the manual busy unit (0 or 1)

28 Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Restoring the remote oscillator shelf to duplex operation

Application

Use this procedure to restore the remote oscillator shelf (ROS) to duplex operation. Perform this procedure to conserve emergency power after you power down one plane of the ROS.

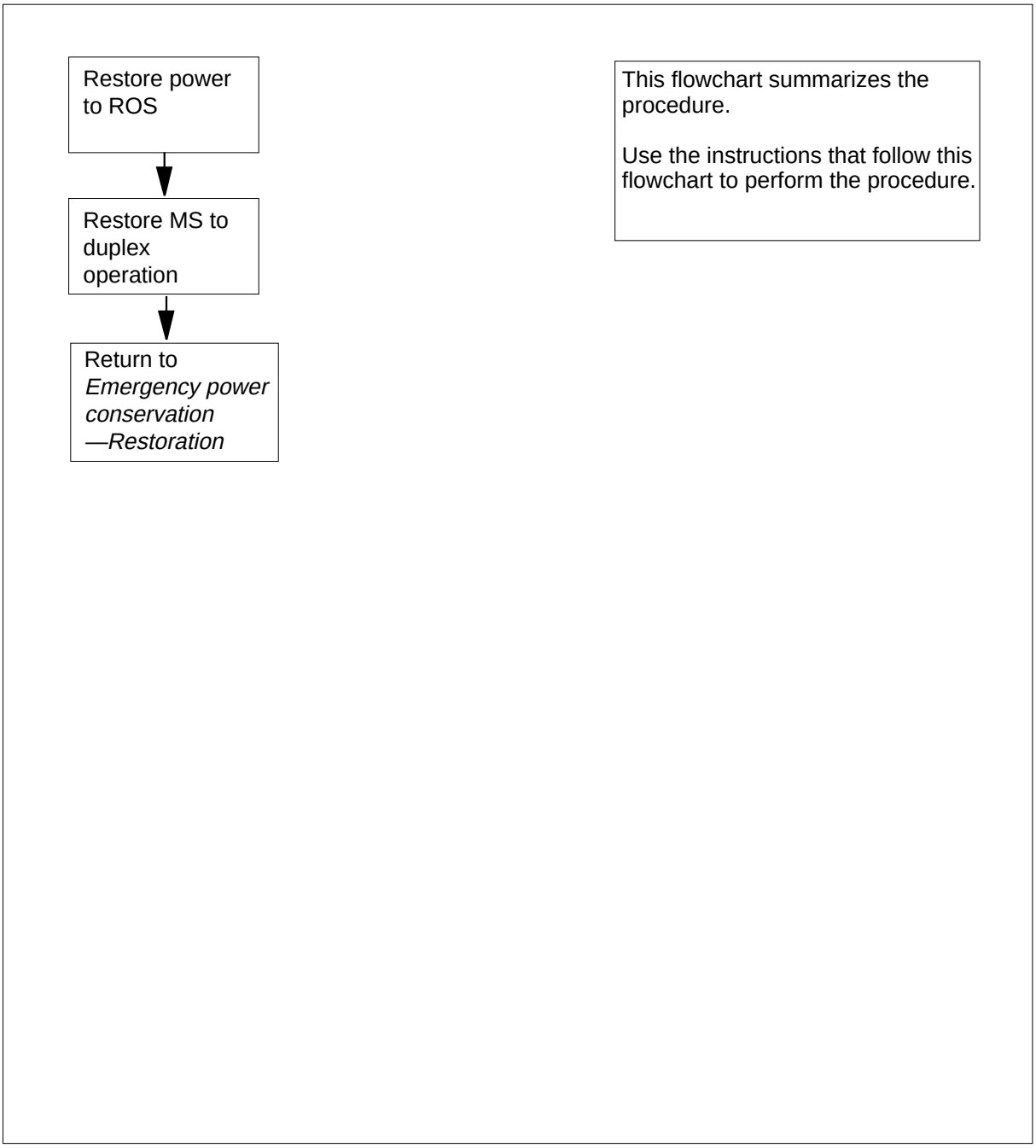
This procedure assumes that you follow the *Emergency power conservation—Shutdown* in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

Action

The following flowchart provides a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

Emergency power conservation
Restoring the remote oscillator shelf to duplex operation (continued)

Summary of Restoring the remote oscillator shelf to duplex operation



Emergency power conservation
Restoring the remote oscillator shelf to duplex operation (end)

Restoring the remote oscillator shelf to duplex operation

CAUTION
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) or the next level of support before you perform this procedure.

CAUTION
Potential loss of service or extended outage
Use this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

WARNING
Static electricity damage
Wear a wrist strap that connects to 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.

At the ROS

1 Power up the half of the remote oscillator shelf that you powered down to conserve emergency backup power.

Note: Slots 1 to 13 associate with message switch (MS) 0. Slots 14 to 26 associate with MS 1.

2 Restore service to the MS that associates with the half of the remote oscillator shelf that you powered up in step 1. Perform the procedure *Restoring the MS to duplex operation* in this document to restore service to the MS.

Emergency power conservation Restoring a SuperNode ENET to duplex operation

Application

Use this procedure to restore a SuperNode enhanced network (ENET) to duplex operation. Perform this procedure after you power down one ENET plane to conserve emergency power.

This procedure assumes that you followed the procedure *Emergency power conservation—Shutdown* to take equipment out of service. This procedure also assumes that all equipment was in normal in-service operation before the need to perform the emergency power conservation procedure occurred.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

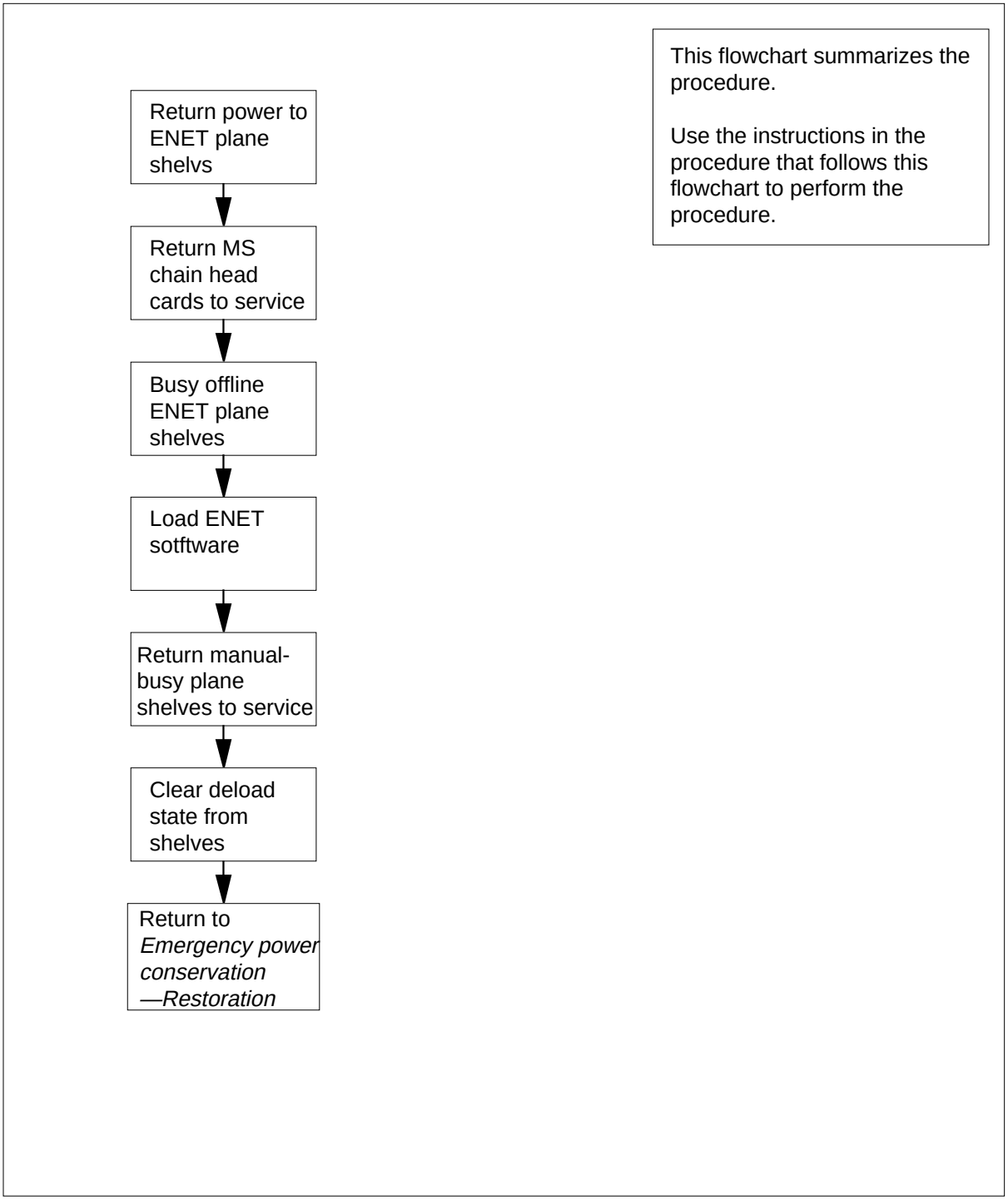
Note: MAP displays in this procedure are for the 128k ENET. Displays for the 64k ENET are identical to the 128k ENET display, shelves 2 and 3 are shown as unequipped (-), as shown in the following example:

Example of a 64k ENET MAP display:

```
ENET     SystemMatrixShelf          0 1 2 3
Plane0Fault .  C . - -
Plane1   .  .  . .- -
```

Emergency power conservation
Restoring a SuperNode ENET to duplex operation (continued)

Summary of Restoring a SuperNode ENET to duplex operation



Emergency power conservation
Restoring a SuperNode ENET to duplex operation (continued)

Restoring a SuperNode ENET to duplex operation

At the ENET cabinet

1

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of equipment.

WARNING
Potential loss of service or extended outage
This procedure restores normal operation after you perform emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The strap protects the cards against static electricity damage.

Make sure that the cooling fans for the ENET cabinets operate.

2 Restore power to each ENET plane shelf that you powered down to conserve emergency power. Power up each of the offline plane shelves as follows:

a At the same time, press up the switches on the faceplates of the power converters in slots 1 and 4.

Note: The LED with a label CONVERTER OFF goes out when you power up each converter.

b At the same time, press up the switches on the faceplates of the power converters in slots 33 and 36.

At the MAP terminal

3 To access the ENET system level, type

```
>MAPCI;MTC;NET;SYSTEM
```

and press the Enter key.

Example of a MAP display

Emergency power conservation
Restoring a SuperNode ENET to duplex operation (continued)

```
SYSTEM
 Shelf    Plane 0                  Plane 1
   00        .                        .
```

4 To identify the message switch card chain that connects to each shelf that was powered down to conserve emergency power, type

>TRNSL plane_no shelf_no

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

shelf_no
is the ENET shelf number (0 to 7)

Example of a MAP response:

```
Request to TRNSL ENET Plane:0 Shelf:00 passed.
ENET Plane:0 Shelf:00 MS:0 and 1 Card:20 Link:00
Port:00
```

5 Note the card number and link number.

6 To access the MS Shelf level of the MAP display, type

>MS;SHELF;CHAIN card_no

and press the Enter key.

where

card_no
is the card number you noted in step 5

7 To return the head card in the associated chain on MS 0 to service, type

>RTS 0 LINK link_no

and press the Enter key.

where

link_no
is the link number you noted in step 5

8 To return the head card in the associated chain on MS 1 to service, type

>RTS 1 LINK link_no

and press the Enter key.

where

link_no
is the link number you noted in step 5

9 Repeat steps 4 to 8 for each plane shelf you powered down to conserve power. When you have finished, return to this point and continue the procedure.

Emergency power conservation
Restoring a SuperNode ENET to duplex operation (continued)

10 To access the network System level of the MAP display, type

>NET;SYSTEM

and press the Enter key.

Example of a MAP display:
SYSTEM
ShelfPlane 0Plane 1
00 O
01 O

11 Determine the reason the ENET shelves are offline.

If	Do
you powered down all the offline ENET plane shelves to conserve emergency power	step 14
any ENET shelves are offline for reasons other than to conserve emergency power	step 12

12 To manually busy the first offline plane shelf, type

>BSY plane_no shelf_no

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

shelf_no
is the ENET shelf number (0 to 7)

MAP response:
Request to MAN BUSY ENET Plane:0 Shelf:00 submitted.
Request to MAN BUSY ENET Plane:0 Shelf:00 passed.

13 Repeat step 12 for each plane shelf that you powered down to conserve emergency power. Go to step 15.

14 To manually busy all offline shelves, type

>BSY ALL OFFL

and press the Enter key.

15 Determine if you manually busied all ENET plane shelves when you powered down the shelves to conserve emergency power. Load the shelves as a

Emergency power conservation
Restoring a SuperNode ENET to duplex operation (continued)

group if you powered down all plane shelves to conserve emergency power. Load the shelves separately if the shelves are manual busy for other reasons.

If you want to load	Do
ENET shelves separately	step 16
all ENET plane shelves at the same time	step 19

16 To load software into the selected shelf, type

>LOADEN plane_no shelf_no

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

shelf_no
is the ENET shelf number (0 to 7)

MAP response:
WARNING Any software load in the ENET will be destroyed.
Please confirm ("YES" or "NO"):

Load software into the selected plane shelf by typing

17 To confirm the command type

>YES

and press the Enter key.

18 Repeat steps 16 and 17 for each shelf that you powered down to conserve emergency power. Go to step 20.

19 To load software into all manual busy plane shelves, type

>LOADENALL NOPROMPT NOWAIT

and press the Enter key.

20 Determine if you manually busied all ENET plane shelves when you powered down the shelves to conserve emergency power. Load the shelves as a group if you powered down all plane shelves to conserve emergency power. Load the shelves separately if the shelves are manual busy for other reasons.

If you want to return to service	Do
all ENET plane shelves at the same time	step 21
shelves separately	step 25

21 To return all manual busy plane shelves on the plane to service, type

>RTS plane_no ALL

Emergency power conservation
Restoring a SuperNode ENET to duplex operation (continued)

and press the Enter key.

where

plane_no
is the network plane number (0 or 1)

MAP response:
Request to RTS ENET Plane:0 Shelf:00 submitted.
Request to RTS ENET Plane:0 Shelf:00 passed.

22 To manually busy all matrix cards in one plane, type

`>MATRIX;BSY plane_no ALL`

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

23 To return all matrix cards in one plane to service, type

`>RTS plane_no ALL`

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

24 Go to step 31.

25 To return a single shelf to service, type

`>RTS plane_no shelf_no`

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

shelf_no
is the ENET shelf number (0 to 7)

MAP response:
Request to RTS ENET Plane:0 Shelf:00 submitted.
Request to RTS ENET Plane:0 Shelf:00 passed.

26 Repeat step 25 for each plane shelf powered down to conserve power. When you have finished, continue this procedure.

27 To access the Shelf level for the first ENET shelf you returned to service, type

`>SHELF shelf_no`

and press the Enter key.

where

shelf_no
is the ENET shelf number (0 to 7)

Emergency power conservation
Restoring a SuperNode ENET to duplex operation (continued)

28 To manually busy all matrix cards in the shelf, type

>BSY plane_no ALL

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

29 To return to service all matrix cards in the shelf, type

>RTS plane_no ALL

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

30 Repeat steps 27 to 29 for each ENET shelf you powered down to conserve power. When you have finished, continue this procedure.

31 To access the network System level of the MAP display, type

>NET;SYSTEM

and press the Enter key.

32 The next action depends on how you want to clear the deload condition.

If you want to clear the deload condition on	Do
ENET shelves separately	step 33
all ENET plane shelves at the same time	step 35

33 To clear the deload condition on one ENET plane shelf, type

>DELOAD plane_no shelf_no CLEAR

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

shelf_no
is the ENET shelf number (0 to 7)

MAP response:
Request to CLEAR DELOAD ENET Plane:0 Shelf:00 submitted.
Request to CLEAR DELOAD ENET Plane:0 Shelf:00 passed.

34 Repeat step 33 for each plane shelf powered down to conserve emergency backup power.

Emergency power conservation
Restoring a SuperNode ENET to duplex operation (end)

35 To clear the deload condition on cards in the plane that you powered down to conserve emergency power, type

`>DELOAD plane_no CLEAR`

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

MAP response:
Request to CLEAR DELOAD ENET Plane:0 submitted.
Request to CLEAR DELOAD ENET Plane:0 passed.

36 Return to the procedure *Emergency power conservation—Restoration* in this document and proceed as directed.

Emergency power conservation
Restoring a SuperNode SE ENET to duplex operation

Application

Use this procedure to restore a SuperNode SE enhanced network (ENET) to duplex operation. This procedure applies to SuperNode SE 16k and 32k ENET. Perform this procedure after you power down one ENET plane to conserve emergency power.

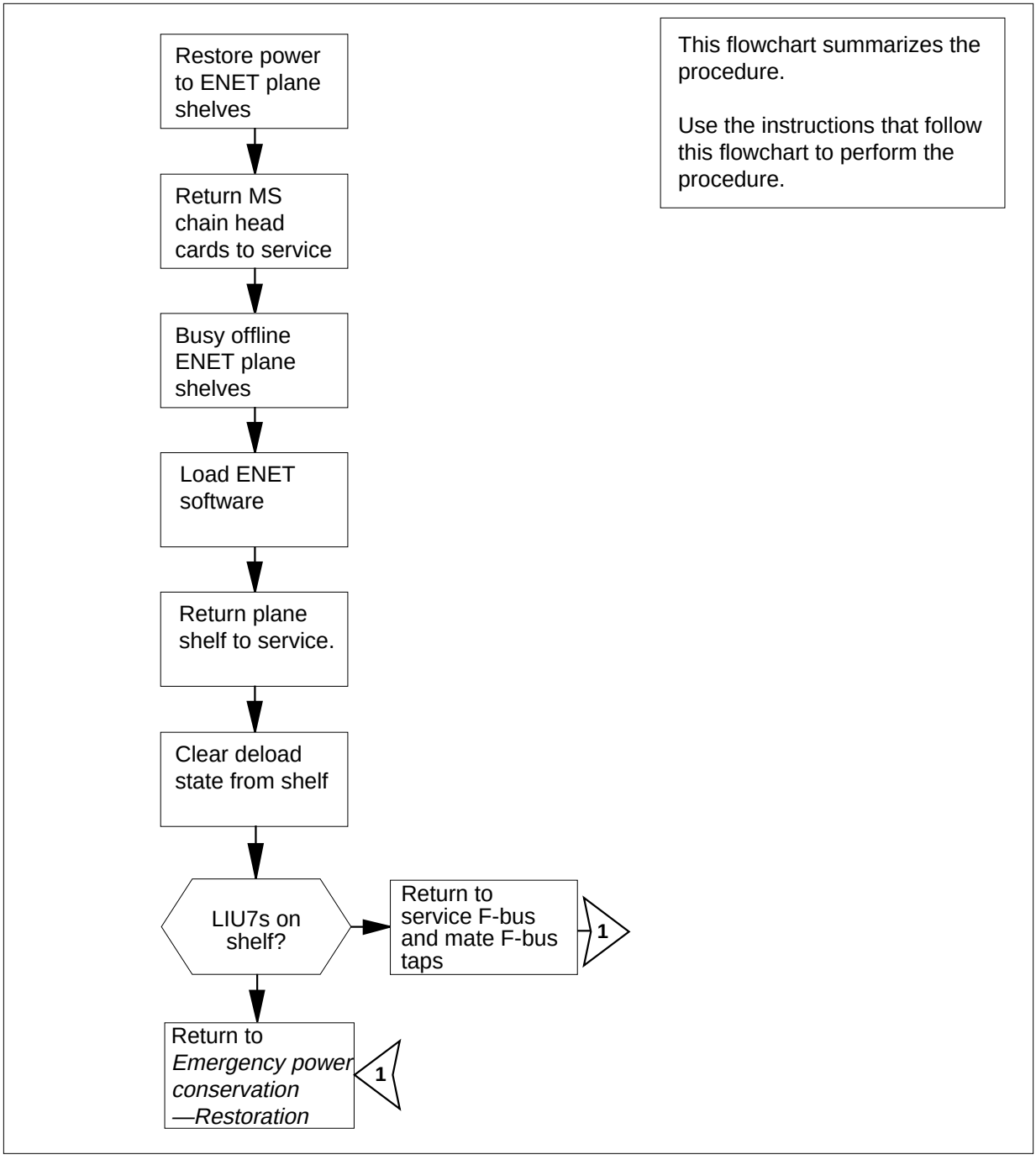
This procedure assumes that you followed the procedure *Emergency power conservation—Shutdown* to take equipment out of service. This procedure also assumes that all equipment was in normal in-service operation before the need to perform the emergency power conservation procedure occurred.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

Emergency power conservation
Restoring a SuperNode SE ENET to duplex operation (continued)

Summary of Restoring a SuperNode SE ENET to duplex operation



Emergency power conservation
Restoring a SuperNode SE ENET to duplex operation (continued)

Restoring a SuperNode SE ENET to duplex operation

At the ENET shelf

1

WARNING
Potential extended equipment outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of equipment.

WARNING
Potential loss of service or extended outage
This procedure restores normal operation after you perform emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The strap protects the cards against static electricity damage.

Make sure that the cooling fans for the ENET cabinet operate.

2 The next action depends on which ENET plane you powered down to conserve power.

If you shut down	Do
plane 0 of a 16k ENET	step 3
plane 1 of a 16k ENET	step 5
Either plane of a 32K ENET	step 7

Emergency power conservation
Restoring a SuperNode SE ENET to duplex operation (continued)

At the ENET shelf

3 At the same time, press up the switches on the faceplates of the power converters in slots 1 and 4.

Note: The LED with a label CONVERTER OFF goes out when you power up each converter.

4 Go to step 8.

At the ENET shelf

5 At the same time, press up the switches on the faceplates of the power converters in slots 33 and 36.

Note: The LED with a label CONVERTER OFF goes out when you power up each converter.

6 Go to step 8.

At the ENET shelf

7 Restore power to the ENET shelf you powered down to conserve emergency power. Power up the offline plane shelf as follows:

a At the same time, press up the switches on the faceplates of the power converters in slots 1 and 4.

Note: The LED with a label CONVERTER OFF goes out when you power up each converter.

b At the same time, press up the switches on the faceplates of the power converters in slots 33 and 36.

At the MAP terminal

8 To access the ENET system level, type

`>MAPCI;MTC;NET;SYSTEM`

and press the Enter key.

Example of a MAP display

```
SYSTEM
 Shelf    Plane 0                  Plane 1
   00        .                        .
```

9 To identify the message switch card chain that connects to the shelf that was powered down to conserve emergency power, type

`>TRNSL  plane_no  shelf_no`

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

shelf_no
is the ENET shelf number (0 to 1)

Emergency power conservation
Restoring a SuperNode SE ENET to duplex operation (continued)

Example of a MAP response:
Request to TRNSL ENET Plane:0 Shelf:00 submitted.
Request to TRNSL ENET Plane:0 Shelf:00 passed.
ENET Plane:0 Shelf:00 MS:0 and 1 Card:05 Link:00 Port:000

10 Note the card number and link number.

11 To access the MS Shelf level of the MAP display, type

`>MS;SHELF;CHAIN card_no`

and press the Enter key.

where

card_no
is the card number you noted in step 10

12 To return the head card in the associated chain on MS 0 to service, type

`>RTS 0 LINK link_no`

and press the Enter key.

where

link_no
is the link number you noted in step 10

13 To return the head card in the associated chain on MS 1 to service, type

`>RTS 1 LINK link_no`

and press the Enter key.

where

link_no
is the link number you noted in step 10

14 To access the network System level of the MAP display, type

`>NET;SYSTEM`

and press the Enter key.

Example of a MAP display:
SYSTEM
ShelfPlane 0Plane 1
00 O

15 To manually busy the shelf that you powered down to conserve power, type

`>BSY plane_no shelf_no`

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

shelf_no
is the ENET shelf number (0 or 1)

MAP response:

Emergency power conservation
Restoring a SuperNode SE ENET to duplex operation (continued)

Request to MAN BUSY ENET Plane:0 Shelf:00 submitted.
Request to MAN BUSY ENET Plane:0 Shelf:00 passed.

16 To load software into the shelf, type

>LOADEN plane_no shelf_no

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

shelf_no
is the ENET shelf number (0 to 7)

MAP response:
WARNING Any software load in the ENET will be destroyed.
Please confirm ("YES" or "NO"):

17 To confirm the command, type

>YES

and press the Enter key.

18 To return the shelf to service, type

>RTS plane_no shelf_no

and press the Enter key.

where

plane_no
is the network plane number (0 or 1)

shelf_no
is the ENET shelf number (0 or 1)

MAP response:
Request to RTS ENET Plane:0 Shelf:00 submitted.
Request to RTS ENET Plane:0 Shelf:00 passed.

19 To access the ENET shelf level, type

>SHELF shelf_no

and press the Enter key.

where

shelf_no
is the ENET shelf number (0 or 1)

MAP response:
Request to RTS ENET Plane:0 Shelf:00 submitted.
Request to RTS ENET Plane:0 Shelf:00 passed.

20 To manually busy all matrix cards, type

>BSY plane_no ALL

and press the Enter key.

Emergency power conservation
Restoring a SuperNode SE ENET to duplex operation (continued)

where

plane_no
is the network plane number (0 or 1)

21 To return all matrix cards to service, type

```
>RTS  plane_no  ALL
```

and press the Enter key.

where

plane_no
is the network plane number (0 or 1)

22 To access the Network level, type

```
>NET
```

and press the Enter key.

23 To clear the deload condition on cards on the shelf that you powered down to conserve emergency power, type

```
>DELOAD  plane_no  CLEAR
```

and press the Enter key.

where

plane_no
is the ENET plane number (0 or 1)

MAP response:
Request to CLEAR DELOAD ENET Plane:0 Shelf:00 submitted.
Request to CLEAR DELOAD ENET Plane:0 Shelf:00 passed.

24 Determine if a link interface unit (LIU) is present on the enhance network and Interface (ENI) shelf in the single core cabinet (SCC). If an LIU is present, the LIUs reside in ENI shelf slots 7 to 9, and 30 to 32.

If an LIU is	Do
present	step 26
not present	step 28

25 To access the F-bus level, type

```
>MS;SHELF;CARD  12
```

and press the Enter key.

26 To return to service the F-bus connected the ENET plane that you powered down, type

```
>RTS  ms_no  FBUS
```

and press the Enter key.

where

Emergency power conservation
Restoring a SuperNode SE ENET to duplex operation (end)

ms_no
is the MS number (0 or 1). Enter 0 if you powered down plane 0 of the ENI shelf. Enter 1 if you powered down plane 1 of the ENI shelf.

27 To return the tap on the mate F-bus to service, type

```
>RTS  ms_no  TAP  tap_no
```

and press the Enter key.

where

ms_no
is number of the MS (0 or 1) that controls the mate F-bus. MS 0 controls the F-bus for plane 0. MS 1 controls the F-bus for plane 1.

tap_no
is the F-bus tap number. If the mate F-bus is controlled by MS 0, enter a tap number of 0. If the mate F-bus is controlled by MS 1, enter a tap number of 11.

28 Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation Shutdown

Application

Use this procedure to conserve emergency backup power on a Digital Multiplex System (DMS) SuperNode switch without loss of subscriber service. Perform this procedure during an extended commercial power outage.

This procedure reduces the loss of power on emergency batteries to a minimum. The procedure shuts down equipment that you do not require to maintain subscriber service. The procedure specifies equipment shutdown in ascending order based on how the shutdown affects system reliability. Equipment shutdown can begin with the spare printers that are not as necessary. Equipment shutdown can end with the inactive computing module (CM) plane that is necessary.

The procedure consists of a top-level procedure and a number of subprocedures. The top-level procedure in this document is *Emergency power conservation—shutdown*. This procedure specifies the equipment and the order of the equipment that you power down without the loss of service. The top-level procedure refers to the subprocedures that provide instructions to power down separate elements of the switch. The table of contents lists the subprocedures.

Usage notes

Note the configuration and condition of your switch and the expected duration of the power outage. Note the quantity of reserve power available during this procedure. Proceed as follows:

- Complete as much of this procedure as necessary. For example, if you anticipate a restoration of power, you can leave major subsystems that operate in duplex mode. Major subsystems include the message switch (MS) and the CM. For system reliability, you can leave both units in service on peripheral modules required for emergency service lines.
- This procedure can instruct you to busy and power down one plane or unit of a subsystem. The mate plane or unit you leave in service must be problem free and must operate normally.
- If possible, take the same unit or plane number out of service on each subsystem. For example, remove enhanced network (ENET) plane 0, link interface module (LIM) unit 0, and MS 0 from service. This action decreases the possibility of error and reduces recovery time.

  Note: A warning prompt indicates a loss of service when you attempt to busy a subsystem unit or plane. Do not proceed if you receive this

Emergency power conservation
Shutdown (continued)

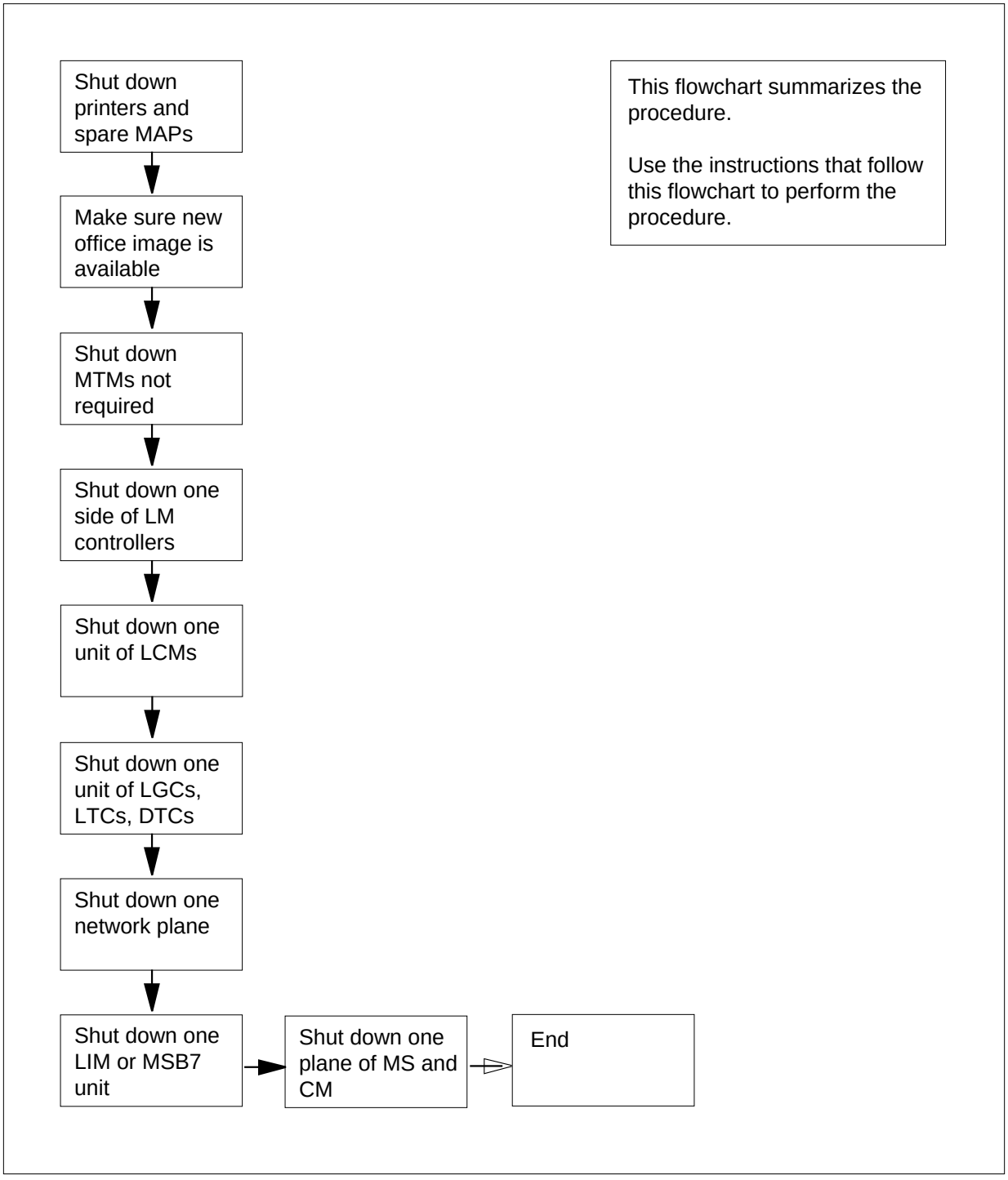
prompt. Clear the problem. Busy the mate unit or plane, or leave both planes or units of that subsystem in service.

Action

The following flowchart provides a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation Shutdown (continued)

Summary of Emergency power conservation - Shutdown



Emergency power conservation
Shutdown (continued)

Emergency power conservation—Shutdown

WARNING
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency-Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

WARNING
Potential loss of service or extended outage
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

At your current location

1 Read the section Usage notes in this document.

2 Use office records to identify the power inverters that supply the MAPs and printers for the switch.

3 Power off the inverters identified in step 2. Do not power down the inverter that supplies the operator MAP terminal and one printer connected to IOC 0.

At the MAP terminal

4 If a total shutdown is necessary, confirm that a new office image is available to reload the switch. To confirm that a new office image is available to reload the switch, type

```
>AUTODUMP   STATUS
```

and press the Enter key.

Example of a MAP response:

Emergency power conservation Shutdown (continued)

```
Successful Image: S990218220590_CM
Taken: 1999/02/18 22:05:08.952 THU.
On Volume: S00DIMAGE

Last Image: S990218220590_CM
Taken: 1999/02/18 22:05:08.952 THU.
On Volume: S00DIMAGE

ISN Auto Imaging was last run on 1999/02/18 23:22:10.619 THU.
0 images were requested by PRSM.
0 images were taken successfully.
0 images failed.
0 images were aborted.

The latest ISN Auto Imaging history file is S990218232HISISN on
S00DIMAGE.

SCHEDULED–Image Dump is ON.

RETAIN option is OFF.

Next scheduled dump is FRIDAY at 22:00 hours.
Next image to be dumped S01DIMAGE.
```

If a recent office image	Do
is available	step 6
is not available	step 5

5 Use the procedure *Recording an office image on an SLM disk* in *Routine Maintenance Procedures* to take an office image.

6 Power down all maintenance trunk modules in the office. Do not power down maintenance trunk modules that contain cards that affect service. To power down all maintenance trunk modules, perform the procedure *Emergency shutdown of maintenance trunk modules* in this document.

Note: Cards that affect service include digitone receiver cards (NT2X48), and centralized-automatic message accounting (CAMA) cards(NT2X66 and NT2X66). Cards that affect service also include digital-recorded announcement machine (DRAM) cards.

7 Power down one line module controller (NT2X14 shelf) in each double-bay line module pair in the office. To power down a NT2X14 shelf, perform the procedure *Emergency shutdown of one half a line module pair* in this document.

8 Power down one unit of all the line concentrating modules (LCM) in the office. To power down an LCM, perform the procedure *Emergency shutdown of one unit of LCMs* in this document.

Emergency power conservation Shutdown (end)

9 Power down one unit of each of the following:

- all line group controllers (LGC)
- all line trunk controllers (LTC)
- all digital trunk controllers (DTC)

To power down one LGC, LTC and DTC, perform the procedure *Emergency shutdown of one LGC, LTC and DTC unit* in this document.

10 Power down one plane of all the network shelves in the office as follows:

- for ENET, perform the procedure *Emergency shutdown of one enhanced network plane* in this document
- for JNET, perform the procedure *Emergency shutdown of one junctored network plane* in this document

11 If you remove power from the whole network frame in step 10 perform the following procedure. To remove the appropriate power fuses from the PDC, power down the cooling fans for the frame.

12 Busy and power down one local message switch in the link peripheral processor (LPP) or enhanced link peripheral processor (ELPP). To busy and power down an LPP, perform the procedure *Emergency shutdown of one LIM unit on each LPP* in this document. To busy and power down an ELPP, perform the procedure *Emergency shutdown of one LIM unit on each ELPP* in this document.

13 Power down one unit of all CCS7 message switch and buffers (MSB7) in the office. To power down an MSB7, perform the procedure *Emergency shutdown of one unit of MSB7s* in this document.

14 Power down one message switch plane. To power down one message switch plane, perform the procedure *Emergency shutdown of one DMS SuperNode MS plane* in this document.

15 If your office has a remote oscillator (Bliley) shelf (NT3X9507), perform this procedure. Busy the clock that associates with the MS number you powered down in step 14. To busy the MS clock, perform the procedure *Emergency shutdown of one remote oscillator shelf plane* in this document.

16 To power down one plane of the CM, perform the procedure *Emergency shutdown of one DMS SuperNode CM plane* in this document.

17 The procedure is complete.

Emergency shutdown of DMS system

Application

Use this procedure to power down a DMS SuperNode switch as follows:

- in the event of an emergency, for example flooding or fire
- to protect equipment if the available functioning voltage at the power distribution center (PDC) falls below -43.75 V dc
- when instructed by the next level of support

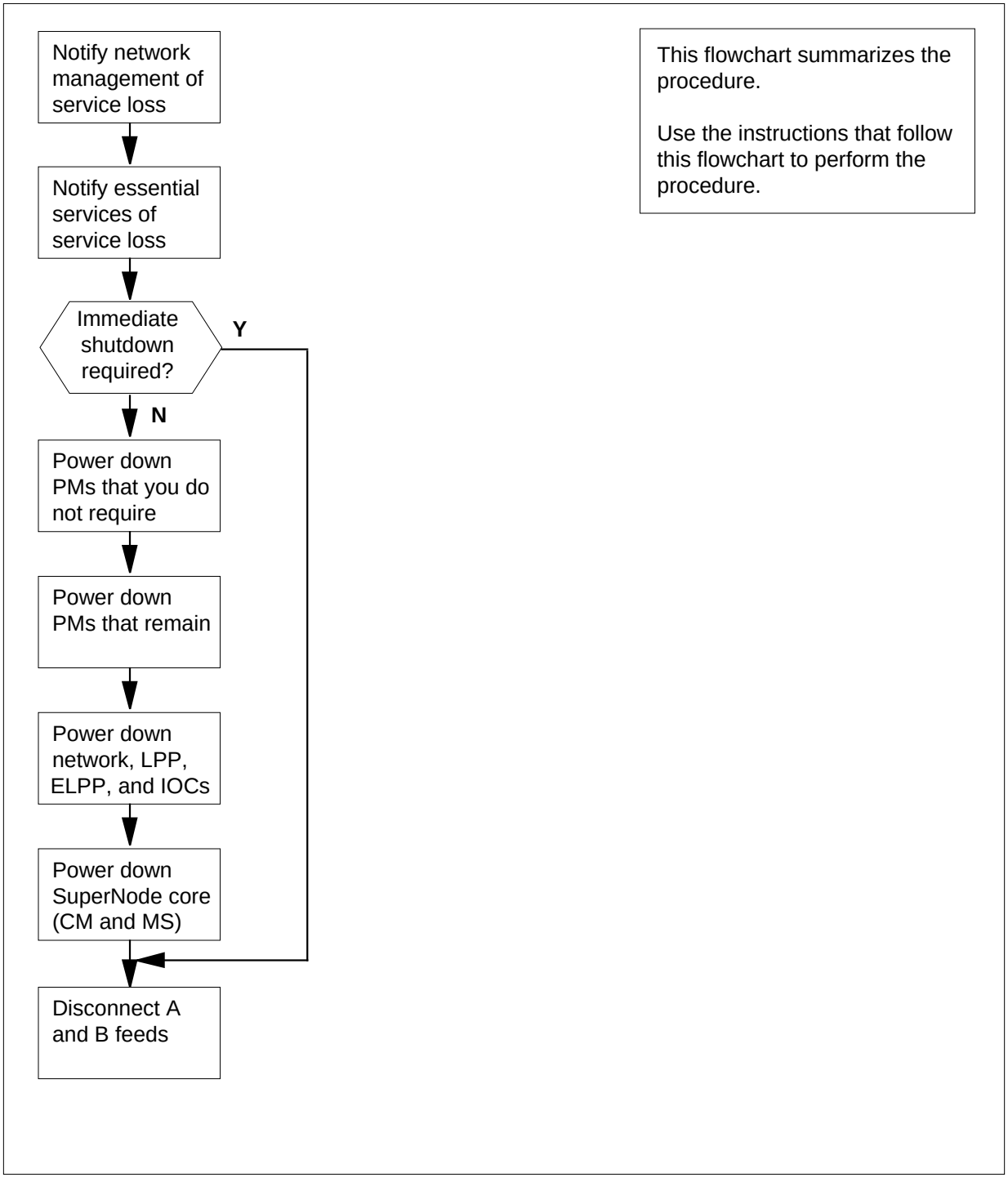
Do not use this procedure to conserve emergency backup power. To conserve emergency backup power, perform the procedure *Emergency power conservation—shutdown* in this document. That procedure powers down elements of the switch that you do not require.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency shutdown of DMS system (continued)

Summary of Emergency shutdown of DMS system



Emergency shutdown of DMS system (continued)

Emergency shutdown of DMS system

At your Current Location

1

WARNING
This procedure results in a complete loss of subscriber service
Nortel recommends that you contact Emergency-Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

Notify network management personnel of the service interruption that will occur.

2 Notify emergency services of the service interruption that will occur. Emergency services include police, fire, and ambulance.

3 Proceed as follows:

If	Do
dangerous environmental conditions cause you to power down the switch immediately	step 4
you have a minimum of 30 min to power down the switch in the correct order	step 6

4 To power off the PDCs, disconnect the A and B feeds at the power room.

Note: Perform the procedure in step 4 to power down the switch only if necessary. Electricity can arc when you perform this procedure.

5 Go to step 18.

6 Use office records to identify the peripheral modules that host emergency services like fire, police and medical assistance. Perform this procedure to power down these peripherals last.

7 Power down the power converter for each maintenance trunk module shelf. Do not power down the power converters required for emergency service lines. You identified the power converters for emergency service lines in step 6.

Note: The line modules and digital carrier modules are older peripheral modules. These older peripherals use universal tone receivers. The universal tone receivers are in the maintenance trunk modules.

8 Power down the inverters for all MAPs and printers, except the operator MAP terminal and one printer.

9 Power down the power converters on all digital trunk controllers and trunk modules, except the power converters for emergency service

Emergency shutdown of DMS system (end)

communications. You identified the power converters for emergency service lines in step 6.

10 Power down the power converters on each line module shelf, except those identified in step 6 that host emergency service lines.

11 Power down the power converters on all line concentrating modules, except those identified in step 6 that host emergency service lines.

12 Power down the power converters on all line group controllers and line trunk controllers, except the power converters for emergency service communications. You identified the power converters for emergency service lines in step 6.

13 Power down all the peripheral modules that remain. Power down the required service PMs last.

14 Power down each network module (NM), link peripheral processor (LPP), enhanced link peripheral processor (ELPP), and input/output controller (IOC).

Note: Unseat and reseat the power converters to power down the ENET, LPP, and ELPP.

15 Power down all the devices that remain. Power down the inverter that supplies the operator MAP terminal, external printers, tape drives, or disk drives.

16 Power down the computing module (CM) and message switch (MS). Power down the power converters to power down one plane. Unseat and reseat the power converters to power down the second plane.

17 Disconnect the A and B feeds at the power room to power down each power distribution center (PDC).

18 The procedure is complete.

Emergency power conservation
Emergency shutdown of maintenance trunk modules

Application

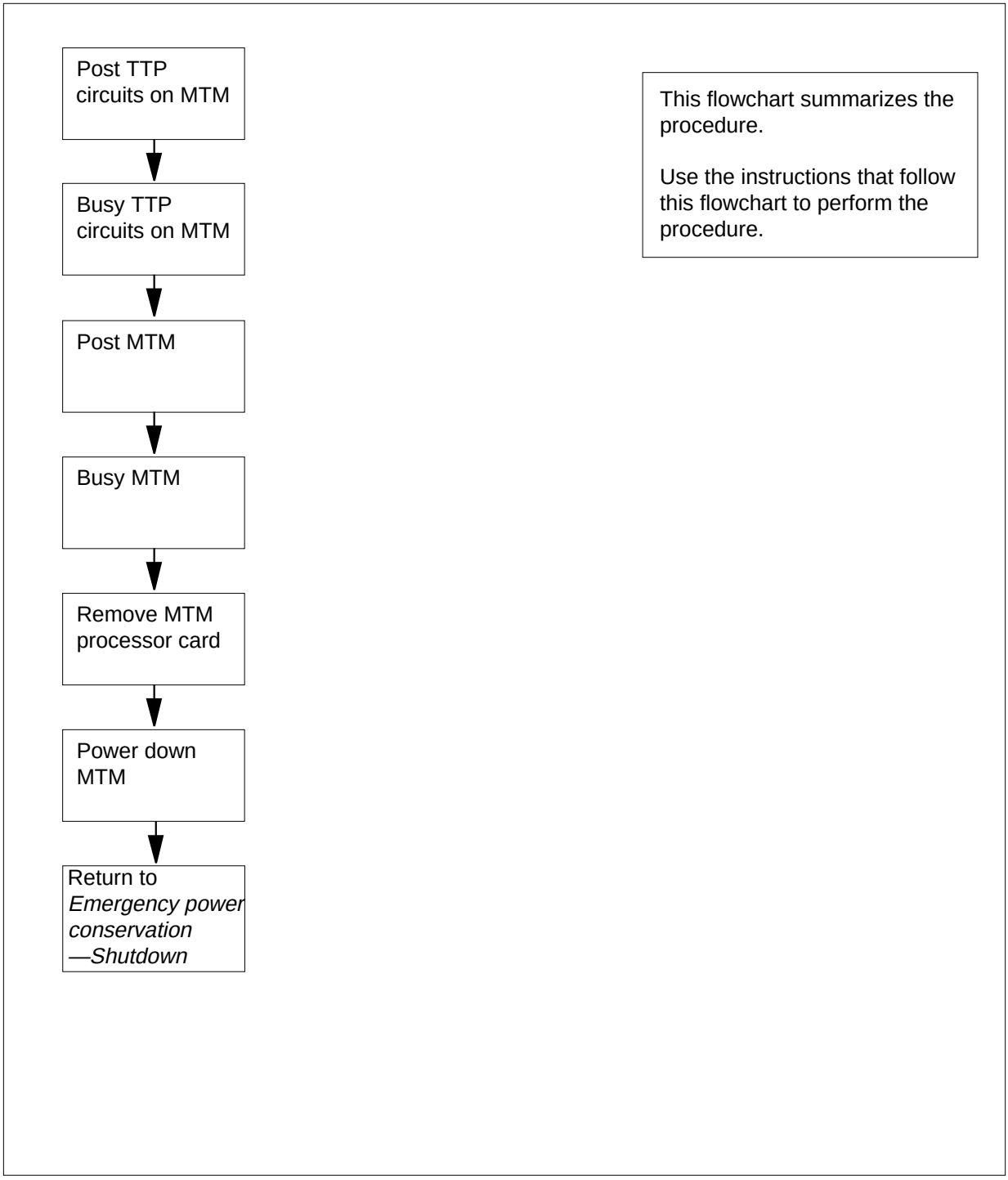
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down maintenance trunk modules (MTM) that do not contain circuits that affect service.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of maintenance trunk modules (continued)

Summary of Emergency shutdown of maintenance trunk modules



Emergency power conservation
Emergency shutdown of maintenance trunk modules (continued)

Emergency shutdown of maintenance trunk modules

At the MAP terminal

1

WARNING
Potential service interruption or extended outage
Nortel recommends that you contact Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

WARNING
Potential loss of service or extended outage
Use this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the TTP level of the MAP display, type

>MAPCI;MTC;TRKS;TTP

and press the Enter key.

2 To post the circuits that associate with the MTM that will shut down, type

>POST P MTM pm_no

and press the Enter key.

where

pm_no
is the PM identification number (0 to 999)

Example of a MAP response:

```
   LAST CKT = 27
   POST CKT IDLED
   SHORT CLLI IS: OTDA00
   OK, CKT POSTED

POST    20  DELQ        BUSY Q      DIG
TTP 6-006
CKT TYPE    PM NO.  COM LANG    STA S R DOT TE R
OG  MF TM8 1 0  OTWAON23DA00 2001   LO
                        P_IDL
```

3 To manually busy all circuits that associate with the MTM, type

>BSY ALL

Emergency power conservation
Emergency shutdown of maintenance trunk modules (continued)

and press the Enter key.

4 To access the PM level of the MAP display, type

>PM;POST MTM pm_no

and press the Enter key.

where

pm_no
is the PM identification number (0 to 999)

```
         SysB     ManB     OffL     CBsy     ISTb     InSv
PM         0        2        2        0        7       21
MTM        0        0        1        0        0        6

MTM     0     InSv
```

5 To manually busy the MTM, type

>BSY

and press the Enter key.

At the shelf

6

WARNING
Static electricity damage
When you handle circuits cards, wear a wrist strap that connects to a wrist-strap grounding point. A grounding point is on the frame supervisory panel (FSP) or the modular supervisory panel (MSP). The wrist strap protects the cards against static electricity damage.

WARNING
PM shelf failure
Unseat the NT0X70 processor and memory circuit card before you power down the PM shelf. A firmware error will occur if you do not unseat the NT0X70 processor and memory circuit card.

Unseat the NT0X70 processor card.

7 Set the handle of the PWR switch in a downward position on the NT2X09 power converter in slot 17.

8 Set the handle of the PWR switch in a downward position on the NT2X70 power converter in slot 20.

Emergency power conservation
Emergency shutdown of maintenance trunk modules (end)

9 Repeat steps 1 to 8 to power down each MTM.

10 Return to the *Emergency power conservation—Shutdown* procedure in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one DMS SuperNode CM plane

Application

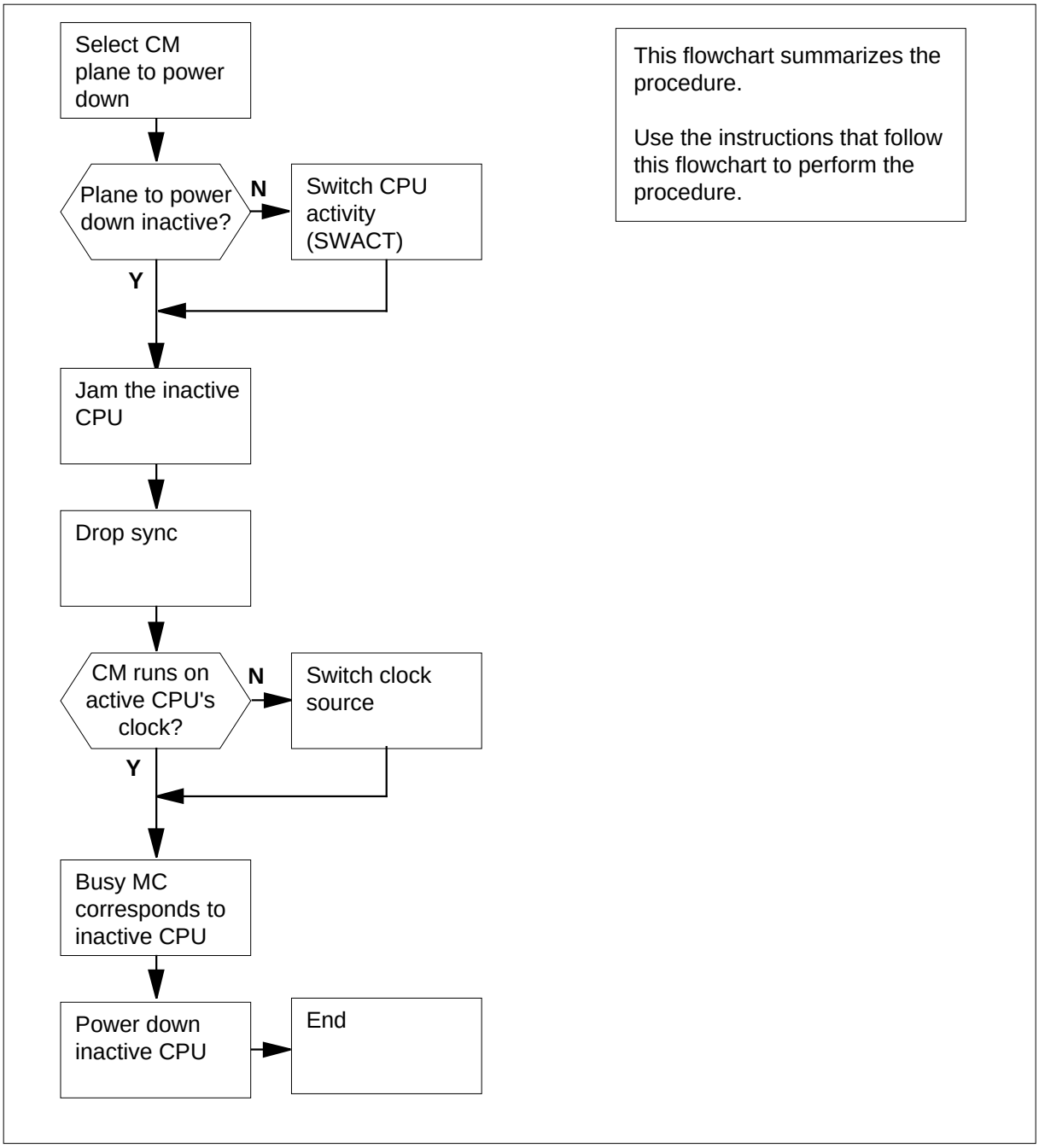
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one computing module (CM) plane.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one DMS SuperNode CM plane (continued)

Summary of Emergency shutdown of one DMS SuperNode CM plane



Emergency power conservation
Emergency shutdown of one DMS SuperNode CM plane (continued)

Emergency shutdown of one DMS SuperNode CM plane

CAUTION
Potential service interruption or extended outage
Nortel recommends that you contact Emergency Technical Assistance Services (ETAS) or your next level of support before you perform this procedure.

CAUTION
Potential loss of service or extended outage
Perform this procedure only to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

At the MAP terminal

1 To access the CM level of the MAP display, type

`>MAPCI;MTC;CM`

and press the Enter key.

Example of a MAP diaplay

```
CM  Sync  Act  CPU0  CPU1 Jam Memory CMMnt  MC  PMC
 0   no  cpu 1   .     .   no   .     .      .   .
```

2 Determine the central processing unit (CPU) that is active. The active CPU appears under the header Act on the MAP display.

3 Determine the state of the computing module planes (cpu 0 and cpu1) before you proceed. (A dot (•) under the corresponding CPU header on the MAP display indicates a fault free CPU.)

If	Do
both CPU planes are fault free	step 7
the inactive CPU has a fault, and the active CPU is fault free	step 7
the active CPU has a fault, and the inactive CPU is fault free	step 5

Emergency power conservation
Emergency shutdown of one DMS SuperNode CM plane (continued)

If	Do
both CPU 0 and CPU 1 have faults	step 4

4 Do not continue this procedure until you clear the faults on a minimum of one of the CPUs. To clear the faults you must clear the correct CM alarms. Go to step 2 when a minimum of one of the CPUs is fault free.

5 To switch activity, type

>SWACT

and press the Enter key.

Example of a MAP display

```
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"):
```

6 To confirm the command, type

>YES

and press the Enter key.

At the CM reset terminal for the inactive CPU

7

WARNING
Loss of service
Make sure that you do not jam the active CPU. A cold restart occurs if you jam the active CPU while the CM is out of sync. 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)
```

8 To confirm the command, type

>YES

and press the Enter key.

Emergency power conservation
Emergency shutdown of one DMS SuperNode CM plane (continued)

RTIF response

```
JAM DONE
```

At the MAP terminal

9 To drop synchronization, type

>DPSYNC

and press the Enter key.

Example of a MAP display

```
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”):
```

10 To confirm the command, type

>YES

and press the Enter key.

11 Wait until A1 flashes on the reset terminal for the inactive CPU.

Note: Allow 5 min for A1 to begin to flash.

12 To determine if the CM runs on the clock of the active CPU

>INSYNC

and press the Enter key.

Example of a MAP display:

```
CPU pair is NOT insync, CPU 0 is active.
CM is running on active CPU clock.

Memory Error Correction is ENABLED.

The inactive CPU IS Jammed.
```

If the CM	Do
runs on the inactive clock	step 13
runs on the active clock	step 14

13 To run the CM on the clock of the active CPU, perform the procedure *Switching the clock source* in *Card Replacement Procedures*. Complete the procedure and return to this point.

14 To access the MC level of the MAP display, type

>MC

Emergency power conservation
Emergency shutdown of one DMS SuperNode CM plane (continued)

and press the Enter key.

Example of a MAP display

```
MC 0    MC 1
 .       .
```

15

WARNING
Loss of service
Make sure that you busy the message controller that corresponds to the inactive CPU. A warm restart occurs if you power down the plane with the wrong MC busied.

To manually busy the MC that corresponds to the inactive CPU, type

>BSY mc_number

and press the Enter key.

where

mc_number
is the number of the MC (0 or 1) on the inactive side

Example of a MAP display:

```
Maintenance action submitted.
MC busied OK.
```

Emergency power conservation
Emergency shutdown of one DMS SuperNode CM plane (end)

At the CM shelf

16

WARNING
Static electricity damage
Wear a wrist strap that connects to 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.

WARNING
Possible loss of service
Make sure that the CM runs on the active CPU clock. A cold restart or a system image reload can occur if you power down the inactive side of the CM while the CM runs on the clock of the inactive CPU.

Power down the inactive CPU as follows:

- Press down and release the power switch on the faceplate of the NT9X30 power converter. The faceplate of the NT9X30 power converter is on the inactive side of the CM shelf.

  Note: Slots 4F to 6F contain the power converter for CPU 0. Slots 36F to 38F contain the power converter for CPU 1.

- Press down and release the power switch on the faceplate of the NT9X31 power converter. The faceplate of the NT9X31 power converter is on the inactive side of the CM shelf.

  Note: Slots 1F to 3F contain the power converter for CPU 0. Slots 33F to 35F contain the power converter for CPU 1.

17 The procedure is complete.

Emergency power conservation
Emergency shutdown of one DMS SuperNode MS plane

Application

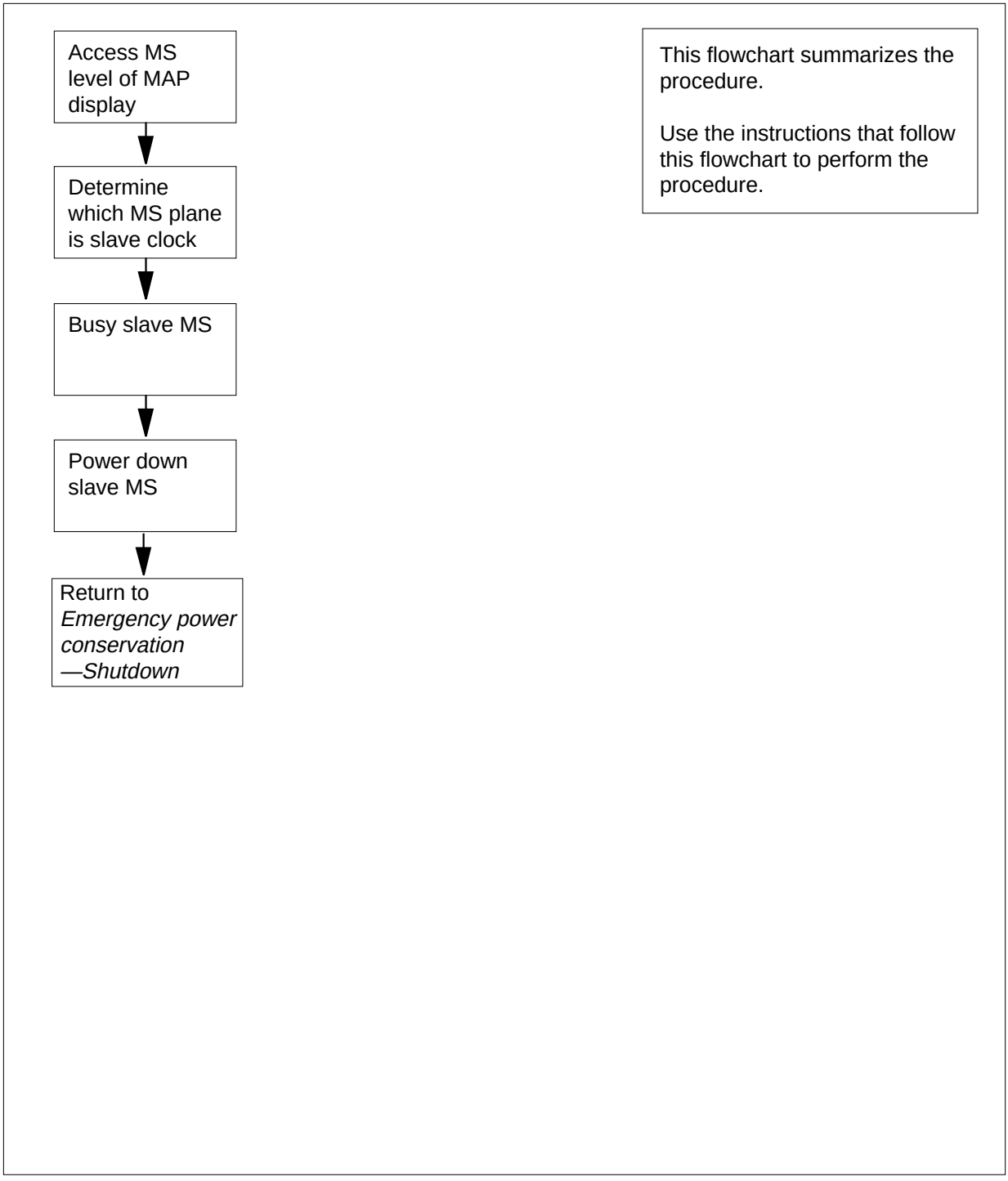
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one message switch (MS) shelf.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one DMS SuperNode MS plane (continued)

Summary of Emergency shutdown of one DMS SuperNode MS plane



Emergency power conservation
Emergency shutdown of one DMS SuperNode MS plane (continued)

Emergency shutdown of one DMS SuperNode MS plane

At the MAP terminal

1

WARNING
Potential service interruption or extended outage
Nortel recommends that you contact Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

WARNING
Potential loss of service or extended outage
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the MS level of the MAP display, 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     .                R .
MS 1        .          Slave      F                S .
```

2 Determine the MS that is the clock slave. The clock slave appears under the header Clock.

3 Determine the state of the message switch planes.

If	Do
both MS planes are fault free	step 8
the slave MS has a fault, and the master MS plane is fault free	step 8
the master MS has a fault, but the slave MS is fault free	step 5
both MS planes have faults	step 4

Emergency power conservation
Emergency shutdown of one DMS SuperNode MS plane (continued)

4 Do not continue this procedure until you clear the faults on a minimum of one MS. To clear the faults, clear the correct MS. When a minimum of one MS is fault free, go to step 2.

5 To switch clock mastership, type

>SWMAST

and press the Enter key.

Example of a MAP response:

```
Request to Switch Clock Mastership MS: 0 submitted.
Request to Switch Clock Mastership MS: 0 passed.
```

If the SWMAST command	Do
passed	step 7
failed	step 6

6 Do not continue this procedure until you clear any faults that can prevent the switch of mastership. To clear the faults, clear the correct MS alarms. When the faults are clear, go to step 2.

7 Wait 10 min to make sure the MS has stability. Verify MS stability and continue this procedure.

8 To manually busy the slave MS, type

>BSY ms_number

and press the Enter key.

where

ms_number
is the number of the slave MS (0 or 1)

Example of a MAP response:

```
Request to MAN BUSY MS: 0 submitted.
Request to MAN BUSY MS: 0 passed.
```

Emergency power conservation
Emergency shutdown of one DMS SuperNode MS plane (end)

At the MS shelf

9

WARNING
Static electricity damage
Wear a wrist strap that connects to 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.

WARNING
Possible loss of service
Make sure that you power down the slave MS. If you power down the MS that contains the master clock, the system shuts down.

Power down the slave MS as follows:

a Press down and release the switch on the faceplate of the NT9X30 +5V power converter in slot 4.

b Press down and release the switch on the faceplate of the NT9X31 -5V power converter in slot 1.

c At the same time, press down and release the switches on the faceplates of both power converters in slots 33 and 36.

10 Return to the procedure *Emergency power conservation-Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one enhanced network plane

Application

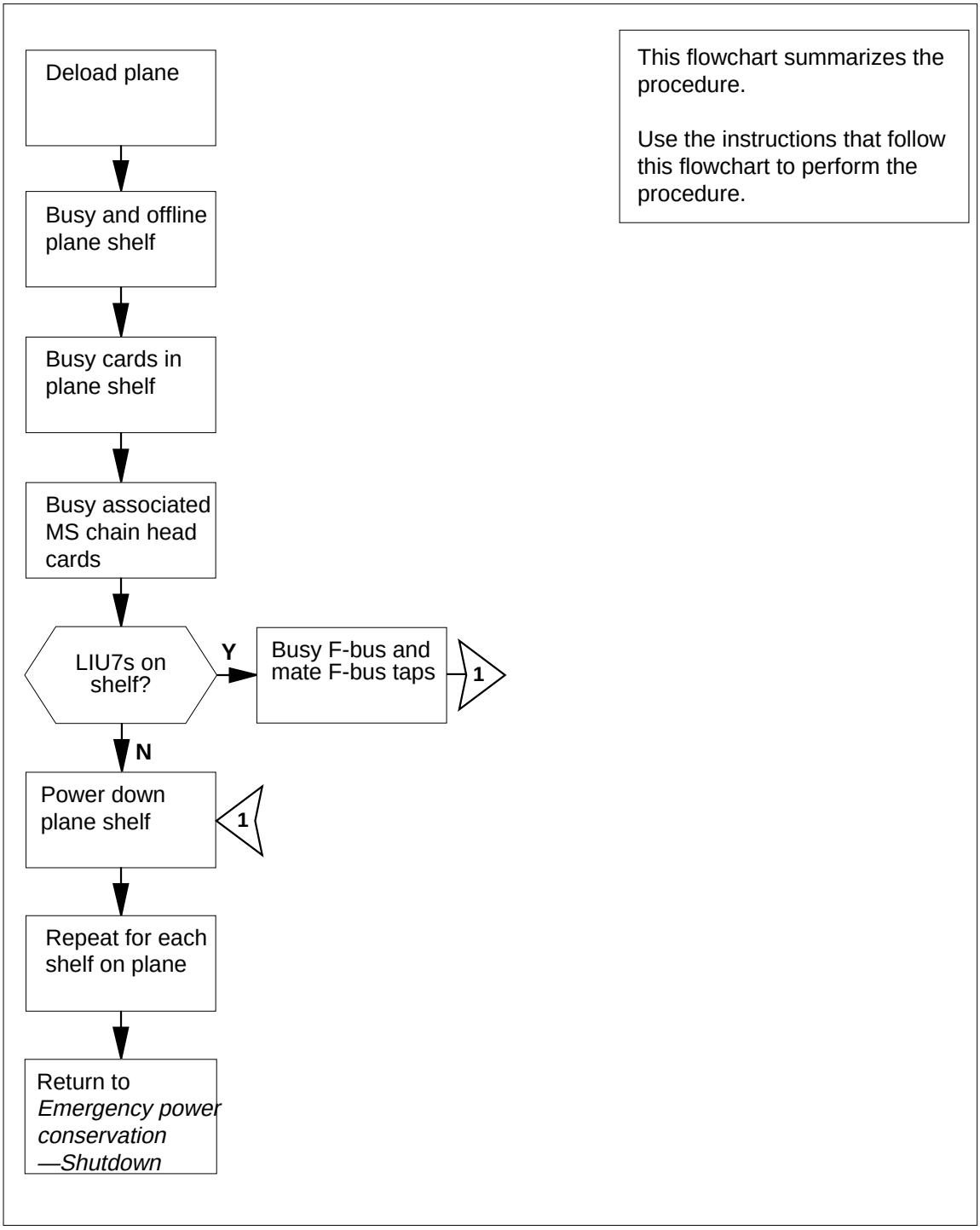
Use this procedure to shut down one plane of the enhanced network (ENET) to conserve emergency backup power.

Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action table that follows the flowchart to perform the procedure.

Emergency power conservation
Emergency shutdown of one enhanced network plane (continued)

Summary of Emergency shutdown of one enhanced network plane



Emergency power conservation
Emergency shutdown of one enhanced network plane (continued)

Emergency shutdown of one enhanced network plane

At the MAP terminal

1

WARNING
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency Assistance Service (ETAS) or the next level of support before you perform this procedure.

WARNING
Potential loss of service or extended outage
Use this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the Network level of the MAP display, type

>MAPCI;MTC;NET

and press the Enter key.

Example of a MAP display

```
ENET     System   Matrix  Shelf 0 1 2 3
  Plane 0 CSLink     .          F – – –
  Plane 1 CSLink     .          F – – –
```

2 Select a plane to remove from service. Note the plane number.

3 To deload the plane you selected in step 2, type

>DELOAD plane_no SET

and press the Enter key.

where

plane_no
is the network plane number (0 or 1)

Example of a MAP response

```
Request to SET DELOAD ENET Plane:0 submitted.
Request to SET DELOAD ENET Plane:0 passed.
```

4 Allow 30 min for traffic to clear on the plane shelf. To monitor the deload status of the plane shelf, type

>DELOAD plane_no QUERY

and press the Enter key.

where

plane_no
is the network plane number (0 or 1)

Example of a MAP display

```
Request to QUERY DELOAD ENET   Plane:0 submitted
Request to QUERY DELOAD ENET   Plane:0 passed
                    1111111111222222222333
                   901234567890123456789012
Plane:0 Shelf:00  -----------YYYYYYYYY--YY
```

Note: A Y under the slot number indicates a deloaded crosspoint card in the MAP display.

5 Proceed to the next step when you confirm that you deloaded all crosspoint cards on the plane shelf.

6 To access the System level of the MAP display, type

>SYSTEM

and press the Enter key

Example of a MAP display

```
SYSTEM
 Shelf    Plane 0                  Plane 1
   00        .                        .
```

7 Select a shelf to remove from service.

8 To identify the message switch (MS) card chain connected to the shelf you selected, type

>TRNSL plane_no shelf_no

and press the Enter key.

where

plane_no
is the network plane number (0 or 1)

shelf_no
is the network shelf number (0 to 7)

Example of a MAP display

```
Request to TRNSL ENET Plane:0 Shelf:00 submitted.
Request to TRNSL ENET Plane:0 Shelf:00 passed.
ENET Plane:0 Shelf:00 MS:0 and 1 Card:20 Link:00 Port:00
```

9 Note the card number and link number.

10 To manually busy the plane shelf, type

>BSY plane_no shelf_no

Emergency power conservation
Emergency shutdown of one enhanced network plane (continued)

and press the Enter key

where

plane_no
is the network plane number (0 or 1)

shelf_no
is the network shelf number (0 to 7)

Example of a MAP display

```
Request to MAN BUSY ENET Plane:0 Shelf:00 submitted.
Request to MAN BUSY ENET Plane:0 Shelf:00 passed.
```

11 To offline the plane shelf, type

>OFFL plane_no shelf_no

and press the Enter key

where

plane_no
is the network plane number (0 or 1)

shelf_no
is the network shelf number (0 to 7)

Example of a MAP response

```
Request to OFFL ENET Plane:0 Shelf:00 submitted.
Request to OFFL ENET Plane:0 Shelf:00 passed.
```

12 To access the Shelf level for the ENET shelf you want to remove from service, type

>SHELF shelf_no

and press the Enter key

where

shelf_no
is the network shelf number (0 to 7)

13 To manually busy all the cards on the shelf, type

>BSY shelf_no ALL

and press the Enter key

where

shelf_no
is the network shelf number (0 to 7)

14 To offline all the cards on the plane, type

>OFFL shelf_no ALL

and press the Enter key

where

Emergency power conservation
Emergency shutdown of one enhanced network plane (continued)

shelf_no
is the network shelf number (0 to 7)

15 To access the MS Shelf level of the MAP display, type

```
>MS;SHELF;CHAIN  card_no
```

and press the Enter key.

where

card_no
is the card number you noted in step 9

16 To manually busy the head card in the chain on MS 0, type

```
>BSY  0  LINK  link_no
```

and press the Enter key.

where

link_no
is the link number you noted in step 9

17 To manually busy the head card in the chain on MS 1, type

```
>BSY  1  LINK  link_no
```

and press the Enter key.

where

link_no
is the link number you noted in step 9

18 Repeat steps 6 to 17 for each of the ENET plane shelves you have not removed from service.

19 Before you proceed, wait 20 min to allow distribution of network traffic and completion of maintenance activities on peripheral module (PM) links.

20 Determine the location of the ENET plane shelf that you want to power down.

If the ENET plane shelf is in	Do
a SuperNode Combined Core (SCC) cabinet	step 21
an external ENET cabinet	step 31

21 Determine if the ENET Interface (ENI) shelf in the SCC cabinet contains a link interface unit (LIU). If the ENI shelf contains LIUs, the location of the LIUs is in shelf slots 7 to 9, and 30 to 32.

If the ENI shelf	Do
contains LIUs	step 22
does not contain LIUs	step 25

Emergency power conservation
Emergency shutdown of one enhanced network plane (continued)

22 To access the F-bus level, type

`>MS;SHELF;CARD 12`

and press the Enter key.

23

WARNING
Potential loss of service
To avoid service interruptions, make sure the proper F-bus and F-bus taps for the LIU cards, powered by the NT9X30 card, are busied out.

To busy the F-bus connected the ENET plane that you want to power down, type

`>BSY ms_no FBUS`

and press the Enter key.

where

ms_no
is the message switch number. Enter 0 for ENET plane 0, or 1 for ENET plane 1.

24 To busy the associated F-bus taps for the other F-bus, type

`>BSY ms_no TAP tap_no`

and press the Enter key.

where

fbus_no
is the message switch number NOT entered in step 23

tap_no
is the tap number. Enter 0 for ENET plane 0, or 11 for ENET plane 1.

Emergency power conservation
Emergency shutdown of one enhanced network plane (continued)

At the ENET shelf

25

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of the frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Make sure that the LED on the NT9X13 card is lit. The light indicates that the power interlock on the power converter cards is unlocked. This procedure can take 3 min.

26

WARNING
Possible loss of service
Make sure that you power down the correct side of the ENET shelf. If you power down an in-service node, calls in progress can drop or network blockage can occur.

The next action depends on which ENET plane you want to shut down.

If you want to shut down	Do
plane 0	step 27
plane 1	step 29

At the ENET shelf

27 At the same time, press down and release the switches on the faceplates of the power converters in slots 1 and 4.

28 Go to step 33.

At the ENET shelf

29 At the same time, press down and release the switches on the faceplates of the power converters in slots 33 and36.

30 Go to step 33.

Emergency power conservation
Emergency shutdown of one enhanced network plane (end)

At the ENET cabinet

31

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of the frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

WARNING
Possible loss of service
Make sure that you power down the correct side of the ENET shelf. If you power down an in-service node, calls in progress can drop or network blockage can occur.

Power down the offline plane shelf as follows:

a At the same time, press down and release the switches on the faceplates of the power converters in slots 1 and 4.

b At the same time, press down and release the switches on the faceplates of the power converters in slots 33 and 36.

32 Repeat step 31 for each of the ENET plane shelves you have not powered down.

33 Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one half of a line module pair

Application

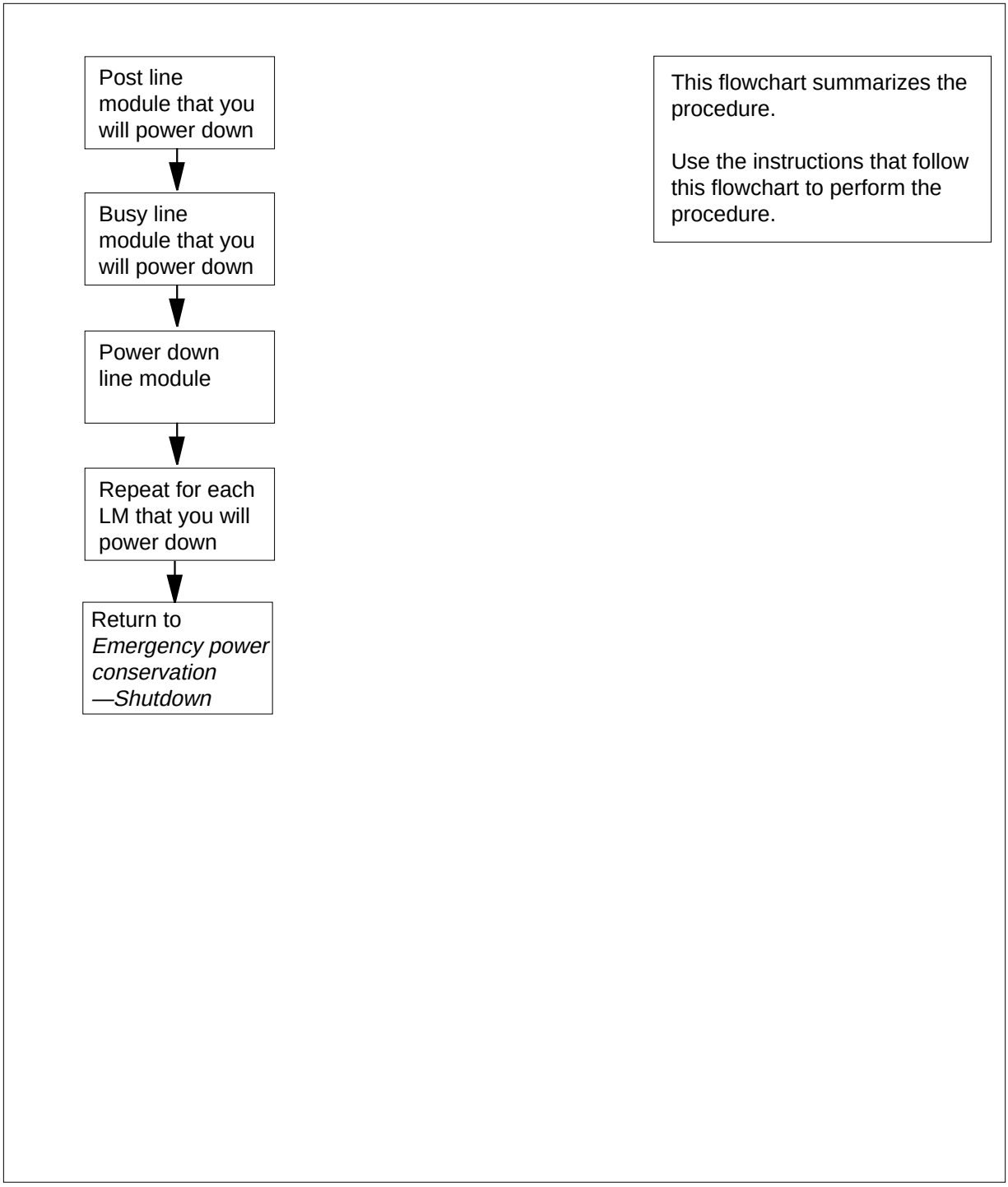
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one half of a line module pair.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one half of a line module pair (continued)

Summary of Emergency shutdown of one half of a line module pair



Emergency power conservation
Emergency shutdown of one half of a line module pair (continued)

Emergency shutdown of one half of a line module pair

At the MAP terminal

1

WARNING
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

WARNING
Potential loss of service or extended outage
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

2 To post the LM that you will power down, type

>POST LM HOST frame pair

and press the Enter key.

where

frame
is the frame number (00 to 99)

pair
is the frame pair number (0 to 1)

Example of a MAP response:

```
LM  HOST 00 0  Insv
```

3 To manually busy the LM, type

>BSY

and press the Enter key.

Example of a MAP response:

```
LM 0 Bsy
OK.
```

Emergency power conservation
Emergency shutdown of one half of a line module pair (end)

4

WARNING
Static electricity damage
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Pull down and set the handle of the POWER switch for the NT2X70 power converter in slot 20 to the OFF position.

5 Repeat steps 2 to 4 to power down each LM .

6 Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one junctored network plane

Application

Use this procedure to conserve emergency backup power. To conserve backup power, shut down one plane of the junctored network (JNET). This procedure applies to the following JNET types:

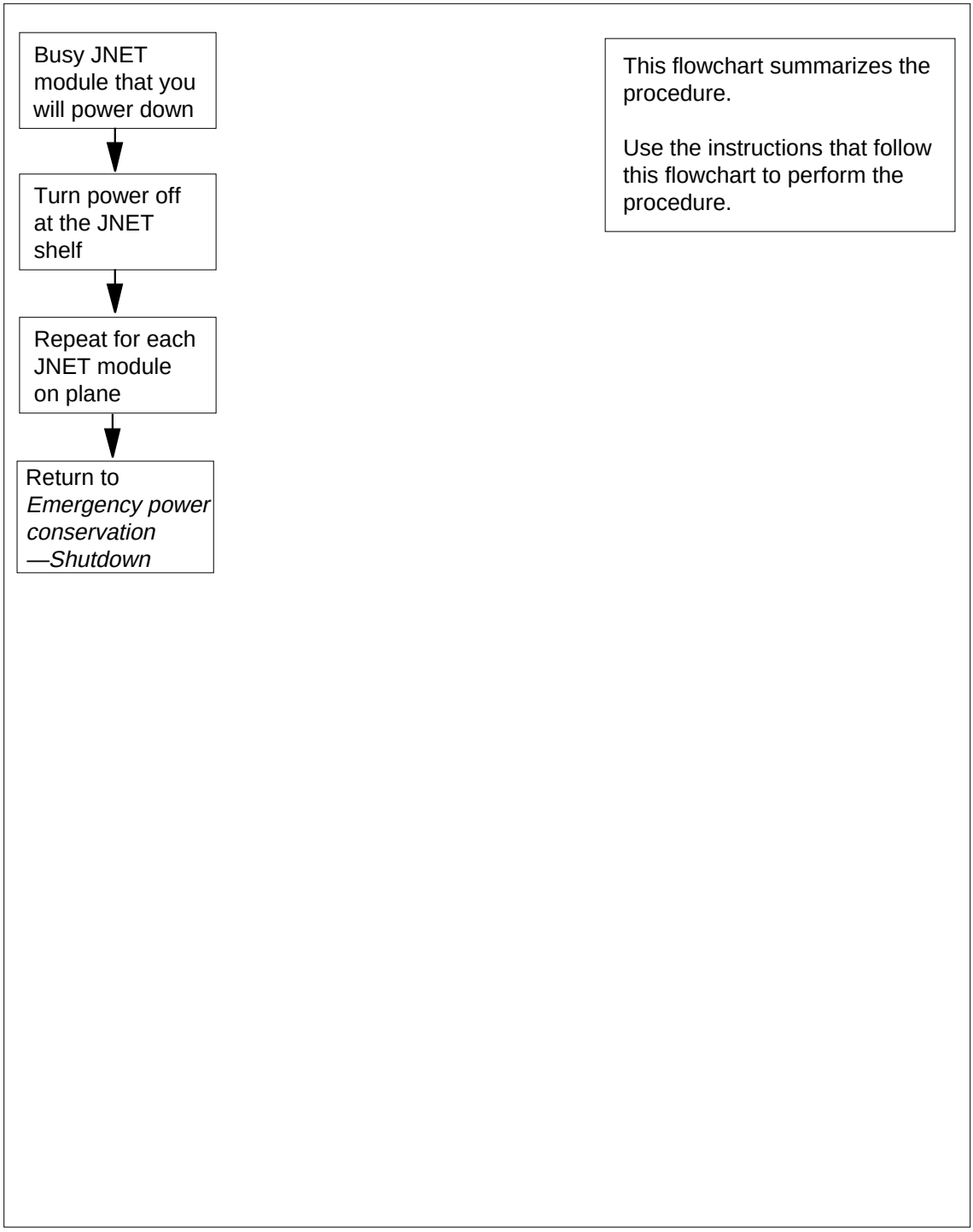
- NT0X48
- NT5X13
- NT8X10

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one junctored network plane (continued)

Summary of Emergency shutdown of one junctored network plane



Emergency power conservation
Emergency shutdown of one junctored network plane (continued)

Emergency shutdown of one junctored network plane

At the MAP terminal

1

WARNING
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or next level of support before you perform this procedure.

WARNING
Potential loss of service or extended outage
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the NET level of the MAP display, type

>MAPCI;MTC;NET

and press the Enter key.

Example of a MAP response:

```
Net
            11111   11111   22222   22222   33
Plane   01234   56789   01234   56789       01234   56789   01
  0     ....
  1     ....
JNET:
```

2 Select a network plane pair to power down.

3 To manually busy the network module that you will power down, type

>BSY plane_no pair_no

and press the Enter key.

where

plane_no
is the network plane number (0 to 1)

pair_no
is the network plane pair number (0 to 31)

Emergency power conservation
Emergency shutdown of one junctored network plane (end)

4 To determine the location of the network module that you will power down, type

```
>LOC  plane_no  pair_no
```

and press the Enter key.

where

plane_no
is the network plane number (0 to 1)

pair_no
is the network plane pair number (0 to 31)

At the network cabinet

5

WARNING
Static electricity damage
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) while you handle circuit cards. The wrist strap protects the cards against static electricity damage.

WARNING
Potential loss of service
Make sure that you only power down the shelves that you busied in step 3.

At the shelves you busied in step 3, locate the handle of the PWR switch that is on the power converters. Move down the handle of the PWR switch to the OFF position.

6 Repeat steps 2 to 5 for one plane of each network plane pair.

7 Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one LGC, LTC, and DTC unit

Application

Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one unit of the following extended peripheral modules (XPM):

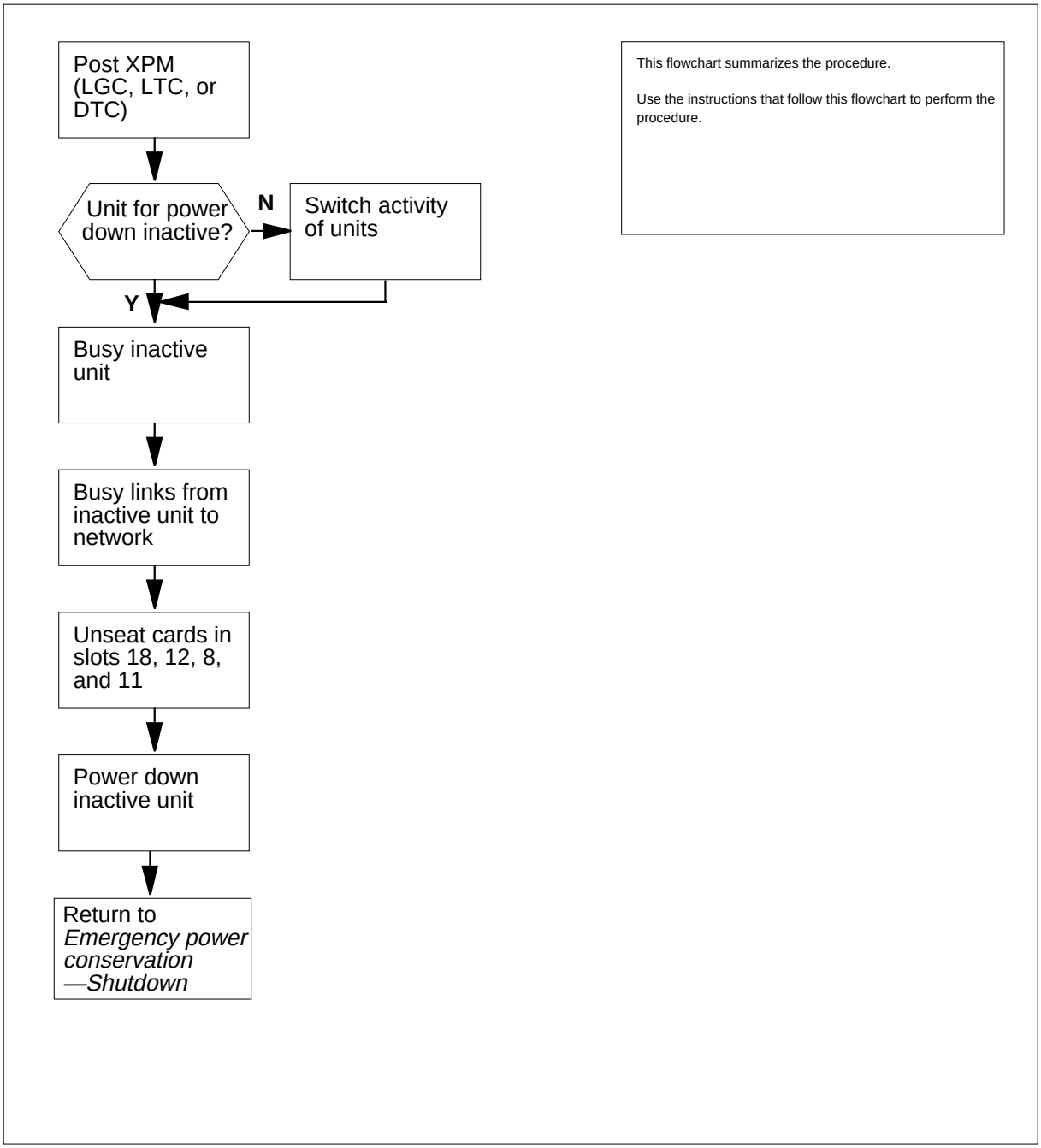
- digital trunk controllers (DTC)
- line group controllers (LGC)
- line trunk controllers (LTC)

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one LGC, LTC, and DTC unit (continued)

Summary of Emergency shutdown of one LGC, LTC, and DTC unit



Emergency power conservation
Emergency shutdown of one LGC, LTC, and DTC unit (continued)

Emergency shutdown of one LGC, LTC, and DTC unit

CAUTION
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

CAUTION
Potential loss of service or extended outage
Perform this procedure only to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

At the MAP terminal

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

`>MAPCI;MTC;PM`

and press the Enter key.

2 To post the PM for the unit that you will power down, type

`>POST pm_type pm_no`

and press the Enter key.

where

pm_type
is the PM type (LGC, LTC, or DTC)

pm_no
is the PM identification number (0 to 999)

Example of a MAP response:

```
DTC    0 ISTb  Links_OOS: CSide  0 , PSide  0
Unit0:          Act     InSv
Unit1:          Inact       InSv
```

Emergency power conservation
Emergency shutdown of one LGC, LTC, and DTC unit (continued)

3

CAUTION
Loss of service
You will lose service if you power down the active unit of the PM.

Determine if the XPM unit that you will power down is the active (Act) or inactive (Inact) unit from the MAP display.

If the unit	Do
is active	step 4
is inactive	step 8

4 To switch the activity of the units, type

>SWACT

and press the Enter key.

The system determines the type of SWACT that the system can perform. The system can perform a warm or a cold SWACT. The system displays a confirmation prompt for the selected SWACT.

Example of a MAP response:

```
LGC 2       A Warm SwAct will be performed after
            data sync of active terminals
Please confirm (”YES”, ”Y”, ”NO” or ”N”):
```

If MAP response	Do
indicates a cold SwAct	step 5
indicates a warm SwAct	step 7

5 To cancel the activity switch, type

>NO

and press the Enter key.

6 You cannot switch activity on the XPM at this time. Proceed as follows:

If to	Do
power down the inactive unit	step 8

Emergency power conservation
Emergency shutdown of one LGC, LTC, and DTC unit (continued)

If to	Do
leave both units of this XPM in service and proceed to the next XPM	step 2

7 To confirm the prompt to switch the activity of the unit, type

>YES

and press the Enter key.

The system runs an audit before the SWACT to determine the ability of the inactive unit to accept activity correctly.

Note: A maintenance flag (“Mtce" in the following example) appears when maintenance tasks are in progress. Wait until the flag disappears before you proceed with the next maintenance action.

Example of a MAP response:

```
XPM 0 ISTb  Links_OOS:  CSide 0, PSide 0
Unit0:  Act   ISTb     Mtce
Unit1:  Inact InSv     Mtce
```

8 To manually busy the inactive unit of the XPM, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no
is the PM unit number (0 or 1)

9 To identify the network type and network links that associate with the manual busy XPM unit, type

>TRNSL C

and press the Enter key.

Example of a MAP response:

```
LINK 0: NET 0 1 0;CAP MS;Status:OK
LINK 1: NET 1 1 0;CAP MS;Status:OK
LINK 2: NET 0 1 4;CAP MS;Status:OK
LINK 3: NET 1 1 4;CAP MS;Status:OK
LINK 4: NET 0 1 8;CAP MS;Status:OK
...
LINK 31 NET 1 1 60;CAP MS;Status:OK
```

Note: Links 5 to 30 do not appear.

Example of a MAP response:

Emergency power conservation
Emergency shutdown of one LGC, LTC, and DTC unit (continued)

```
LINK 0: ENET 0  0 14 01 0;CAP MS;Status:OK
LINK 1: ENET 1  0 24 01 0;CAP MS;Status:OK
LINK 2: ENET 0  0 14 01 1;CAP MS;Status:OK
LINK 3: ENET 1  0 24 01 1;CAP MS;Status:OK
LINK 4: ENET 0  0 14 01 2;CAP MS;Status:OK
LINK 5: ENET 1  0 24 01 2;CAP MS;Status:OK...
LINK 6: ENET 0  0 14 01 3;CAP MS;Status:OK
LINK 7: ENET 1  0 24 01 3;CAP MS;Status:OK
```

10 Determine if the network on your switch is a junctored network (JNET) or enhanced network (ENET).

If the network	Do
is JNET	step 11
is ENET	step 18

11 Determine the XPM unit that is manual busy (0 or 1) . Note the speech link numbers (0 to 31) that associate with the manual busy XPM. Even numbered speech links (0, 2, 4 ... 30) associate with XPM unit 0. Odd numbered speech links (1, 3, 5 ... 31) associate with XPM unit 1.

Note: Speech link numbers 5 to 30 do not appear in the example in step 9.

12 Record the network plane number, network module (pair) number, and the network link number. Record these numbers for each speech link recorded in step 11.

Note: Speech link 2 associates with the network plane 0, network module number 1, and network link number 4. The association appears in the JNET example in step 9.

13 To access the NET level of the MAP display, type

`>NET`

and press the Enter key.

14 To access the network link level for the first network link that you will busy, type

`>LINKS n`

and press the Enter key.

where

`n`
is the network module number recorded in step 12

15 To manually busy the first network link, type

`>BSY plane_no link_no`

and press the Enter key.

where

Emergency power conservation
Emergency shutdown of one LGC, LTC, and DTC unit (continued)

plane_no
is the network plane (0 or 1)

link_no
is the network link number

16 Repeat steps 14 and 15 until all links between the manual busy XPM unit and the network are manual busy. Complete the procedure and proceed to step 17.

17 Wait 2 min. Go to step 25.

18 Determine the speech link numbers that associate with the manual busy XPM unit. Even numbered speech links associate with unit 0. Odd numbered speech links associate with unit 1.

Note: Speech links 0, 2, 4 and 6 associate with XPM unit 0 in the ENET example in step 9. Speech links 1, 3, 5, and 7 associate with XPM unit 1.

19 Record the ENET plane number, shelf number, card number, and network link number that associate with each speech link recorded in step 18.

Note: Speech link 3 associates with ENET plane 1, shelf 0, card 24, and network link number 01. The association appears in the ENET example in step 9.

20 To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

21 To access the MAP display for the ENET card that associates with the first speech link, type

```
>SHELF  shelf_no;  CARD  card_no
```

and press the Enter key.

where

shelf_no
is the ENET shelf number

card_no
is the ENET card number

22 To deload traffic from the ENET card, type

```
>DELOAD   plane_no  SET
```

and press the Enter key.

where

plane_no
is the ENET plane number

23 To busy the first link recorded in step 18 from the ENET card to the XPM unit, type

```
>BSY   plane_no  LINK  link_no
```

and press the Enter key.

where

Emergency power conservation
Emergency shutdown of one LGC, LTC, and DTC unit (end)

plane_no
is the ENET plane number recorded in step 19

link_no
is the network link number recorded in step 19

24 Repeat steps 21 to 23 for each speech link recorded in step 18. Continue the procedure.

At the shelf

25

WARNING
Static electricity damage
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

The next step depends on the configuration of your unit. Unseat the NT6X43 message interface card or the NT6X69 message protocol card from slot 18.

26 Unseat the NT6X45 signaling processor card from slot 12.

27 Unseat the NT6X45 master processor card from slot 8.

28 Unseat the NT6X46 signaling processor memory card from slot 11.

29 Pull down and set the handle of the power converter POWER switch to the OFF position.

30 Repeat steps 2 to 29 for each LGC, DTC, and LTC.

Note: The power converter is in slot 20.

31 Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one LIM unit on each ELPP

Application

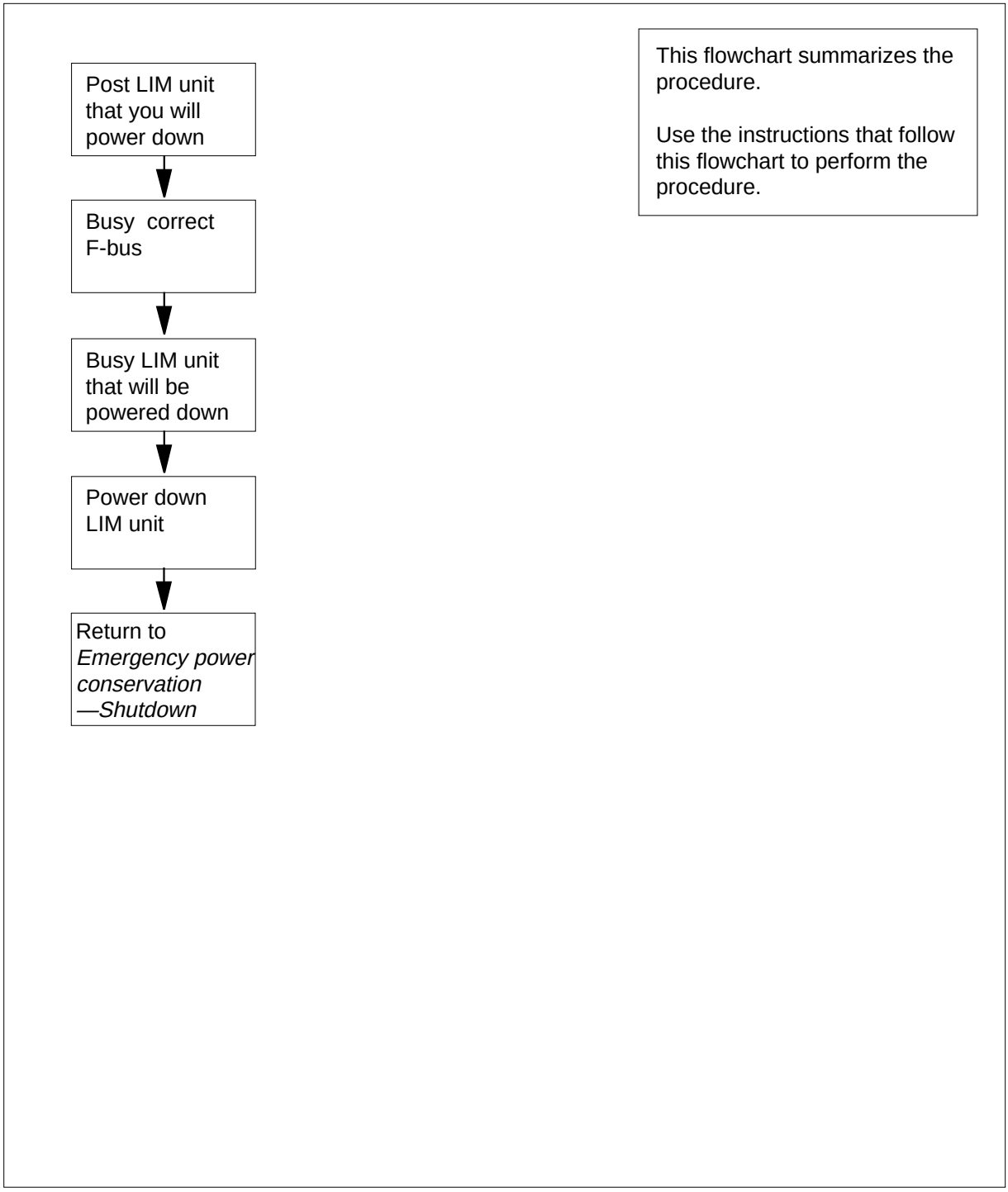
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one link interface module (LIM) unit in each enhanced link peripheral processor (ELPP) cabinet.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the shutdown task.

Emergency power conservation
Emergency shutdown of one LIM unit on each ELPP (continued)

Summary of Emergency shutdown of one LIM unit on each ELPP



Emergency power conservation
Emergency shutdown of one LIM unit on each ELPP (continued)

Emergency shutdown of one LIM unit on each ELPP

At the MAP terminal

1

WARNING
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

WARNING
Potential loss of service or extended outage
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

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     10     12      0      6     49
```

2 To post the LIM that contains the unit that you will power down, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM that you will post (0 to 16)

Example of a MAP response

```
LIM 0  InSv     OOS     OOS_Taps
                Links  LIS1  LIS2  LIS3
Unit0: InSv     .       .     .     .
Unit1: InSv     .       .     .     .
```

Emergency power conservation
Emergency shutdown of one LIM unit on each ELPP (continued)

3

WARNING
Possible loss of service
Make sure that the mate LIM unit is in service before you busy the LIM unit that you will power down. Failure to follow this procedure can isolate nodes on link interface shelves (LIS) 1, 2, and 3.

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 LIS (1, 2 or 3)

Example of a MAP display:

```
          Tap: 0    4    8
LIS 1
FBus0: InSv    ..-- ---- --..
FBus1: InSv    ..-- ---- --..
```

4

WARNING
Possible loss of service
Make sure that the mate F-bus and its equipped taps are in service. Complete this procedure before you busy the F-bus that associates with the LIM unit that you will power down. Failure to follow this procedure will isolate application specific units (ASU) on LIS 1, 2, and 3.

To manually busy the F-bus associated with the LIM unit that you will power down, type

>BSY FBUS fbus_no

and press the Enter key.

where

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

Emergency power conservation
Emergency shutdown of one LIM unit on each ELPP (continued)

Note: For ELPPs F-bus 0 and F-bus 1 exist for each LIS level (1, 2, and 3).

If the response	Do
the command passed	step 6
you are asked to confirm the command	step 5

5 To confirm the command, type

>YES

and press the Enter key.

6 To access the next LIS level type

>NEXT

and press the Enter key.

7 Determine if the F-bus has been busied on each LIS levels (1, 2, and 3).

If	Do
the F-bus has been busied on each LIS level (1, 2, and 3)	step 8
the F-bus has not been busied on each LIS level (1, 2, and 3)	step 4

8 To quit the F-bus or LIS level of the MAP display, type

>QUIT

and press the Enter key.

9

WARNING
Possible loss of service
Make sure that the mate LIM unit is in service before you manually busy the LIM unit that you will power down. Failure to follow this procedure can isolate nodes on LIS 1, 2, and 3.

To manually busy the LIM unit that you will power down, type

>BSY UNIT unit_no

and press the Enter key.

where

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

Emergency power conservation
Emergency shutdown of one LIM unit on each ELPP (end)

At the ELPP

10

WARNING
Static electricity damage
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Press down and release the power switch on the faceplate of the NT9X30 and NT9X31 power converters. Slot 4 for LIM unit 0 and slot 36 for LIM unit 1 contain the NT9X30 power converter. Slot 1 for LIM unit 0 and slot 33 for LIM unit1 contain the NT9X31 power converter. This procedure powers down the LIM unit busied in step 9.

Note: The CONVERTER OFF LED goes on when you power down the NT9X30 or NT9X31 power converter. Ensure that both the NT9X30 and NT9X31 power converters for the LIM unit busied in step 9 are powered down.

11 Return to the procedure *Emergency power conservation—Shutdown* in this document and proceed as directed.

Emergency power conservation
Emergency shutdown of one LIM unit on each LPP

Application

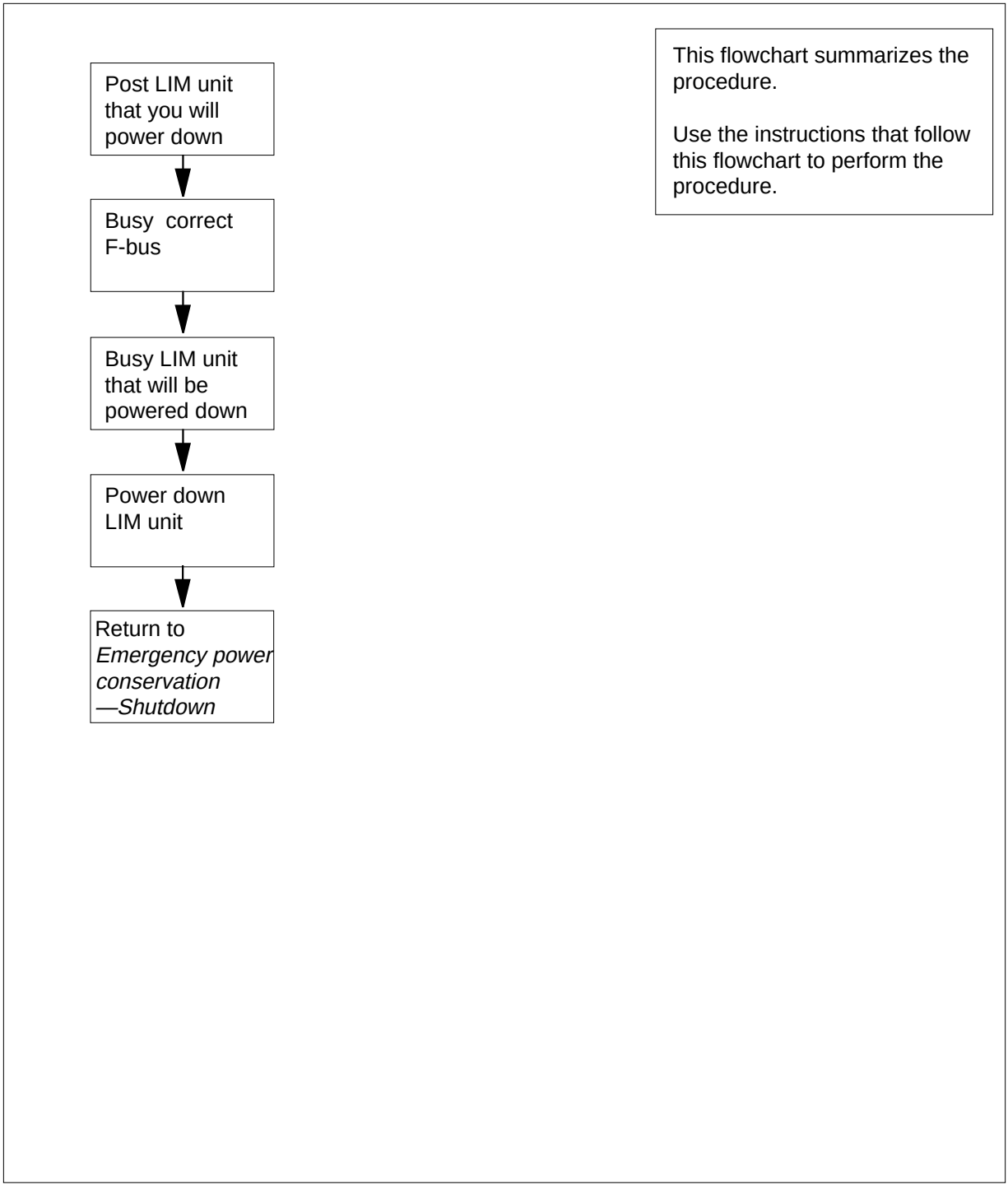
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one link interface module (LIM) unit in each link peripheral processor (LPP) cabinet.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one LIM unit on each LPP (continued)

Summary of Emergency shutdown of one LIM unit on each LPP



Emergency power conservation
Emergency shutdown of one LIM unit on each LPP (continued)

Emergency shutdown of one LIM unit on each LPP

At the MAP terminal

1

WARNING
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

WARNING
Potential loss of service or extended outage
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

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     10     12      0      6     49
```

2 To post the LIM that contains the unit that you will power down, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM that you will post (0 to 16)

Example of a MAP response:

```
LIM 1  ISTB
                  Links_OOS Taps_OOS
Unit0: ManB            2       16
Unit1:  .              .        .
```

Emergency power conservation
Emergency shutdown of one LIM unit on each LPP (continued)

3

WARNING
Possible loss of service
Make sure that the mate LIM unit is in service before you busy the LIM unit that you will power down. Failure to follow this procedure can isolate nodes on link interface shelves (LIS) 1, 2, and 3.

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      24  28  32
FBus0: InSv    .... .... .... .... ----  ----      ----  ----  ....
FBus1: InSv    .... .... .... .... ----  ----      ----  ----  ....
```

4

WARNING
Possible loss of service
Make sure that the mate F-bus and its equipped taps are in service. Complete this procedure before you busy the F-bus that associates with the LIM unit that you will power down. Failure to follow this procedure will isolate application specific units (ASU) on LIS 1, 2, and 3.

To manually busy the F-bus associated with the LIM unit that you will power down, type

>BSY FBUS fbus_no

and press the Enter key.

where

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

Emergency power conservation
Emergency shutdown of one LIM unit on each LPP (continued)

Note: F-bus 0 associates with LIM unit 0. F-bus 1 associates with LIM unit 1.

If the response	Do
is `LIM x FBus y Busy initiated.` `LIM x FBus y Busy passed.`	step 6

is `LIM x FBus y Busy requires 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 5

5 To confirm the command , type

>YES

and press the Enter key.

6 To quit the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

7

WARNING
Possible loss of service
Make sure that the mate LIM unit is in service before you manually busy the LIM unit that you will power down. Failure to follow this procedure can isolate nodes on LIS 1, 2, and 3.

To manually busy the LIM unit that you will power down, type

>BSY UNIT unit_no

and press the Enter key.

where

Emergency power conservation
Emergency shutdown of one LIM unit on each LPP (end)

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

At the LPP

8

WARNING
Static electricity damage
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Press down and release the power switch on the faceplate of the NT9X30 power converter. Slot 4 for LIM unit 0 and slot 36 for LIM unit1 contain the NT9X30 power converter. This procedure powers down the LIM unit busied in step 7.

Note: The CONVERTER OFF LED goes on when you power down the NT9X30 power converter.

9 Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one MS plane

Application

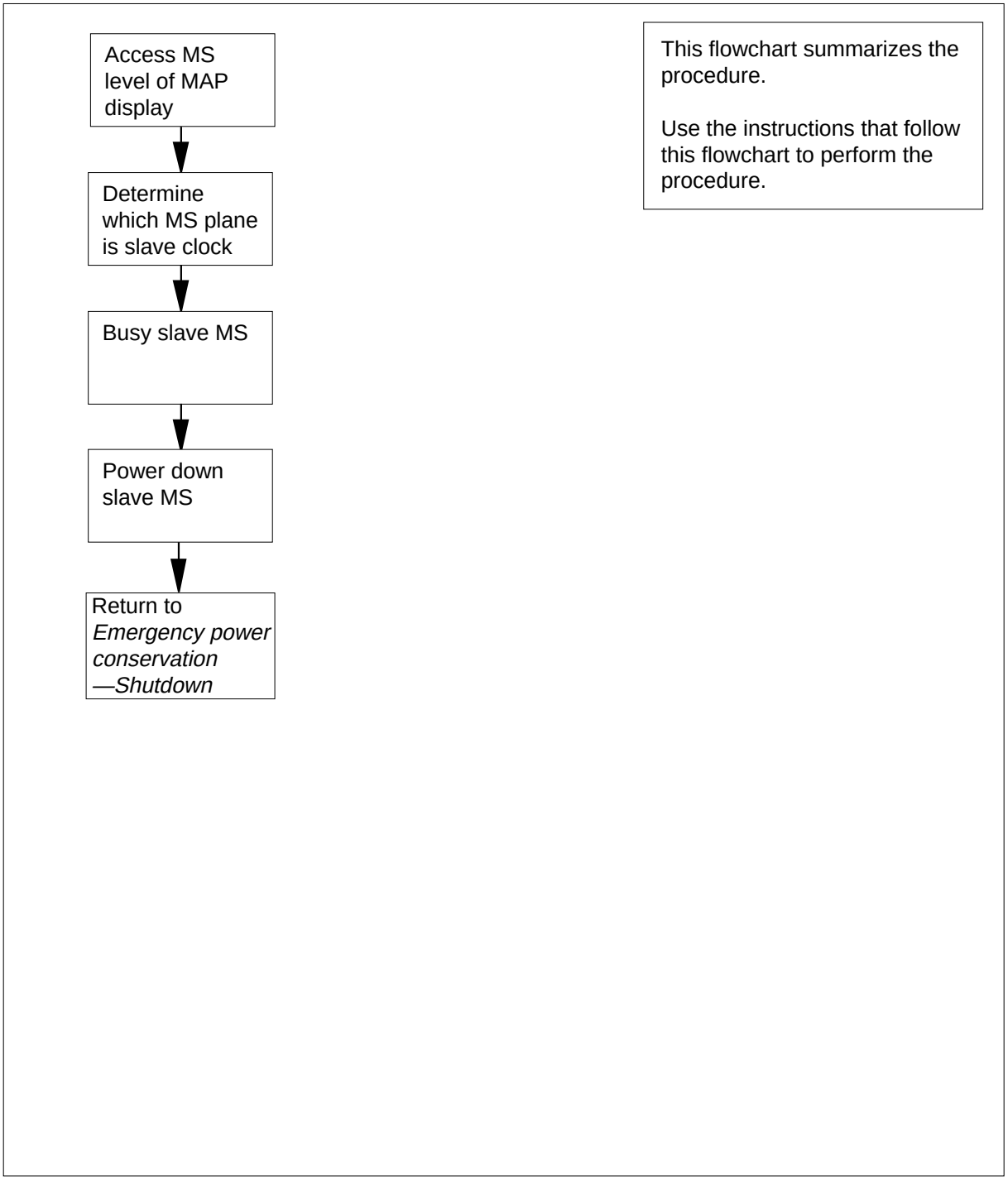
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one message switch (MS) shelf.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one MS plane (continued)

Summary of Emergency shutdown of one MS plane



Emergency power conservation
Emergency shutdown of one MS plane (continued)

Emergency shutdown of one MS plane

CAUTION
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or your next level of support before you perform this procedure.

CAUTION
Potential service interruption or extended outage
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

At the MAP terminal

1 To access the MS level of the MAP display, type

`>MAPCI;MTC;MS`

and press the Enter key.

2 Determine which MS is the clock slave. The clock slave is under the header Clock.

Example of a MAP display:

```
Message Switch   Clock  Shelf 0  Inter-MS Link 0 1
MS 0        .    M Free      .                R .
MS 1        .    Slave        F                  S .
```

3 Determine the state of the message switch planes.

If	Do
both MS planes are fault free	step 8
the slave MS has a fault, and the master MS plane is fault free	step 8
the master MS has a fault, but the slave MS is fault free	step 5
both MS planes have faults	step 4

Emergency power conservation
Emergency shutdown of one MS plane (continued)

4 Clear the faults on a minimum of one MS before you continue this procedure. Clear the correct MS alarms to clear the faults on a minimum of one MS. Proceed to step 2 when a minimum of one MS is fault free.

5 To switch clock mastership, type

>SWMAST

and press the Enter key.

Example of a MAP response:

```
Request to Switch Clock Mastership MS: 0 submitted.
Request to Switch Clock Mastership MS: 0 passed.
```

If the SWMAST command	Do
passed	step 7
failed	step 6

6 Do not continue this procedure until you clear the faults that can prevent the switch of mastership. To clear the faults preventing the switch of mastership, clear the correct MS alarms. When you clear the faults, go to step 2.

7 Wait 10 min to make sure the MS has stability. Verify MS and continue this procedure.

8 To manually busy the slave MS, type

>BSY ms_number

and press the Enter key.

where

ms_number
is the number of the slave MS (0 or 1)

Example of a MAP response:

```
Request to MAN BUSY MS: 0 submitted.
Request to MAN BUSY MS: 0 passed.
```

Emergency power conservation
Emergency shutdown of one MS plane (continued)

At the MS shelf

9

WARNING
Static electricity damage
Wear a wrist strap that connects to 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.

WARNING
Possible loss of service
Make sure that you power down the slave MS. If you power down the MS that contains the master clock, the system will shut down.

Verify the type of switch that you are working on.

If you	Do
are working on a SuperNode switch	step 10
are working on a SuperNode SE switch	step 11

10 Power down the slave MS as follows:

a Press down and release the switch on the faceplate of the NT9X30 power converter in slot 4F.

b Press down and release the switch on the faceplate of the NT9X31 power converter in slot 1F.

c At the same time, press down and release the switches on the faceplates of the power converters in slots 33F and 36F.

d Go to step 14.

11 Use the information in step 1 to determine the MS that is the slave MS.

If the slave MS	Do
is MS 0	step 12
is MS 1	step 13

12 Power down the slave MS as follows:

a Press down and release the switch on the faceplate of the NT9X30 power converter in slot 4F.

Emergency power conservation
Emergency shutdown of one MS plane (end)

b Press down and release the switch on the faceplate of the NT9X31 power converter in slot 1F.

c Go to step 14.

13 Power down the slave MS as follows:

a Press down and release the switch on the faceplate of the NT9X30 power converter in slot 36F.

b Press down and release the switch on the faceplate of the NT9X30 power converter in slot 33F.

14 Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one remote oscillator shelf plane

Application

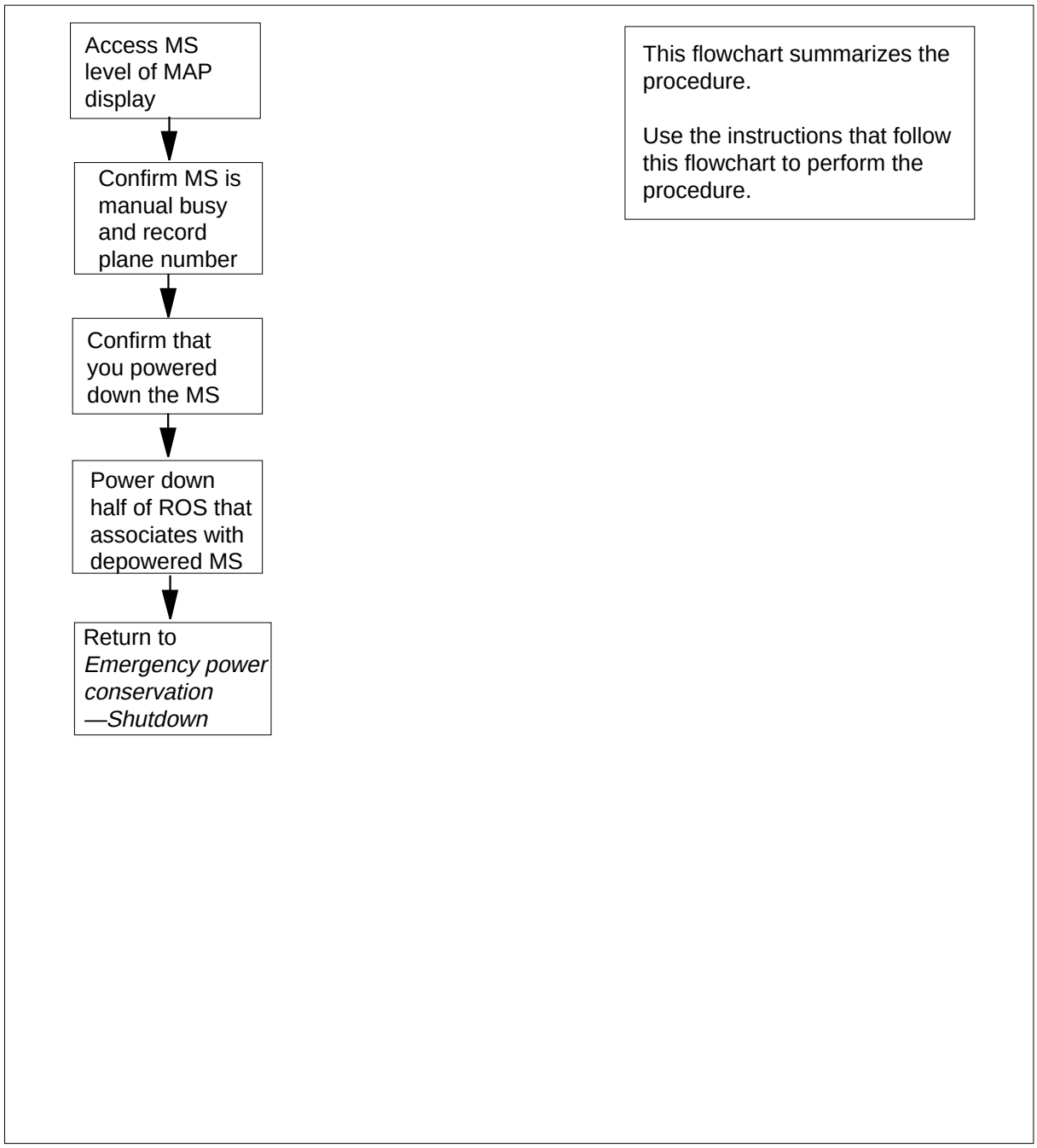
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one plane of a remote oscillator shelf (ROS). Remove power from the associated message switch plane before you perform this procedure. Follow the procedure *Emergency power conservation—Emergency shutdown of one DMS SuperNode MS plane* in this document.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one remote oscillator shelf plane (continued)

Summary of Emergency shutdown of one remote oscillator shelf plane



Emergency power conservation
Emergency shutdown of one remote oscillator shelf plane (continued)

Emergency shutdown of one remote oscillator shelf plane

CAUTION
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

CAUTION
Potential loss of service or extended outage
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

At the MAP

1 To access the MS level of the MAP display, 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     .                R .
MS 1        .          Slave      F                S .
```

2 Confirm that one message plane is manual busy. The M under the message header indicates that one message plane is manual busy. Note if the message plane is plane 0 or 1.

At the message switch

3 Confirm that you powered down the manual busy MS. Note that a power interlock protects the remote oscillator shelf. Power down the associated MS before you power down one half of the ROS.

Emergency power conservation
Emergency shutdown of one remote oscillator shelf plane (end)

At the ROS

4

WARNING
Static electricity damage
Wear a wrist strap that connects to 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.

Power down the half of the ROS that associates with the depowered MS plane

.

Note: Slots 1 to 13 associate with MS 0. Slots 14 to 26 associate1 with MS 1.

5 Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one SuperNode SE CM plane

Application

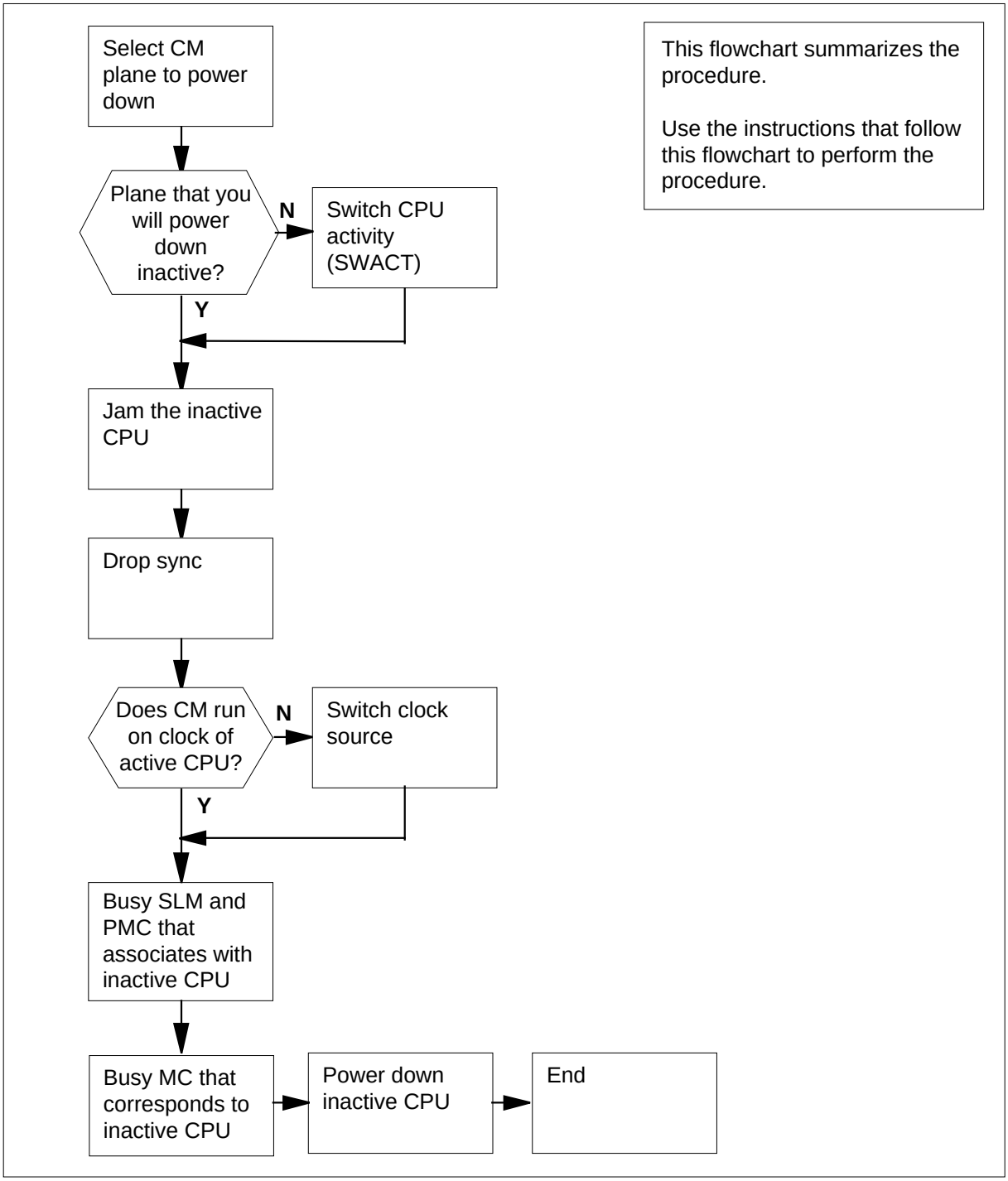
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one computing module (CM) plane.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one SuperNode SE CM plane (continued)

Summary of Emergency shutdown of one SuperNode SE CM plane



Emergency power conservation
Emergency shutdown of one SuperNode SE CM plane (continued)

Emergency shutdown of one SuperNode SE CM plane

At the MAP terminal

1

CAUTION
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) or the next level of support before you perform this procedure.

CAUTION
Potential loss of service or extended outage
Use this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access 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   .     .   no   .     .      .   .
```

2 Determine the central processing unit (CPU) that is active. The active CPU appears under the header Act of the MAP display.

3 Determine the state of the CPU 0 and CPU 1 computing module planes before you proceed. A dot (.) under the correct CPU header on the MAP display indicates a fault free CPU.

If	Do
both CPU planes are fault free	step 7
the inactive CPU has a fault, and the active CPU is fault free	step 7
the active CPU has a fault, and the inactive CPU is fault free	step 5

Emergency power conservation
Emergency shutdown of one SuperNode SE CM plane (continued)

If	Do
both CPU 0 and CPU 1 have faults	step 4

4 Clear the faults on a minimum of one CPU before you continue this procedure. To clear the faults on a minimum of one CPU, clear the correct CM alarms. When a minimum of one CPU is fault free, go to step 2.

5 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”):
```

6 To confirm the command, type

>YES

and press the Enter key.

At the CM reset terminal for the inactive CPU

7

WARNING
Loss of service
Make sure that you do not jam the active CPU. A cold restart will occur if you jam the active CPU while the CM is out of sync. 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)
```

8 To confirm the command, type

>YES

Emergency power conservation
Emergency shutdown of one SuperNode SE CM plane (continued)

and press the Enter key.

RTIF response:

```
JAM DONE
```

At the MAP terminal

9 To drop synchronization, type

>DPSYNC

and press the Enter key.

Example of MAP display response:

```
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")
```

10 To confirm the command, type

>YES

and press the Enter key.

At the CM reset terminal for the inactive CPU

11 Wait until A1 flashes on the reset terminal for the inactive CPU.

Note: Allow 5 min for A1 to begin to flash.

At the MAP terminal

12

WARNING
Possible loss of service
Make sure that the CM runs on the active CPU clock. Do not power down the inactive side of the CM while the CM runs on the inactive CPU clock. Failure to follow this procedure can cause a cold restart or a system image reload.

To determine if the CM runs on the active CPU clock, type

>INSYNC

and press the Enter key.

Example of a MAP response:

Emergency power conservation
Emergency shutdown of one SuperNode SE CM plane (continued)

```
CPU pair is NOT insync, CUP O is active.
CM is running on active CPU clock
Memory Error Correction is ENABLED.
The inactive CPU is jammed.
```

If the CM runs	Do
on the inactive clock	step 13
on the active clock	step 14

13 To run the CM on the active CPU clock, perform the procedure *Switching the clock source* in *Card Replacement Procedures*. Complete the procedure and return to this point.

14 To access the CMMNT level of the MAP display, type

>CMMNT

and press the Enter key.

Example of a MAP display:

```
CM  Sync  Act  CPU1  CPU1  Jam  Memory  CMMnt   MC   PMC
 0    no  cpu 0  .     .    yes    .       .     .     .

Traps:         Per minute =    0      Total =        5

AutoLdev:      Primary = SLM 0 DISK Secondary = SLM 1
DISK

Image Restartable = No image test since last restart

Next image restart type = WARM

Last CM REXTST executed

System memory in kbytes as of 14:39:07
Memory(kbytes): Used = 105984 Avail = 12800 Total =
118784
```

15 Record the primary autoload device.

Note: The primary autoload device appears on the right side of the Primary header. The primary autoload device is the disk of SLM 0 in the example that appears in step 14.

Emergency power conservation
Emergency shutdown of one SuperNode SE CM plane (continued)

16 Determine if the primary autoload device is on the active CPU or inactive CPU side of the switch.

If the primary autoload device	Do
is on the same plane with the active CPU	step 18
is on the same plane with the inactive CPU	step 17

17 To change the primary autoload device to a device on the same side of the switch as the active CPU, type

`>AUTOLD SLM  slm_number  device_type`

and press the Enter key.

where

slm_number
is the number of the active CPU (0 or 1)

device_type
is the number of SLM device (DISK or TAPE)

Example of a MAP response:

```
New autoload route has been set.
```

18 To access the SLM that corresponds to the inactive CPU, type

`>IOD;SLM  slm_number`

and press the Enter key.

where

slm_number
is the number of the inactive CPU (0 or 1)

Example of a MAP display:

Emergency power conservation
Emergency shutdown of one SuperNode SE CM plane (continued)

```
IOD

IOC  0  1  2  3

STAT .  .  .  .

DIRP:   .    XFER:   .   DVI :   .    DPPP:   .   DPPU:
.
NOP :   .    SLM :   .   NX25:   .    MLP :   .   SCAI:
.

SLM  0  1

Stat .  1

SLM 0               device         TAPE         DISK
                    status           .           .
                     drive          idle        on line
                    user
```

Note: The dots on the right side of the SLM Stat header indicate that SLM 0 and SLM 1 are in service.

19

WARNING
Possible loss of data recording services
The following step removes the SLM from service on the inactive plane. Before you manually busy the inactive plane, make sure that the SLM assumes the data recording services on the active plane. The SLM provides the data recording services on the inactive plane.

To manually busy the SLM, type

>BSY

and press the Enter key.

Example of a MAP response:

```
SLM 0 busy passed.
```

Note: The letter M on the right side of the SLM Stat header indicates that the associated SLM is manually busy.

20 To access the PMC level of the MAP display, type

>CM;PMC

Emergency power conservation
Emergency shutdown of one SuperNode SE CM plane (continued)

and press the Enter key.

Example of a MAP display:

```
            PMC 0

              .

PORT0:      pbsy
PORT1:
```

21

WARNING
Possible loss of service
Make sure that you busy the MC that corresponds to the inactive CPU. If you power down the plane with the wrong MC busied you will cause a warm restart.

To manually busy the port that corresponds to the inactive CPU, type

>BSY pmc_number PORT port_number

and press the Enter key.

where

pmc_number
is the number of the peripheral message controller (PMC) (0 or 1)

port_number
is the number of the inactive CPU (0 or 1)

Example input:

>BSY 0 PORT 0

and press the Enter key.

Example of a MAP response:

```
Maintenance action submitted.Passed.
```

Example of a MAP display:

```
            PMC 0
            istb
              .

 PORT0:     mbsy
 PORT1:
```

Emergency power conservation
Emergency shutdown of one SuperNode SE CM plane (end)

22 To access the MC level of the MAP display, type

>MC

and press the Enter key.

Example of a MAP response:

```
CM 0
 MC 0 MC 1
   .    .
```

23 To manually busy the MC that corresponds to the inactive CPU, type

>BSY mc_number

and press the Enter key.

where

mc_number
is the number of the inactive CPU (0 or 1)

Example of a MAP response:

```
Maintenance action submitted.
MC busied OK.
```

At the CM/SLM shelf

24

WARNING
Static electricity damage
Wear a wrist strap that connects to 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.

Press down and release the power switch to power down the inactive CPU plane. The power switch is on the faceplate of the NTDX15 power converter.

Note: The power converter appears in slots 4F through 6F for plane 0. The power converter is in slots 33F through 35F for plane 1.

25 The procedure is complete.

Emergency power conservation
Emergency shutdown of one SuperNode SE MS plane

Application

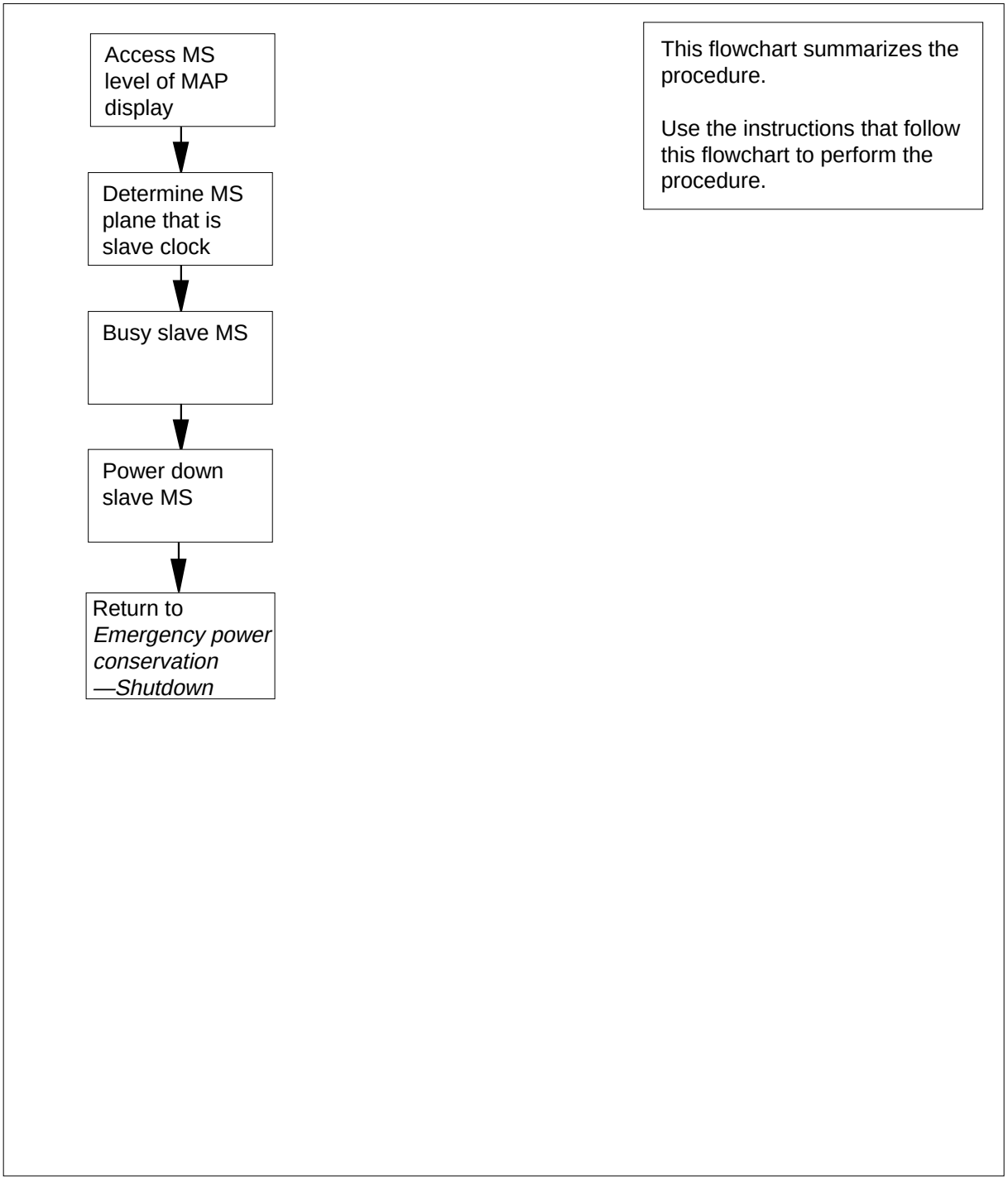
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one message switch (MS) shelf.

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one SuperNode SE MS plane (continued)

Summary of Emergency shutdown of one SuperNode SE MS plane



Emergency power conservation
Emergency shutdown of one SuperNode SE MS plane (continued)

Emergency shutdown of one SuperNode SE MS plane

At the MAP terminal

1

> **CAUTION**
> **Potential service interruption or extended outage**
> Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

> **CAUTION**
> **Potential loss of service or extended outage**
> Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the MS level of the MAP display, 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       .                R .
MS 1        .    Slave        F                S .
```

2 Determine the MS that is the clock slave. The slave clock appears under the header Clock.

3 Determine the state of the message switch planes.

If	Do
both MS planes are fault free	step 8
the slave MS has a fault, and the master MS plane is fault free	step 8
the master MS has a fault, but the slave MS is fault free	step 5

Emergency power conservation
Emergency shutdown of one SuperNode SE MS plane (continued)

If	Do
both MS planes have faults	step 4

4 Do not continue this procedure until you clear the faults on a minimum of one or more MS. To clear the the faults on a minimum of one MS, clear the correct MS alarms. When a minimum of one MS is fault free, go to step 2.

5 To switch clock mastership, type

>SWMAST

and press the Enter key.

Example of a MAP response:

```
Request to Switch Clock Mastership MS: 0 submitted.
Request to Switch Clock Mastership MS: 0 passed.
```

If the SWMAST command	Do
passed	step 7
failed	step 6

6 Do not continue this procedure until you clear any faults that can prevent the switch of mastership. To clear the faults, clear the correct MS alarms. Go to step 2.

7 Wait 10 min to make sure the MS has stability. When you verify the MS has stability, continue the procedure.

8 To manually busy the slave MS, type

>BSY ms_number

and press the Enter key.

where

ms_number
is the number of the slave MS (0 or 1)

Example of a MAP response:

```
Request to MAN BUSY MS: 0 submitted.
Request to MAN BUSY MS: 0 passed.
```

Emergency power conservation
Emergency shutdown of one SuperNode SE MS plane (end)

At the MS shelf

9

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of the frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

WARNING
Possible loss of service
Make sure that you power down the slave MS. If you power down the MS that contains the master clock, the system will shut down.

Power down the slave MS as follows:

a Press down and release the switch on the faceplate of the NT9X30 power converter.

b Press down and release the switch on the faceplate of the NT9X31 power converter.

Note: Turn off the converters in slots 1 and 4 if MS 0 is the slave MS. Turn off the converters in slots 33 and 36 if MS 1 is the slave MS.

10 Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one unit of LCMs

Application

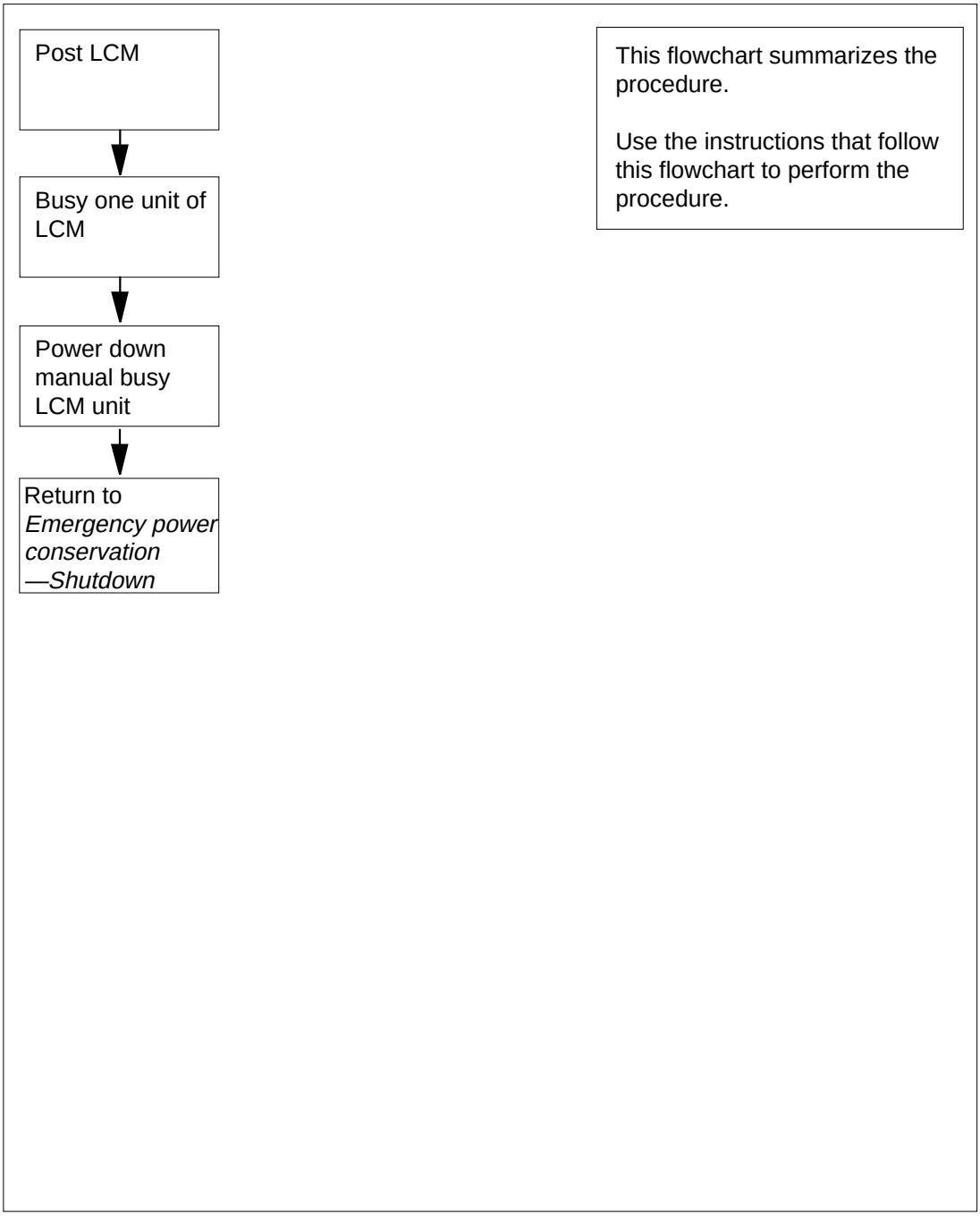
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one unit of line concentrating modules (LCM).

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one unit of LCMs (continued)

Summary of Emergency shutdown of one unit of LCMs



Emergency power conservation
Emergency shutdown of one unit of LCMs (continued)

Emergency shutdown of one unit of LCMs

At the MAP terminal

1

WARNING
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency-Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

WARNING
Potential loss of service or extended outage
Perform this procedure only to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

2 To post the LCM for the unit that you will power down, type

>POST LCM HOST frame pair

and press the Enter key.

where

frame
is the frame number (00 to 99)

pair
is the frame pair number (0 to 1)

Example of a MAP response:

```
LCM HOST 00 0 InSv Links  OOS: Cside 0 Pside 0
Unit 0: InSv        /RG:0
Unit 1: InSv    /RG:1
                     11 11 11 11 11
Drwr:   01 23 45 67 89 01 23 45 67 89   RG:Pref 0 InSv
                                         Stby 1 InSv
```

3 To manually busy the LCM unit, type

>BSY UNIT unit_no

and press the Enter key.

Emergency power conservation
Emergency shutdown of one unit of LCMs (end)

where

unit_no
is the unit of the PM to be busied (0 or 1)

4

WARNING
Static electricity damage
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Turn off the appropriate circuit breakers for the LCM unit at the FSP or MSP.

Note: Shelf location labels the circuit breakers.

5 Repeat steps 2 to 5 for one unit of each LCM in the office.

6 Return to the procedure *Emergency power conservation-Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Emergency power conservation
Emergency shutdown of one unit of MSB7s

Application

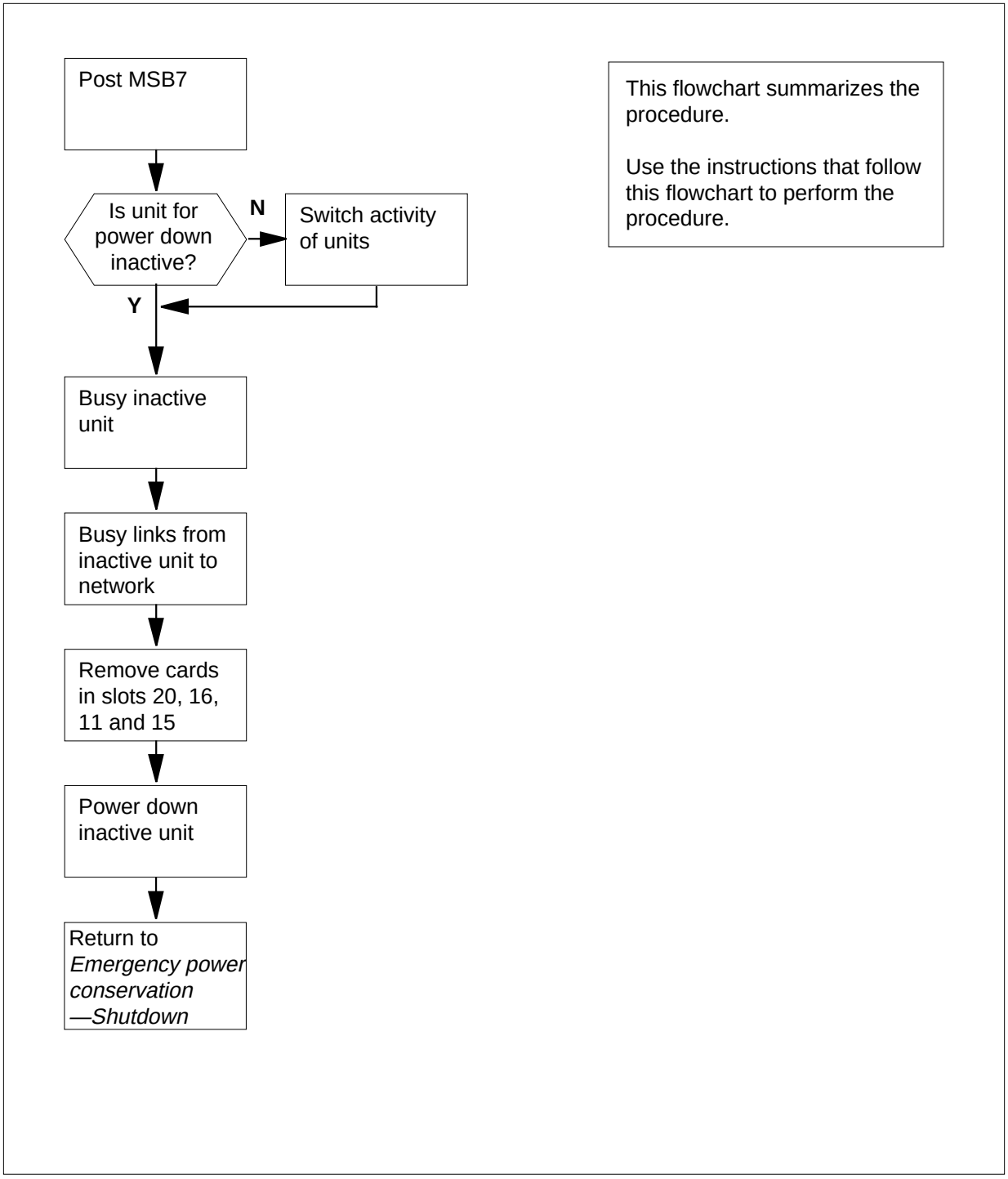
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one unit of CCS7 message switch and buffers (MSB7).

Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

Emergency power conservation
Emergency shutdown of one unit of MSB7s (continued)

Summary of Emergency shutdown of one unit MSB7s



Emergency power conservation
Emergency shutdown of one unit of MSB7s (continued)

Emergency shutdown of one unit of MSB7s

At the MAP terminal

1

WARNING
Potential service interruption or extended outage
Nortel recommends that you contact the Emergency-Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

WARNING
Potential loss of service or extended outage
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

2 To post the PM for the unit that you will power down, type

>POST MSB7 pm_no

and press the Enter key.

where

pm_no
is the PM identification number (0 to 999)

Example of a MAP response:

```
MSB7    0 InSv  Links_OOS: CSide  0 , PSide  0
Unit0:          Act     InSv
Unit1:          Inact       InSv
```

3 Determine from the MAP display if the MSB7 unit that you will power down is the active (Act) or inactive (Inact) unit.

If the unit	Do
is active	step 4
is inactive	step 8

Emergency power conservation
Emergency shutdown of one unit of MSB7s (continued)

4 To switch the activity of the units, type

>SWACT

and press the Enter key.

Example of a MAP display:

```
MSB7 0      A Warm SwAct will immediately be performed
Please confirm (”YES”, ”Y”, ”NO” or ”N”):
```

If the MAP response	Do
indicates a warm SwAct	step 7
indicates other than listed here	step 5

5 To cancel the switch of activity, type

>NO

and press the Enter key.

6 Activity on the PM cannot switch at this time. Proceed as follows:

If you	Do
want to power down the inactive unit	step 8
want to leave both units of this MSB7 in service and work on the next MSB7	step 2

7 To confirm the prompt to switch the activity of the units, type

>YES

and press the Enter key.

8 To manually busy the inactive unit of the MSB7, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no
is the PM unit number (0 or 1)

9 To identify the network type and network links that associate with the manual busy MSB7 unit, type

>TRNSL C

and press the Enter key.

Example of a MAP response for JNET:

Emergency power conservation
Emergency shutdown of one unit of MSB7s (continued)

```
LINK 0: NET 0 3 12;CAP MS;Status:OK
LINK 1: NET 1 3 12;CAP MS;Status:OK
LINK 2: NET 0 3 28;CAP MS;Status:OK
LINK 3: NET 1 3 28;CAP MS;Status:OK
LINK 4: NET 0 3 44;CAP MS;Status:OK
...
LINK 31 NET 1 3 63;CAP MS;Status:OK
```

Note: Links 5 to 30 do not appear.

Example of a MAP response for ENET:

```
LINK 0: ENET 0  0 13 00;CAP MS;Status:OK
LINK 1: ENET 1  0 23 00;CAP MS;Status:OK
LINK 2: ENET 0  0 13 01;CAP MS;Status:OK
LINK 3: ENET 1  0 23 01;CAP MS;Status:OK
LINK 4: ENET 0  0 13 02;CAP MS;Status:OK
LINK 5: ENET 1  0 23 02;CAP MS;Status:OK
LINK 6: ENET 0  0 13 03;CAP MS;Status:OK
LINK 7: ENET 1  0 23 03;CAP MS;Status:OK
```

10 Determine if the network on your switch is a junctored network (JNET) or enhanced network (ENET).

If the network	Do
is JNET	step 11
is ENET	step 18

11 Determine the MSB7 unit that is manual busy (0 or 1). Record the speech link numbers (0 to 31) that associate with the MSB7 unit. Even numbered speech links (0, 2, 4 ... 30) associate with MSB7 unit 0. Odd numbered speech links (1, 3, 5 ... 31) associate with MSB7 unit 1.

Note: Speech link numbers 5 to 30 do not appear in the example in step 9.

12 Record the network plane number, network module (pair) number, and network link number for each speech link recorded in step 11.

Note: Speech link 2 associates with network plane 0, network module number 3, and network link number 28. This association appears in the JNET example response in step 9.

13 To access the NET level of the MAP display, type

`>NET`

and press the Enter key.

14 To access the network link level for the first network link that you will busy, type

`>LINKS n`

and press the Enter key.

Emergency power conservation
Emergency shutdown of one unit of MSB7s (continued)

where

n
is the network module number recorded in step 12

15 To manually busy the first network link, type

```
>BSY  plane_no  link_no
```

and press the Enter key.

where

plane_no
is the network plane (0 or 1)

link_no
is the network link number

16 Repeat steps 14 and 15 until all links between the manual busy MSB7 unit and the network are manual busy. Go to step 17.

17 Wait 2 min. Go to step 25.

18 Determine the speech link numbers that associate with the manual busy MSB7 unit. Even numbered speech links associate with unit 0. Odd numbered speech links associate with unit 1.

Note: Speech links 0, 2, 4 and 6 associate with unit 0 in the ENET example response in step 9. Speech links 1, 3, 5, and 7 associate with MSB7 unit 1.

19 Record the ENET plane number, shelf number, card number, and network link number that associate with the ENET. Perform this procedure for each speech link recorded in step 18.

Note: Speech link 3 associates with ENET plane 1, shelf 0, card 23, and network link number 01. This association appears in the ENET example response in step 9.

20 To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

21 To access the MAP display for the first speech link and the ENET card that associates with this link, type

```
>SHELF  shelf_no;  CARD  card_no
```

and press the Enter key.

where

shelf_no
is the ENET shelf number

card_no
is the ENET card number

22 To deload traffic from the ENET card, type

```
>DELOAD   plane_no  SET
```

and press the Enter key.

Emergency power conservation
Emergency shutdown of one unit of MSB7s (continued)

where

plane_no
is the ENET plane number

23 To busy the first link recorded in step 18 from the ENET card to the PM unit, type

```
>BSY   plane_no  LINK  link_no
```

and press the Enter key.

where

plane_no
is the ENET plane number, recorded in step 19link_nois the network link number, recorded in step 19

24 Repeat steps 21 to 23 for each speech link recorded in step 18. Continue the procedure.

At the shelf that contains the inactive MSB7

25

WARNING
Static electricity damage
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Unseat the NT6X69 message protocol card from slot 20.

26 Unseat the NT6X45 signaling processor card from slot 16.

27 Unseat the NT6X45 master processor card from slot 11.

28 Unseat the NT6X46 signaling-processor memory card from slot 15.

29

WARNING
Loss of service
If you power down the active unit of the MSB7 or the power converter in slot 1, service loss occurs.

Pull down and set the handle of the NT2X70 power converter in slot 25 POWER switch to the OFF position.

30 Repeat steps 2 to 29 for one unit of each MSB7.

Emergency power conservation
Emergency shutdown of one unit of MSB7s (end)

31 Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

Index

L

M

P

R

S

V

W

X

DMS-100 Family

North American DMS-100

Recovery Procedures

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