Task Oriented Practice
(TOP)

GROWTH/DEGROWTH

4 *ESS*[TM] SWITCH

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TITLE PAGE	000

FIND YOUR JOB IN THE LIST BELOW . . . . THEN GO TO

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ESU; DIU, TSI Port — Special Growth to Operational — Change (Used by TELCO Personnel Only) NTP-024

ESU; DIU, TSI Port — Degrow (Used by TELCO Personnel Only NTP-026

ESU; DTU, TSI Port — Special Growth to Operational — Change (Used by TELCO Personnel Only) NTP-019

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ESU to EST — Add (Used by TELCO Personnel Only) NTP-021

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Functional Assignment(s) of DIU Digroup(s) (THW, THW5, and TDG) — Change (Used by TELCO Personnel Only) NTP-038

Insert EST With Existing TSI and VIF/DT/DIF (Support to Installer) NTP-012

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Standard Terminal Unit (2400 BPS); Enhanced Terminal Unit (4800 BPS) — Convert (Used by TELCO Personnel Only) . . NTP-036

Terminals to Enhanced Type (4800 BPS) on TGR Frame — Convert (Used by TELCO Personnel Only) NTP-025

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THW, THW5, and TDG; Add or Change Functional Assignment(s) of DIU Digroup(s) (Used by TELCO Personnel Only) . . . NTP-038

TGR Frame; CCIS — Add (Support to Installer) NTP-004

TGR Frame Complex; CCIS — Degrow (Support to Installer) NTP-034

TGR Supplementary Frame; CCIS — Add (Support to Installer) NTP-005

TSI Port; DIU, ESU — Special Growth to Operational — Change (Used by TELCO Personnel Only) NTP-024

TSI Port; DIU, ESU — Degrow (Used by TELCO Personnel Only) NTP-026

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FIND YOUR JOB IN THE LIST BELOW . . . . THEN GO TO

TSI Port; DTU, ESU — Degrow (Used by TELCO Personnel Only) NTP-020

TSI Port; DTU — Special Growth to Operational — Change (Used by TELCO Personnel Only) NTP-018

TSI Port; DTU, ESU — Special Growth to Operational — Change (Used by TELCO Personnel Only) NTP-019

TSI Port; VIU, ESU — Special Growth to Operational — Change (Used by TELCO Personnel Only) NTP-015

TSI Port; VIU — Special Growth to Operational — Change (Used by TELCO Personnel Only) NTP-014

TSI Port; VIU, ESU — Degrow (Used by TELCO Personnel Only). NTP-016

VIF Frame — Add (Support to Installer) NTP-003

VIF Frame — Degrow (Support to Installer) NTP-028

VIU, ESU, TSI Port — Special Growth to Operational — Change (Used by TELCO Personnel Only) NTP-015

VIU, TSI Port — Special Growth to Operational — Change (Used by TELCO Personnel Only) NTP-014

VIU, TSI Port, ESU — Degrow (Used by TELCO Personnel Only) NTP-016

VIU to VIF — Add (Support to Installer) NTP-009

VIU to VIF — Add (Used by TELCO Personnel Only) NTP-013

Acceptance tests are not required for
verification of the growth procedures
contained in this volume. The readiness
of a frame or unit to become a part of the
operating system is established by the
successful completion of the particular
growth procedure in its entirety.

ACCEPTANCE

			RESPONSIBILITY	
DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO
1	Assure That VIF Frame Power Verification Tests Have Been Completed and All Voiceband Interface Controller and VIU Plug-Ins Are Properly Installed and Firmly Seated		INST	—
2	Verify VIF and EST (If Applicable) Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:			
	1. Verify VIF UT Translator (**VER:UTYPE:VIF a!**)		TELCO/INST	DLP-508
	2. If EST Is Associated With Growth VIF, Verify ESU Submember Equipage and ESU to VIU Assignment in EST UT Translator (**VER:UTYPE:EST a!**)		TELCO/INST	DLP-546
	3. Compare Translation Data Against Wiring Records		INST	—
3	Verify TSI UT Translator and Compare Translations Data Against Wiring Records:			
	1. Determine Which TSI Frame Has Ports Connecting to Growth VIF		TELCO	—
	2. Verify TSI Port to VIU Assignment and TSI Port Submember Equipage Data of TSI UT Translator (**VER:UTYPE:TSI a!**)		TELCO/INST	DLP-548
	3. Compare Translation Data Against Wiring Records		INST	—
4	Remove Growth VIF Power Using Power Switches		INST	—
5	Set Member and Group Switches of Growth VIF Per Frame Assignments		INST	—
6	Connect Private Signal Leads		INST	—
7	Verify VIF Private Signal Leads		INST	—
8	Connect Alarm Cables		INST	—
9	Verify VIF Major and Minor Alarms		INST	—
10	Connect Network Clock Cables		INST	—
11	Recent Change and Verify Member Equipage UNEQ to GROW (VIF)		TELCO	DLP-500
12	Extend or Insert Peripheral Unit Bus Per TOP 234-153-045; Then Continue This Procedure at Item 13 Upon Completion		TELCO/INST	—
13	Enter **RMV:PUB 0!** To Remove Peripheral Unit Bus 0 From Service		TELCO	—

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
14	Apply Power to VIF Controllers 0 and 1 and Bus 0	INST	—
15	Diagnose VIF Controller 0 (PUB 0)	INST	—
16	Remove Power From Growth VIF Bus Interface Unit 0	INST	—
17	Restore Peripheral Unit Bus 0 to Service (**RST:PUB 0!**)	TELCO/INST	DLP-503
	NOTE: This is a safe point to temporarily stop this procedure.		
18	Enter **RMV:PUB 1!** To Remove Peripheral Unit Bus 1 From Service	TELCO	—
19	Apply Power to VIF Bus 1	INST	—
20	Diagnose VIF Controller 1 (PUB 1)	INST	—
21	If Any Repair or Maintenance Was Required to IPUB or Controller Access Circuitry During IPUB 1 Testing:		
	1. Remove Power From Growth VIF Bus Interface Unit 1	INST	—
	2. Restore Peripheral Unit Bus 1 to Service (**RST:PUB 1!**)	TELCO/INST	DLP-503
	3. Repeat From Item 13	TELCO/INST	—
22	Restore Peripheral Unit Bus 1 to Service (**RST:PUB 1!**)	TELCO/INST	DLP-503
	NOTE: This is a safe point to temporarily stop this procedure.		
23	Apply Power to Growth VIF Bus Interface Unit 0	INST	—
24	Recent Change and Verify Member Equipage GROW to SGRO (VIF)	TELCO	DLP-500
25	Diagnose VIF Controllers 0 and 1 (Specifying GROWTH)	INST	—
26	Assure That Power Is On for VIU 7; Then Diagnose, Specifying GROWTH	INST	—
27	Reinsert Plug-Ins for One VIU if Previously Removed	INST	—
28	Recent Change and Verify Submember Equipage UNEQ to GROW (One VIU)	TELCO	DLP-501
29	Diagnose One VIU (Specifying GROWTH)	INST	—
30	Recent Change and Verify Submember Equipage GROW to SGRO (One VIU)	TELCO	DLP-501
31	Enter Message To Apply Port Pest to Growth Associated TSI Port (**INH:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
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	NOTE: TSI port pest must remain in effect until instructed to remove in applicable procedure.		
32	Remove TSI Port Loop Cables and Connect Signal Cables at TSI/EST and One VIU	INST	—
33	Recent Change and Verify Submember Equipage UNEQ to GROW (TSI Port Connecting to One VIU)	TELCO	DLP-501
34	Recent Change and Verify Submember Equipage GROW to SGRO (TSI Port Connecting to One VIU)	TELCO	DLP-501
35	Diagnose Connecting TSI Controllers 0 and 1 (Specifying Appropriate Phase and GROWTH) and Restore	TELCO/INST	DLP-510
36	Diagnose One VIU (Specifying GROWTH)	INST	—
37	Repeat Items 27 Through 36 For Each VIU Initially Supplied	TELCO/INST	—
38	Diagnose VIF Controllers 0 and 1 Specifying PH 22 and GROWTH	INST	—
39	Complete Heat Test of VIF Frame and VIUs in SGRO State	TELCO/INST	—
	NOTE: TELCO will need to support installer in allowing repeated diagnostics of VIF and VIUs during heating interval.		
40	Assure That Buses 0 and 1 and Controller 0 Power Switches Are Powered Up With **OFF** Switches in Normal Position and Controller 1 Power Switch Powered Up With **OFF** Switch to **ROS**	INST	—
41	Recent Change and Verify Member Equipage SGRO to OPER (VIF)	TELCO	DLP-500
42	Assure That System Status for Associated TSI Indicates In-Service and Duplex Operation	TELCO	—
43	Enter Message To Restore and Initiate Controller 0 to Simplex Operation (**RST:VIF a,CONTR 0!**) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	—
44	Enter Message To Run Peripheral Unit Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
45	Restore and Initialize Controller 1 to Duplex Operation (Using Power Switch)	TELCO/INST	DLP-505
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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
46	Activation of VIU Equipment:		
	A. For Each VIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface With TSI Port Via Equipped ESU: Complete VIU/ESU/TSI Interface Using NTP-011 (Echo Suppressor Unit Growth)	TELCO/INST	—
	B. For Each VIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface Directly to TSI or Via Strap Through **FB619** Pack in EST (Unequipped ESU Position) Perform the Following:		
	1. Recent Change and Verify Submember Equipage SGRO to OPER (VIU Associated TSI Port)	TELCO	DLP-501
	2. Recent Change and Verify Submember Equipage SGRO to OPER (VIU Associated With TSI Port in Item 46.B.1)	TELCO	DLP-501
	3. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete **(MSG COMPL)**	TELCO	—
	4. Enter Message To Restore VIU (in Item 46.B.2) (**RST:VIF** a,**VIU** b!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
	5. Enter Message To Allow Growth Associated TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
	NOTES: 1. The terms first and second terminal units refer to primary (first) and backup (second) terminals of domestic terminal unit pair, or primary (first) and secondary (second) terminals of international terminal unit group. These terminal units are also referred to as mates. 2. Terminal units of domestic pair or international group must not be located in same terminal group (TGR) frame. 3. This procedure is also used to grow simplex complement type CCITT-6 international terminals.		
1	Verify Physical TGR Terminal Unit Equipment Initially Supplied at Growth TGR Frame and Mate Terminal TGR Location	INST	—
2	Assure That TGR Frame Power Verification Tests Have Been Completed	INST	—
3	Verify TGR Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
	1. Verify Octal Words 0 Through 20 of TGR UT Translator (**VER:UTYPE:TGR** a!)	TELCO/INST	DLP-514
	2. Verify Terminal Unit Data of TGR UT Translator for All Terminal Units Initially Supplied (**VER:UTYPE:TGR** a,**SME** b!)	TELCO/INST	DLP-585
	3. Compare Translations Data Against Wiring Records	INST	—
	4. If Enhanced Terminal, Verify Operational Status of Growth Associated CCDS Frame (**VER:UTYPE:CCDS** a,**ME!**)	TELCO/INST	DLP-586
4	Remove All Power From Growth TGR Frame(s): Controller 0 and Controller 1, PUB 0 and PUB 1, and Terminal Units Supplied	INST	—
5	Connect TGR Frame(s) Alarm Cabling	INST	—
6	Connect TGR Frame(s) Private Signal Leads	INST	—
7	Verify Scan and Signal Distributor (SD) Points	INST	—
8	Connect Terminal Transmission Cables and Adjust Amplifier and Pad Level:		
	1. Connect Terminal Transmission Cables	INST	—

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
8 (Contd)	2. Adjust Amplifier and Pad Level of Terminal Units Initially Supplied Per NTP-035; Then Continue This Procedure at Item 9 Upon Completion	TELCO/INST	—
9	If Growing Enhanced Terminals:		
	1. Assure That CCDS Frame Growth Is Completed	INST	—
	2. Assure That Cabling Between Growth Terminal Units and 2048A Data Sets Is Connected	INST	—
	3. Assure That 2048A Data Set Options Are Correctly Set and Data Set Operating in CONTINUOUS MODEM TEST Mode	INST	—
10	Recent Change and Verify Member Equipage UNEQ to GROW (TGR)	TELCO	DLP-500
11	Extend or Insert Peripheral Unit Bus Per TOP 234-153-045; Then Continue This Procedure at Item 12 Upon Completion	TELCO/INST	—
12	Enter **RMV:PUB 0!** To Remove Peripheral Unit Bus 0 From Service	TELCO	—
13	Power Up Frame Controllers 0 and 1 and Bus Interface Unit 0	INST	—
14	Diagnose Frame Controllers 0 and 1 (PUB 0)	INST	—
15	Remove Power From Bus Interface Unit 0	INST	—
16	Restore Peripheral Unit Bus 0 to Service (**RST:PUB 0!**)	TELCO/INST	DLP-503
17	Enter **RMV:PUB 1!** To Remove Peripheral Unit Bus 1 From Service	TELCO	—
18	Power Up Bus Interface Unit 1	INST	—
19	Diagnose Frame Controllers 0 and 1 (PUB 1)	INST	—
20	If Any Repair or Maintenance Was Required to IPUB or Controller Access Circuitry During IPUB 1 Testing:		
	1. Remove Power From Growth TGR Bus Interface Unit 1	INST	—
	2. Restore Peripheral Unit Bus 1 to Service (**RST:PUB 1!**)	TELCO/INST	DLP-503
	3. Repeat From Item 12		
21	Restore Peripheral Unit Bus 1 to Service (**RST:PUB 1!**)	TELCO/INST	DLP-503
22	Power Up Bus Interface Unit 0	INST	—

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	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
	NOTE: This is a safe point to temporarily stop this procedure.		
23	Recent Change and Verify Submember Equipage UNEQ to GROW (One Terminal Unit Supplied With Growth Frame)	TELCO	DLP-501
24	Repeat Item 23 for Each Additional Equipped Terminal Unit	TELCO	—
25	Power Up Terminal Units Supplied With Growth TGR Frame(s)	INST	—
26	Recent Change and Verify Member Equipage GROW to SGRO (TGR)	TELCO	DLP-500
27	Diagnose Frame Controllers 0 and 1 (Specifying Growth)	INST	—
	NOTE: This is a safe point to temporarily stop this procedure.		
28	Diagnose Terminal Units (Specifying RAW and Growth)	INST	—
29	Recent Change and Verify Submember Equipage GROW to SGRO [One Terminal Unit Supplied With Growth Frame(s)]	TELCO	DLP-501
30	Repeat Item 29 for Each Additional Equipped Terminal Unit	TELCO	—
31	Assure That **OFF** Switches for All Terminal Units Supplied Are in Normal Position	INST	—
32	Diagnose Terminal Units (Specifying Growth)	INST	—
	NOTE: This is a safe point to temporarily stop this procedure.		
33	Complete Heat Test of TGR Frame and Terminal Units	TELCO/INST	—
	NOTE: TELCO will need to support Installer in allowing repeated diagnostics of TGR and units during heating intervals.		
34	Assure That Buses 0 and 1 and Controller 0 Power Switches Are Powered Up With **OFF** Switches in Normal Position and Controller 1 Power Switch Powered Up With **OFF** Switch to **ROS**	INST	—
35	Enter Message to Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
	NOTE: This is a safe point to temporarily stop this procedure.		
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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
	CAUTION: Items 36 through 39 must be performed without interruption during periods of light traffic in the office. If any repairs are needed and cannot be completed before the office busy hours, the growth TGR member equipage must be temporarily degrown [DLP-526] to special growth until the work can be continued.		
36	Recent Change and Verify Member Equipage SGRO to OPER (TGR)	TELCO	DLP-500
37	Enter Message To Restore and Initialize Controller 0 to Simplex Operation (RST:TGR a,CONTR 0!). ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	—
38	Restore and Initialize Controller 1 to Duplex Operation (Using Power Switch)	TELCO/INST	DLP-505
39	Diagnose Growth TGR Frame PUB Interface Units:		
	1. Enter Message to Diagnose Growth TGR Frame PUB Interface Unit (PUB 0) (RST:TGR a,IPUB 0!). ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	—
	2. Enter Message to Diagnose Growth TGR Frame PUB Interface Unit (PUB 1) (RST:TGR a,IPUB 1!). ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	—
	NOTE: This is a safe point to temporarily stop this procedure.		
40	Activate Simplex or Paired Terminal Units to Operational:		
	A. For Terminal Units Which Have Mate Terminal Units and Not in Special Growth State: Complete Mate Terminal Growth and Activation of Both Terminal Units Using Applicable Growth Procedures	TELCO/INST	—
	B. For a Simplex Complement CCITT-6 Terminal, Perform the Following:		
	1. Perform Functional Word Change of TGR Terminal Unit LOOP Data To Allow Terminal Self-Synchronization (One Terminal Unit — Using RC Form 801)	TELCO	DLP-532
	2. If Audit 49 Was Not Previously Inhibited, Enter INH:AUD:NUM 49!	TELCO	—
	3. Recent Change and Verify Submember Equipage SGRO to OPER (One Terminal Unit)	TELCO	DLP-501

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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
40 **(Contd)** NOTE: It can take 5 minutes or longer for terminal unit to pass the initial synchronization test.		
4. Restore One Terminal Unit to Service (`RST:TGR a,TER b!`), and Verify Status of Terminal and Signaling Link	TELCO/INST	DLP-587
NOTE: Do not proceed until the first terminal unit has been self-synchronized.		
5. Enter `ALW:AUD:NUM 49!`	TELCO	—
6. Enter `AUD:NUM 49!`; Wait for `AUD:NUM 49 COMPLETE 0 ERRORS DETECTED` Output Message	TELCO	—
C. For Terminal Units Which Have Mates in Special Growth State, Perform the Following:		
1. Perform Functional Word Change of TGR Terminal Unit LOOP Data To Allow Terminal Self-Synchronization (One Terminal Unit — Using RC Form 801)	TELCO	DLP-532
2. Repeat Item 40.C.1 for Mate Terminal Unit		
3. If Audit 49 Was Not Previously Inhibited, Enter `INH:AUD:NUM 49!`	TELCO	—
4. Recent Change and Verify Submember Equipage SGRO to OPER (One Terminal Unit)	TELCO	DLP-501
5. Repeat Item 40.C.4 for Mate Terminal Unit		
NOTE: It can take 5 minutes or longer for terminal unit to pass the initial encryption validation test.		
6. Restore One Terminal Unit to Service (`RST:TGR a,TER b!`), and Verify Status of Terminal and Signaling Link	TELCO/INST	DLP-587
NOTE: Do not proceed until the first terminal unit has been self-synchronized.		
7. Enter `ALW:AUD:NUM 49!`	TELCO	—
8. Enter `AUD:NUM 49!`; Wait for `AUD:NUM 49 COMPLETE 0 ERRORS DETECTED` Output Message	TELCO	—
9. Restore Mate Terminal Unit to Service (`RST:TGR a,TER b!`) and Verify Status of Terminal and Signaling Link	TELCO/INST	DLP-587

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
40 (Contd)	10. If Additional Terminal Units Are To Be Activated at This Time, Repeat Item 40.C for Each Additional Terminal Unit To Be Activated	TELCO/INST	—

	NOTE: The terminal units are now operational and self-synchronized. When VFLs are ready
	    for activation, trunk operations center (TOC) circuit order procedures are required
	    to place the interoffice links in service:
	    TOP 234-103-020AC (Domestic)
	    TOP 234-150-101 (International).		

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
	RESPONSIBILITY	
NOTES: 1. The terms first and second terminal unit refer to primary (first) and backup (second) terminal of a domestic terminal unit pair, or primary (first) and secondary (second) terminal of an international terminal unit group. These terminal units are also referred to as mates. 2. Terminal units of a domestic pair or international group must not reside in the same terminal group (TGR) frame. 3. This procedure is also used to grow simplex complement type CCITT-6 international terminals.		
1 Verify Physical TGR Terminal Unit Equipment Initially Supplied at Growth Supplementary Frame and Mate Terminal TGR Location	INST	—
2 Assure That TGR Supplementary Frame Power Verification Tests Have Been Completed	INST	—
3 Verify Growth Terminal Unit Data of TGR Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
1. Verify TGR UT Translator Data for One Growth Terminal Unit and Mate Terminal Unit (**VER:UTYPE:TGR** a**,SME** b!)	TELCO/INST	DLP-585
2. Compare Translations Data Against Wiring Records	INST	—
4 Diagnose and Restore Operational TGR Frame Controllers	TELCO	DLP-515
5 Turn Power Switch Off for Growth Terminal Unit(s)	INST	—
6 Connect Power Control and Alarm Cable Between Basic and Supplementary Frame and Verify Alarms	INST	—
7 Connect Flat Tape Cabling to Growth Terminal Unit(s)	INST	—
8 Connect and Verify Terminals Unit(s) Private Signal Leads	INST	—
9 Connect Terminal Transmission Cables and Adjust Amplifier and Pad Level:		
1. Connect Terminal Transmission Cables	INST	—
2. Adjust Amplifier and Pad Level of Terminal Units Initially Supplied per NTP-035; Then Continue This Procedure at Item 10 Upon Completion	TELCO/INST	—
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ADD SUPPLEMENTARY FRAME(S) TO OPERATIONAL CCIS TERMINAL GROUP — SUPPORT TO INSTALLER (INST)

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	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
10	If Growing Enhanced Terminals:		
	1. Assure That CCDS Frame Growth Is Completed	INST	—
	2. Assure That Cabling Between Growth Terminal Units and 2048A Data Sets Is Connected	INST	—
	3. Assure That 2048A Data Set Options Are Correctly Set and Data Set Operating in CONTINUOUS MODEM TEST Mode	INST	—
11	At Growth Associated TGR Basic Frame Controller 0 Power Switch, Rotate **OFF** Switch to **ROS**	TELCO	—
12	Connect Flat Tape Cabling From One Growth Terminal Unit to Terminal Access Controller 0	INST	—
13	Diagnose Growth Associated TGR Frame Controller Using Power Switch (Controller 0)	TELCO/INST	DLP-516
14	At Growth Associated TGR Basic Frame Controller 1 Power Switch, Rotate **OFF** Switch to **ROS**	TELCO	—
15	Connect Flat Tape Cabling From One Growth Terminal Unit to Terminal Access Controller 1	INST	—
16	Diagnose Growth Associated TGR Frame Controller Using Power Switch (Controller 1)	TELCO/INST	DLP-516
	NOTE: This is a safe point to temporarily stop this procedure.		
17	Power Up One Growth Terminal Unit	INST	—
18	Recent Change and Verify Submember Equipage UNEQ to GROW (One Terminal Unit)	TELCO	DLP-501
19	Diagnose Growth Terminal Unit (One Terminal Unit) (**DGN:TGR a,TER b;RAW:GROWTH!**); INST Resolve Problems Associated With Growth Equipment:		
	A. If Growing Standard Terminals, Assure That Phases 1 Through 15 Ran ATP	TELCO/INST	—
	B. If Growing Enhanced Terminals, Assure That Phases 1 Through 13, 17, 18, and 19 Ran ATP (PH 14-15 NTR, PH 16 No Response)	TELCO/INST	—
	NOTE: This is a safe point to temporarily stop this procedure.		
20	Recent Change and Verify Submember Equipage GROW to SGRO (One Terminal Unit)	TELCO	DLP-501
21	Diagnose Growth Terminal Unit (One Terminal Unit) (**DGN:TGR a,TER b;RAW:GROWTH!**); INST Resolve Problems Associated With Growth Equipment:		
	A. If Growing Standard Terminals, Assure That Phases 1 Through 15 Ran ATP	TELCO/INST	—
	B. If Growing Enhanced Terminals, Assure That Phases 1 Through 13, 17, 18, and 19 Ran ATP (PH 14-15 NTR, PH 16 No Response)	TELCO/INST	—

ADD SUPPLEMENTARY FRAME(S) TO OPERATIONAL CCIS TERMINAL GROUP — SUPPORT TO INSTALLER (INST)

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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
NOTE: This is a safe point to temporarily stop this procedure.		
22	Repeat Items 11 Through 21 for Each Additional Equipped Terminal Unit	TELCO/INST	—
23	Activate Simplex or Paired Terminal Unit(s) to Operational:		
	A. For Terminal Units Which Have Mate Terminal Units and Not in Special Growth State: Complete Mate Terminal Growth and Activation of Both Terminal Units Using Applicable Growth Procedures	TELCO/INST	—
	B. For Simplex Complement CCITT-6 Terminal Units, Perform the Following:		
	1. Perform Functional Word Change of TGR Terminal Unit Loop Data To Allow Terminal Self-Synchronization (One Terminal Unit — Using RC Form 801)	TELCO	DLP-532
	2. If Audit 49 Was Not Previously Inhibited, Enter **INH:AUD:NUM 49!**	TELCO	—
	3. Recent Change and Verify Submember Equipage SGRO to OPER (One Terminal Unit)	TELCO	DLP-501
	NOTE: It can take 5 minutes or longer for terminal to pass initial synchronization test.		
	4. Restore One Terminal Unit to Service (**RST:TGR a,TER b!**) and Verify Status of Terminal Unit and Signaling Link	TELCO/INST	DLP-587
	NOTE: Do not proceed until the first terminal unit has been self-synchronized.		
	5. Enter **ALW:AUD:NUM 49!**	TELCO	—
	6. Enter **AUD:NUM 49!**; Wait for **AUD:NUM 49 COMPLETE 0 ERRORS DETECTED** Output Message	TELCO	—
	C. For Terminal Units Which Have Mates in Special Growth State, Perform the Following:		
	1. Perform Functional Word Change of TGR Terminal Unit Loop Data to Allow Terminal Self-Synchronization (One Terminal Unit — Using RC Form 801)	TELCO	DLP-532
	2. Repeat Item 23.C.1 for Mate Terminal Unit	TELCO	—
	3. If Audit 49 Was Not Previously Inhibited, Enter **INH:AUD:NUM 49!**	TELCO	—
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23 (Contd)	4. Recent Change and Verify Submember Equipage SGRO to OPER (One Terminal Unit)	TELCO	DLP-501
	5. Repeat Item 23.C.4 for Mate Terminal Unit	TELCO	—
	NOTE: It can take 5 minutes or longer for terminal to pass initial encryption validation test.		
	6. Restore One Terminal Unit to Service (**RST:TGR a,TER b!**) and Verify Status of Terminal Unit and Signaling Link	TELCO/INST	DLP-587
	NOTE: Do not proceed until the first terminal unit has been self-synchronized.		
	7. Enter **ALW:AUD:NUM 49!**	TELCO	—
	8. Enter **AUD:NUM 49!**; Wait for **AUD:NUM 49 COMPLETE 0 ERRORS DETECTED** Output Message	TELCO	—
	9. Restore Mate Terminal Unit to Service (**RST:TGR a,TER b!**) and Verify Status of Terminal Unit and Signaling Link	TELCO/INST	DLP-587
	10. If Additional Terminal Units Are To Be Activated at This Time, Repeat Items 23.C.1 Through 23.C.9 for Each Additional Terminal Unit To Be Activated	TELCO/INST	—

	NOTE: The terminal units are now operational and self-synchronized. When VFLs are ready
	   for activation, trunk operations center (TOC) circuit order procedures are required
	   to place the interoffice links in service:
	   TOP 234-103-020AC (Domestic)
	   TOP 234-150-101 (International).		

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
	NOTES: 1. The terms first and second terminal unit in this procedure refers to primary (first) and backup (second) terminal of a domestic terminal unit pair, or primary (first) and secondary (second) terminal of an international terminal unit group. These terminal units are also referred to as mates. 2. Terminal units of a domestic pair or international group must not reside in the same terminal group (TGR) frame. 3. This procedure is also used to grow simplex complement type CCITT-6 international type terminals.		
1	If This Procedure Was Entered as Result of TGR Frame Growth, Continue This Procedure at Item 3		
2	Verify Growth Terminal Unit Data of TGR Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
	1. Verify TGR UT Translator Data for One Growth Terminal Unit and Mate Terminal Unit (VER:UTYPE:TGR a,SME b!)	TELCO/INST	DLP-585
	2. Compare Translations Data Against Wiring Records	INST	—
3	Diagnose and Restore Operational TGR Frame Controllers	TELCO	DLP-515
4	Turn Power Switch Off for Growth Terminal Unit	INST	
5	Install Growth Terminal Unit	INST	—
6	Connect Intraframe Power Cabling to Growth Terminal Unit	INST	—
7	Connect Flat Tape Cabling to Growth Terminal Unit	INST	—
8	Connect and Verify Terminal Unit Private Signal Leads	INST	—
9	Adjust Amplifier and Pad Level of Growth Terminal Unit Per NTP-035; Then Continue This Procedure at Item 10 Upon Completion	TELCO/INST	—
10	If Growing Enhanced Terminals:		
	1. Assure That CCIS Data Set (CCDS) Frame Growth Is Completed	INST	—
	2. Assure That Cabling Between Growth Terminal Units and 2048A Data Sets Is Connected	INST	—

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DO THE ITEMS BELOW IN THE ORDER LISTED		FOR DETAILS, GO TO	
10 (Contd)	3. Assure That 2048A Data Set Options Are Correctly Set and Data Set Operating in CONTINUOUS MODEM TEST Mode	INST	—
11	Install Dc-to-Dc Converter Packs and Fuses	INST	—
12	At TGR Basic Frame Controller 0 Power Switch, Rotate **OFF** Switch to **ROS**	TELCO	—
13	Connect Flat Tape Cabling From Growth Terminal Unit to Terminal Access Controller 0	INST	—
14	Diagnose TGR Frame Controller Using Power Switch (Controller 0)	TELCO/INST	DLP-516
15	At TGR Basic Frame Controller 1 Power Switch, Rotate **OFF** Switch to **ROS**	TELCO	—
16	Connect Flat Tape Cabling From Growth Terminal Unit to Terminal Access Controller 1	INST	—
17	Diagnose TGR Frame Controller Using Power Switch (Controller 1)	TELCO/INST	DLP-516
	NOTE: This is a safe point to temporarily stop this procedure.		
18	Power Up Growth Terminal Unit	INST	—
19	Recent Change and Verify Submember Equipage UNEQ to GROW (One Terminal Unit)	TELCO	DLP-501
20	Diagnose TGR Terminal Unit (One Terminal Unit) (DGN:TGR a,TER b;RAW:GROWTH!); INST Resolve Problems Associated With Growth Equipment		
	A. If Growing Standard Terminal(s), Assure That Phases 1 Through 15 Ran ATP	TELCO/INST	—
	B. If Growing Enhanced Terminals, Assure That Phases 1 Through 13, 17, 18, and 19 Ran ATP (PH 14-15 NTR, PH 16 No Response)	TELCO/INST	—
	NOTE: This is a safe point to temporarily stop this procedure.		
21	Recent Change and Verify Submember Equipage GROW to SGRO (One Terminal Unit)	TELCO	DLP-501
22	Diagnose Terminal Unit (One Terminal Unit) (DGN:TGR a,TER b;RAW:GROWTH!); INST Resolve Problems Associated With Growth Equipment		
	A. If Growing Standard Terminal(s), Assure That Phases 1 Through 15 Ran ATP	TELCO/INST	—
	B. If Growing Enhanced Terminals, Assure That Phases 1 Through 13, 17, 18, and 19 Ran ATP (PH 14-15 NTR, PH 16 No Response)	TELCO/INST	—
	NOTE: This is a safe point to temporarily stop this procedure.		
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	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
23	If Mate Terminal Unit Is Located in Another Operational TGR Frame and Terminal Unit Is Still Unequipped As Verified in Item 2, Repeat Items 3 Through 22 for Mate Terminal Unit	TELCO/INST	—
24	Activate First and Second Terminal Units to Operational:		
	A. If Mate Terminal Unit Has Not Been Brought to Special Growth Per Item 23, Growth of the Mate Terminal Unit and Activation of Both Terminal Units Are Completed in Applicable Growth Procedure	TELCO/INST	—
	B. For a Simplex Complement CCITT-6 Terminal, Perform the Following:		
	1. Perform Functional Word Change of TGR Terminal Unit Loop Data To Allow Terminal Self-Synchronization (One Terminal Unit — Using RC Form 801)	TELCO	DLP-532
	2. Enter INH:AUD:NUM 49!	TELCO	—
	3. Recent Change and Verify Submember Equipage SGRO to OPER (One Terminal Unit)	TELCO	DLP-501
	NOTE: It can take 5 minutes or longer for terminal unit to pass initial synchronization test.		
	4. Restore One Terminal Unit to Service (RST:TGR a,TER b!) and Verify Status of Growth Terminal and Signaling Link	TELCO/INST	DLP-587
	NOTE: Do not proceed until the first terminal unit has been self-synchronized.		
	5. Enter ALW:AUD:NUM 49!	TELCO	—
	6. Enter AUD:NUM 49!; Wait for AUD:NUM 49 COMPLETE 0 ERRORS DETECTED Output Message Before Proceeding	TELCO	—
	C. If Mate Terminal Unit Is in SGRO State, Activation of Both Terminal Units Is Completed As Follows:		
	1. Perform Functional Word Change of TGR Terminal Unit Loop Data To Allow Terminal Self-Synchronization (One Terminal Unit — Using RC Form 801)	TELCO	DLP-532
	2. Repeat Item 24.C.1 for Mate Terminal Unit	TELCO	—
	3. Enter INH:AUD:NUM 49!	TELCO	—
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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
24 (Contd)	4. Recent Change and Verify Submember Equipage SGRO to OPER (One Terminal Unit)	TELCO	DLP-501
	5. Repeat Item 24.C.4 for Mate Terminal Unit	TELCO	—
	NOTE: It can take 5 minutes or longer for terminal unit to pass initial encryption validation test.		
	6. Restore One Terminal Unit to Service RST:TGR a,TER b!) and Verify Status of Growth Terminal and Signaling Link	TELCO/INST	DLP-587
	NOTE: Do not proceed until the first terminal unit has been self-synchronized.		
	7. Enter ALW:AUD:NUM 49!	TELCO	—
	8. Enter AUD:NUM 49!; Wait for AUD:NUM 49 COMPLETE 0 ERRORS DETECTED Output Message Before Proceeding	TELCO	—
	9. Restore Mate Terminal Unit to Service (RST:TGR a,TER b!) and Verify Status of Growth Terminal and Signaling Link	TELCO/INST	DLP-587
	NOTE: The terminal units are now operational and self-synchronized. When VFLs are ready for activation, trunk operational center (TOC) circuit order procedures are required to place the interoffice links in service: TOP 234-103-020AC (Domestic) TOP 234-150-101 (International).		

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
1	Complete Preliminary Work Activities:		
	1. Verify That DT Power Verification Tests Have Been Completed	INST	—
	2. If CCIS DTs Are Being Added to Operational SP2 Complex and SP-DT Interface Unit Circuit Packs for SP2EQ1 Are Not Installed, Delay Installation Until Called for in This Procedure	INST	—
2	Verify DT and EST (If Applicable) Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
	1. Verify DT UT Translator (**VER:UTYPE:DT** a!)	TELCO/INST	DLP-518
	2. If EST Is Associated With DT, Verify ESU Submember Equipage and ESU to DTU Assignment in EST UT Translator (**VER:UTYPE:EST** a!)	TELCO/INST	DLP-546
	3. Compare Translations Data Against Wiring Records	INST	—
3	Verify Time Slot Interchange (TSI) Frame UT Translator and Compare Translations Data Against Wiring Records:		
	1. Determine Which TSI Frame(s) Have Ports Connecting to Growth DT Frame	TELCO	—
	2. Verify TSI Port to DTU Assignment and TSI Port Equipage Data of TSI UT Translator (**VER:UTYPE:TSI** a!)	TELCO/INST	DLP-548
	3. Compare Translations Data Against Wiring Records	INST	—
4	Verify SP2 Port Assignment and Equipage Status of Connecting SP2 Equipment (**VER:UTYPE:SP** a!)	TELCO/INST	DLP-517
5	If Connecting SP2 Member Equipage Is Not OPER Equipage State (11) As Determined in Item 4, Discontinue This Growth Procedure	TELCO/INST	—
6	Establish SGRO Equipage State for Connecting SP2 to DT Interface Circuit:		
	A. If SP-DT Submember Equipage (SP2EQ0/1) As Determined in Item 4 Is Marked Operational, Continue This Procedure at Item 7	TELCO/INST	—
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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
6 (Contd)	B. If SP-DT Submember Equipage (SP2EQ1) As Determined in Item 4 Is Marked Unequipped and CCIS Type DTs Are Being Added, Recent Change and Verify Submember Equipage UNEQ to GROW (SP2EQ1)	TELCO	DLP-501
	C. If SP-DT Interface Unit Circuit Packs for SP2EQ1 Are Not Installed As Determined in Item 1		
	1. Remove Connecting SP2 Controller 0 From Service (RMV:SP a,CONTR 0!)	TELCO	—
	2. Remove Power From Connecting SP2 Controller 0 Using CONTR0 Power Switch	TELCO	—
	3. Install Controller 0 Circuit Packs for SP2EQ1	INST	—
	4. Restore Controller 0 Power Using CONTR0 Power Switch	TELCO/INST	DLP-507
	5. Diagnose and Restore Connecting SP2 Controller 0, Specifying GROWTH	TELCO/INST	DLP-509
	6. Repeat Item 6.C.1 Through 5, Substituting Controller 1 for Controller 0	TELCO/INST	—
	D. If SP2-DT Submember Equipage SP2EQ0/1 Is in Grow State, Recent Change and Verify Submember Equipage GROW to SGRO (SP2EQ0/1)	TELCO	DLP-501
7	Remove Power From Controllers 0 and 1 and From Equipped Digroup Terminal Units (DTU) 0-8 Using Power Switches	INST	—
8	Connect Private Signal Leads Per Equipment Specification and Verify	INST	—
9	Complete Alarm Wiring Per Equipment Specification	INST	—
10	Install Transmission Cables and Verify That Looping Devices for DT-TSI Ports Are Installed at DT Frame and Looping Devices for Transmission Facilities Are Installed at DT Frame, DSX, LT-1, or Repeater Bays	INST	—
11	Connect SP2 to DT Frame Interface Cables and TSI Clock Interface Cables Per Equipment Specification	INST	—
12	Apply Power to DT Frame Controllers 0 and 1 and to DTU 8 Using Power Switches	INST	—
13	Recent Change and Verify Member Equipage UNEQ to GROW (DT)	TELCO	DLP-500
14	Diagnose DT Specifying PH 12 (Bootstrap Phase)	INST	—
15	Diagnose DT All Phases (1 Through 11)	INST	—
16	Recent Change and Verify Number Equipage GROW to SGRO (DT)	TELCO	DLP-500

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
17	If Adding Other Growth DT Frame(s) to Same SP2 and if Concurrent DT Frame Growth is Required, Repeat Items 1 Through 16 for Additional Growth DT Frame(s)	TELCO/INST	—
18	Recent Change and Verify Submember Equipage UNEQ to GROW (One DTU, One DT Frame)	TELCO	DLP-501
19	Verify That Converter Power Switches for Selected DTU Are On	INST	—
20	Apply Power to Selected DTU Using Associated **PWR OFF** Switch on Fuse and Alarm Panel	INST	—
21	Diagnose Growth DTU (of Item 20) Specifying PH 1, 5 and GROWTH	INST	—
22	Recent Change and Verify Submember Equipage GROW to SGRO (One DTU)	TELCO	DLP-501
23	Enter Message to Apply Port Pest to Growth Associated TSI Port (**INH:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
24	Connect TSI Port Cables:		
	A. If No EST Exists Between Growth DTU and Associated TSI: Remove TSI Port Loop Cables or H Connector, as Applicable, and DTU Output Loop Cables and Connect Signal Cables at One DTU and TSI Port	INST	—
	B. If EST Exists Between Growth DTU and Associated TSI and the ESU Is Not Equipped (Strap Thru Condition): Connect Signal Cables at ESU Strap Pack, One DTU, and TSI Port	INST	—
25	Recent Change and Verify Submember Equipage UNEQ to GROW (TSI Port Connecting to DTU in Item 24)	TELCO	DLP-501
26	Recent Change and Verify Submember Equipage GROW to SGRO (TSI Port of Item 25)	TELCO	DLP-501
27	Diagnose and Restore Connecting TSI Controllers 0 and 1 (Specifying PH 13 or 20 and GROWTH):		
	A. Specify PH 13 for J4A001A	TELCO/INST	DLP-510
	B. Specify PH 20 for J4A001B	TELCO/INST	DLP-510
28	Diagnose Growth DTU (Specifying PH 1, 5 and GROWTH)	INST	—
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	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
29	Repeat Items 18 Through 28 for Each Additional DTU Initially Supplied; When Last DTU Has Been Brought to Special Growth Through Item 28:	TELCO/INST	—
	1. After Diagnostic Message Is Entered in Item 29.2, At Growth DT Frame: Observe That Protection Switch Occurs During Execution of Phase 10 for Each DTU	TELCO/INST	—
	2. Diagnose Growth DT Frame Specifying PH 1 Through 11 and GROWTH	INST	—
30	If Adding Other Growth DT Frame(s) and Only if in Special Growth State Per Item 16, Repeat Items 18 Through 29 for All DTUs Equipped on Each Growth DT Frame	TELCO/INST	—
31	If Submember Equipage Status of SP2EQ0/1 Is SGRO, Recent Change and Verify Submember Equipage SGRO to OPER (SP2EQ0/1 of Connecting SP2)	TELCO	DLP-501
32	Complete Heat Test of DT Frame(s) and DTUs in SGRO State	TELCO/INST	—
	NOTE: TELCO will need to support installer in allowing repeated diagnostics of DT frame(s) and DTUs during heat test interval.		
33	Recent Change and Verify Member Equipage SGRO to OPER (One Growth DT)	TELCO	DLP-500
34	Enter Message to Run Peripheral Unit Status Audit (AUD:PUSTAT!); Wait for Message Complete (MSG COMPL)	TELCO	—
35	Enter Message To Restore and Initialize DT Controllers 0 and 1 (RST:DT a,CONTR b!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	—
36	Enter Message To Restore DTU 8 (RST:DT a,DTU 8!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
37	If Adding Other Growth DT Frame(s) and Only if in Special Growth State Per Item 16, Repeat Items 33 Through 36 for Additional Growth DT Frame(s)	TELCO/INST	—
38	Activation of DTU Equipment	TELCO/INST	—
	A. For Each DTU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface With TSI Port Via Equipped ESU, Complete DTU/ESU/TSI Interface Using NTP-011 (Echo Suppressor Growth)	TELCO/INST	—
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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
38 (Contd)	B. For Each DTU With Trunks Connected or Transmission Equipment Ready for Test That Is to Interface Directly to TSI or Via Strap Through **FB619** Pack in EST (Unequipped ESU Position), Perform the Following:		
	1. Recent Change and Verify Submember Equipage SGRO to OPER (DTU Associated TSI Port)	TELCO/INST	DLP-501
	2. Recent Change and Verify Submember Equipage SGRO to OPER (DTU Associated With TSI Port in Item 38.B.1	TELCO/INST	DLP-501
	3. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
	4. Enter Message To Restore DTU (in Item 38.B.2) (**RST:DT** a,**DTU** b!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
	5. Enter Message To Allow Growth Associated TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
	NOTE: The current state of the digroup status memory for each digroup associated with the DTU being activated may be obtained by entering **OP:DGSTAT,DT** a,**DTU** b,**DG O;DETL:NUM 5,STAT ALL!**		
39	If Adding Other Growth DT Frame(s) to Same SP2 and DT Frame(s) Are Still in Unequipped State, Repeat Items 1 Through 38 for Additional Growth DT Frames(s)	TELCO/INST	—

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Determine From Equipment Order DTU To Be Added	INST	—
2	Verify DT and EST (if Applicable) Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
	1. Verify DTU to TSI Port Assignment, Version Number and Growth DTU Equipage Status in DT UT Translator (**VER:UTYPE:DT** a!)	TELCO/INST	DLP-519
	2. If ESU Is Associated With Growth DTU, Verify ESU Submember Equipage and ESU to DTU Assignment of EST UT Translator (**VER:UTYPE:EST** a!)	TELCO/INST	DLP-546
	3. Compare Translations Data Against Wiring Records	INST	—
3	Verify Time Slot Interchange (TSI) Frame UT Translator and Compare Translations Data Against Wiring Records:		
	1. Determine Which TSI Frame Has Port Connecting to Growth DTU	TELCO	—
	2. Verify TSI Port to DTU Assignment and TSI Port Equipage Data of TSI UT Translator (**VER:UTYPE:TSI** a!)	TELCO/INST	DLP-548
	3. Compare Translations Data Against Wiring Records	INST	—
4	Diagnose DT Controllers 0 and 1 Using Restore Message (**RST:DT** a,**CONTR** b!)	TELCO	DLP-521
5	Visually Inspect Backplane Area of Growth DTU for Bent Pins and Crosses	INST	—
6	Assure That Power to Growth DTU Is Off Using Associated **PWR OFF** Switch on Fuse and Alarm Panel	INST	—
7	Install DTU Circuit Packs and Power Converters	INST	—
8	Assure That Cables Between DT Frame and DSX, Repeater Bays or LT-1 Are Installed and Looping Devices at DT Frame for DT-TSI Interface and at DSX-1 Patch Panel or DS-1 Facility for DS-1 Cables Are Installed	INST	—
9	Recent Change and Verify Submember Equipage UNEQ to GROW Using RC Form 700 (DTU)	TELCO	DLP-501
10	Verify That Converter Power Switches for Growth DTU Are ON	INST	—
11	Apply Power to Growth DTU Using Associated **PWR OFF** Switch on Fuse and Alarm Panel	INST	—
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	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
12	Enter Message To Diagnose Growth DTU, Specifying PH 1,5, and GROWTH (**DGN:DT** a,**DTU** b:**PH (1,5),GROWTH!**) ATP Required; INST Resolve Problems Associated With Growth Equipment	TELCO/INST	—
13	Recent Change and Verify Submember Equipage GROW to SGRO Using RC Form 700 (DTU)	TELCO/INST	DLP-501
14	Enter Message to Apply Port Pest to Growth Associated TSI Port (**INH:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
15	Connect Data Cables:		
	A. If No EST Exists Between Growth DTU and Associated TSI: Remove TSI Port Loop Cables or H Connector as Applicable and DTU Output Loop Cables and Connect Data Cables at TSI Port and Growth DTU	INST	—
	B. If EST Exists Between Growth DTU and Associated TSI and: (a) Growth DTU Does Not Require Echo Suppression, or (b) The ESU Is Not Equipped, Connect Data Cables at ESU Strap Pack and Growth DTU	INST	—
16	Recent Change and Verify Submember Equipage UNEQ to GROW Using RC Form 700 (TSI Port Connecting to Growth DTU)	TELCO	DLP-501
17	Recent Change and Verify Submember Equipage GROW to SGRO Using RC Form 700 (TSI Port of Item 16)	TELCO	DLP-501
18	Diagnose and Restore Connecting TSI Controllers 0 and 1 (Specifying PH 13 or 20 and GROWTH):		
	A. Specify PH 13 for J4A001A	TELCO/INST	DLP-510
	B. Specify PH 20 for J4A001B	TELCO/INST	DLP-510
19	Enter Message To Diagnose Growth DTU Specifying PH 1, 5 and GROWTH (**DGN:DT** a,**DTU** b:**PH (1,5),GROWTH!**) ATP Required; INST Resolve Problems Associated With Growth Equipment	TELCO/INST	—
20	Repeat Items 1 Through 19, as Applicable, for Each Additional DTU To Be Added Into This DT Frame	TELCO/INST	—
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		DO THE ITEMS BELOW IN THE ORDER LISTED	FOR	DETAILS, GO TO
21		When Last DTU Has Been Grown Into This DT Frame:		
		1. After Diagnostic Message Is Entered in Item 21.2, At DT Frame Under Test: Observe That Protection Switch Occurs During Execution of Phase 10 for Each Operational and Growth DTU	TELCO/INST	—
		2. Enter Message To Diagnose DT Frame Specifying PH 1 Through 11 and GROWTH (DGN:DT a:PH 1-11,GROWTH!) ATP Required; INST Resolve Problems Associated With Growth Equipment	TELCO/INST	—
22		Activation of DTU Equipment:		
		A. For Each DTU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface to TSI Port Via Equipped ESU, Complete DTU/ESU/TSI Interface Using NTP-011 (Echo Suppressor Growth)	TELCO/INST	—
		B. For Each DTU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface Directly to TSI or Via Strap Through **FB619** Pack in EST (Unequipped ESU Position), Perform the Following:		
		1. Recent Change and Verify Submember Equipage SGRO to OPER Using RC Form 700 (DTU Associated TSI Port)	TELCO	DLP-501
		2. Recent Change and Verify Submember Equipage SGRO to OPER Using RC Form 700 (Growth DTU)	TELCO	DLP-501
		3. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
		4. Enter Message To Restore Growth DTU (**RST:DT a,DTU b!**) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
		5. Enter Message To Allow Growth Associated TSI Port (**ALW:TSI a,SPC b,PORT c!**)	TELCO	—
		NOTE: The current state of the digroup status memory for each digroup associated with the DTU being activated may be obtained by entering OP:DGSTAT,DT a,DTU b,DG O;DETL:NUM 5,STAT ALL!		

ADD DIGROUP TERMINAL UNIT(S) TO OPERATIONAL DIGROUP TERMINAL FRAME — SUPPORT TO INSTALLER (INST)	Issue 10	OCT 1989
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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Perform Preliminary Work Operations	INST	—
2	Verify VIF Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
	1. Verify VIU to TSI Port Assignment, Version Number and Equipage Status of Growth VIU in VIF UT Translator (`VER:UTYPE:VIF` a!)	TELCO/INST	DLP-506
	2. Compare Translation Data Against Wiring Records	INST	—
3	Verify TSI UT Translator and Compare Translations Data Against Wiring Records:		
	1. Determine Which TSI Frame Has Port Connecting to Growth VIU	TELCO	—
	2. Verify TSI Port to VIU Assignment and TSI Port Submember Equipage Data of TSI UT Translator (`VER:UTYPE:TSI` a!)	TELCO	DLP-548
	3. Compare Translation Data Against Wiring Records	INST	—
4	If ESU Is Associated With Growth VIU:		
	1. Verify ESU Submember Equipage and ESU to VIU Assignment of EST UT Translator (`VER:UTYPE:EST` a!)	TELCO/INST	DLP-546
	2. Compare Translation Data Against Wiring Records	INST	—
5	Diagnose VIF Using Restore Message (`RST:VIF` a,`CONTR` b!)	TELCO	DLP-521
6	Visually Inspect Backplane Area of Growth VIU for Bent Pins and Crosses	INST	—
7	Install VIU Circuit Packs and Power Units	INST	—
8	Measure VIU Power Unit Output Voltages	INST	—
9	Recent Change and Verify Submember Equipage UNEQ to GROW (Growth VIU)	TELCO	DLP-501
10	Enter Message To Diagnose Growth VIU (Specifying Growth) (`DGN:VIF` a,`VIU` b:`GROWTH`!) ATP Required; INST Clear Equipment Troubles	TELCO/INST	DLP-520
11	Recent Change and Verify Submember Equipage GROW to SGRO (Growth VIU)	TELCO/INST	DLP-501
12	Connect Connectorized Cabling Between VIF and Toll Terminal Frame	INST	—
13	Enter Message To Apply Port Pest to Growth Associated TSI Port (`INH:TSI` a,`SPC` b,`PORT` c!)	TELCO	—
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ADD VOICEBAND INTERFACE UNIT TO OPERATIONAL VOICEBAND INTERFACE — SUPPORT TO INSTALLER (INST)

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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
14	Connect Data Cables:		
	A. If No EST Exists Between Growth VIU and Associated TSI, Remove TSI Port Loop Cables and Connect Data Cables at TSI Port and Growth VIU	INST	—
	B. If EST Exists Between Growth VIU and Associated TSI, and (a) VIU Does not Require Echo Suppression, or (b) ESU Is Not Equipped, Connect Data Cables at ESU Strap Pack, Growth VIU, and TSI Port	INST	—
15	Recent Change and Verify Submember Equipage UNEQ to GROW (TSI Port Connecting to Growth VIU)	TELCO	DLP-501
16	Recent Change and Verify Submember Equipage GROW to SGRO (TSI Port Connecting to Growth VIU)	TELCO	DLP-501
17	Diagnose Connecting TSI Controllers 0 and 1 (Specifying Appropriate Phase and Growth) and Restore	TELCO/INST	DLP-510
18	Enter Message To Diagnose Growth VIU (Specifying Growth) (**DGN:VIF** a**,VIU** b**:GROWTH!**) ATP Required; INST Clear Equipment Troubles	TELCO/INST	DLP-520
19	Activation of VIU Equipment:		
	A. For Each VIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface With TSI Port Via Equipped ESU, Complete VIU/ESU/TSI Interface Using NTP-011 (Echo Suppressor Growth)	TELCO/INST	—
	B. For Each VIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface Directly to TSI or Via Strap Through **FB619** Pack in EST (Unequipped ESU Position), Perform the Following:		
	1. Recent Change and Verify Submember Equipage SGRO to OPER (VIU Associated TSI Port)	TELCO	DLP-501
	2. Recent Change and Verify Submember Equipage SGRO to OPER (Added VIU)	TELCO	DLP-501
	3. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
	4. Enter Message To Restore VIU (**RST:VIF** a**,VIU** b**!**) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
	5. Enter Message To Allow Growth Associated TSI Port (**ALW:TSI** a**,SPC** b**,PORT** c**!**)	TELCO	—

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		RESPONSIBILITY	
1	Verify Echo Suppressor Terminal (EST) Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
	1. Verify EST UT Translator (**VER:UTYPE:EST a!**)	TELCO/INST	DLP-549
	2. Compare Translations Data Against Wiring Records	INST	—
2	Verify Echo Suppressor Data and TSI Equipage Status of TSI UT Translator (**VER:UTYPE:TSI a!**)	TELCO/INST	DLP-543
3	If Connecting TSI Member Number Is Not in GROW Equipage State or Higher as Determined in Item 2, Discontinue This Growth Procedure Until TSI Member Equipage Is in Grow State or Higher	TELCO/INST	—
4	Assure That EST Frame Power Verification Tests Have Been Completed	INST	—
5	Remove Growth EST Power Using Frame Power Switches	INST	—
6	Assure That Basic EST Frame Circuit Packs and Power Converters Are Properly Installed	INST	—
7	Connect and Verify Growth EST Alarm Cables	INST	—
8	Connect and Verify Private Signal Leads	INST	—
9	Assure That Shelf Unit(s) Are Installed for Each Required Echo Suppressor Unit (ESU) and That Shelf Connectors Are Plugged In	INST	—
10	Extend or Insert Peripheral Unit Bus Per TOP 234-153-045; Then Continue This Procedure at Item 11 Upon Completion	TELCO/INST	—
11	Assure That Connecting TSI Frame Is Powered Up	INST	—
12	Connect Growth Associated TSI Clock Cables	INST	—
13	Complete VIF(s)/DT(s)/DIF Clock Terminations:		
	A. If Growth Associated VIF/DT/DIF Frame(s) Is Not Installed: Install Dummy Terminations at Growth EST Frame	INST	—
	B. If Growth EST Connects to VIF(s) and VIF Frame(s) Is Installed: Connect Clock Cables Between Growth EST and Associated VIF(s) (If Not Already Connected)	INST	—
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ADD ECHO SUPPRESSOR TERMINAL TO NEW TSI-EST-VIF/DT/DIF COMPLEX — SUPPORT TO INSTALLER (INST)

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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
13 (Contd) C. If Growth EST Connects to DT(s) and DT Frame(s) Is Installed: Connect Clock Cables Between Growth EST and Associated DT(s) (If Not Already Connected)	INST	—
D. If Growth EST Connects to DIF:		
A. Growth EST Is First EST To Connect to DIF: Connect Clock Cables Between Growth EST and Associated DIF	INST	—
B. Growth EST Is Second EST To Connect to DIF: Install Dummy Terminations At Growth EST Frame	INST	—
14 Recent Change and Verify Member Equipage UNEQ to GROW (EST)	TELCO	DLP-500
15 Enter **RMV:PUB 0!** To Remove Peripheral Unit Bus 0 From Service	TELCO	—
16 Apply Power to Growth EST Controllers 0 and 1 and Bus 0	INST	—
17 Diagnose Growth EST Controllers 0 and 1 (PUB 0 — Specifying GROWTH)	INST	—
18 Remove Power From Growth EST Bus Interface Unit 0	INST	—
19 Restore Peripheral Unit Bus 0 to Service (**RST:PUB 0!**)	TELCO/INST	DLP-503
20 Enter **RMV:PUB 1!** To Remove Peripheral Unit Bus 1 From Service	TELCO	—
21 Apply Power to Growth EST Bus Interface Unit 1	INST	—
22 Diagnose Growth EST Controllers 0 and 1 (PUB 1-Specifying GROWTH)	INST	—
23 If Any Repair or Maintenance Was Required to IPUB or Controller Access Circuitry During IPUB 1 Testing:		
1. Remove Power From Growth EST Bus Interface Unit 1	INST	—
2. Restore Peripheral Unit Bus 1 to Service (**RST:PUB 1!**)	TELCO/INST	DLP-503
3. Repeat From Item 15	TELCO/INST	—
24 Restore Peripheral Unit Bus 1 to Service (**RST:PUB 1!**)	TELCO/INST	DLP-503
25 Apply Power to Growth EST Bus Interface Unit 0	INST	—
26 Recent Change and Verify Member Equipage GROW to SGRO (EST)	TELCO	DLP-500
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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
27	Diagnose Growth EST Controllers 0 and 1, Specifying Appropriate Phases, PSW and GROWTH	INST	—
	NOTES: 1. The TSI frame associated with this EST should be in operational state and in service prior to continuing this procedure.		
	2. Items 28 through 32 should be performed without interruption.		
28	At Growth EST **CONT 1** Power Switch, Rotate OFF Switch to **ROS**	INST	—
29	Recent Change and Verify Member Equipage SGRO to OPER (EST)	TELCO	DLP-500
30	Enter Message To Restore and Initialize Controller 0 to Simplex Operation (RST:EST a,**CONTR 0**!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	—
31	Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT**!); Wait for Message Complete (**MSG COMPL**)	TELCO	—
32	Restore and Initialize Controller 1 to Duplex Operation (Using **CONT 1** Power Switch)	TELCO/INST	DLP-505
33	Install Circuit Packs and Power Converter for ESU 14	INST	—
34	Power Up ESU 14 Using Switch on ESU 14 Power Converter Installed in Item 33	INST	—
35	Recent Change and Verify Submember Equipage UNEQ to GROW (ESU 14)	TELCO	DLP-501
36	Diagnose EST, Using Restore Message (Controllers 0 and 1) (**RST:EST a,CONTR b**!)	TELCO/INST	DLP-535
37	Diagnose ESU 14, Specifying GROWTH (**DGN:EST a,ESU 14:GROWTH**!)	TELCO/INST	DLP-537
38	Recent Change and Verify Submember Equipage GROW to SGRO (ESU 14)	TELCO	DLP-501
39	Diagnose ESU 14 Specifying Phases 1-3, GROWTH and ESCSEL (**DGN:EST a,ESU 14:PH 1-3,GROWTH,ESCSEL**!)	TELCO/INST	DLP-539
40	Recent Change and Verify Submember Equipage SGRO to OPER (ESU 14)	TELCO	DLP-501
41	Enter Message To Restore ESU 14 to Operational (**RST:EST a,ESU 14**!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-542

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		DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
			RESPONSIBILITY	
		NOTE: This procedure may not be executed with the VIU/DTU/DIU associated with the growth ESU in the operational state. If the VIU/DTU/DIU is operational, degrowth of the VIU/DTU/DIU is required followed by pesting and degrowth of the associated TSI port. Degrowth of the VIU, DTU and/or DIU are contained in NTP-016, NTP-020 and NTP-026, respectively.		
	1	Verify Unequipped Status of Growth Echo Suppressor Unit (ESU) (**VER:UTYPE:EST a,SME b!**)	TELCO/INST	DLP-534
	2	Verify Growth ESU Version Number (**VER:UTYPE:EST a!**)	TELCO/INST	DLP-538
	3	Assure That Data Cables to TSI and VIU/DTU/DIU Are Connected and/or That **FB619** Strap Pack Is Installed for ESU To Be Added	INST	—
	4	Assure That Shelf Unit Is Installed for ESU To Be Added and That Shelf Connectors Are Plugged In	INST	—
	5	Diagnose Growth Related EST Using Restore Message (Controllers 0 and 1) (**RST:EST a,CONTR b!**)	TELCO	DLP-535
	6	Diagnose Operational ESU (Each Operational ESU in Growth Related EST) (**DGN:EST a,ESU b!**)	TELCO	DLP-536
		CAUTION: The FB618 circuit pack should not be installed at this time.		
	7	Install Circuit Packs (Except **FB618**), Power Converter and Power Up Growth ESU	INST	—
	8	Diagnose Growth Related EST Using Restore Message (Controllers 0 and 1) (**RST:EST a,CONTR b!**)	TELCO/INST	DLP-535
	9	Diagnose Operational ESU (Each Operational ESU in Growth Related EST) (**DGN:EST a,ESU b!**)	TELCO/INST	DLP-536
	10	Verify Equipage Status of VIU/DTU/DIU Associated With Growth ESU:		
		A. If Growth ESU Connects to VIU, Verify and Note Equipage Status of VIU Associated With Growth ESU (**VER:UTYPE:VIF a,SME b!**)	TELCO	—
		B. If Growth ESU Connects to DTU, Verify and Note Equipage Status of DTU Associated With Growth ESU (**VER:UTYPE:DT a,SME b!**)	TELCO	—
		C. If Growth ESU Connects to DIU, Verify and Note Equipage Status of DIU Associated With Growth ESU (**VER:UTYPE:DIF a,SME b!**)	TELCO	—
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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
11 Discontinue This Procedure if VIU/DTU/DIU SME Verified in Item 10 Is Not in SGRO State and Not Ready To Be Interfaced to Growth ESU as Result of VIF/VIU, DT/DTU or DIF/DIU Growth/Degrowth Procedures or as Result of EST Growth Procedures	TELCO	—
12 Recent Change and Verify Submember Equipage UNEQ to GROW Using RC Form 700 (Growth ESU)	TELCO	DLP-501
13 Diagnose Growth ESU Specifying GROWTH (DGN:EST a,ESU b:GROWTH!)	TELCO/INST	DLP-537
14 Recent Change and Verify Submember Equipage GROW to SGRO Using RC Form 700 (Growth ESU)	TELCO	DLP-501
15 Connect T and R Data Cables:		
1. At Growth Related EST, Remove **FB619** Strap Pack Associated With Growth ESU	INST	—
2. At Strap Pack Removed in Item 15.1, Disconnect ESU to TSI Port Data Cables	INST	—
3. At Strap Pack Removed in Item 15.1, Disconnect ESU to VIU/DTU/DIU Data Cables	INST	—
4. Get **FB618** Circuit Pack and Connect TSI Port to ESU Data Cables at **FB618** Circuit Pack	INST	—
5. Connect ESU to VIU/DTU/DIU Data Cables Onto **FB618** Circuit Pack	INST	—
6. At Growth EST, Install **FB618** Circuit Pack Associated With Growth ESU	INST	—
NOTE: The connecting TSI port equipage must be assured of being in special growth (SGRO) state prior to Item 16.		
16 Diagnose and Restore Connecting TSI Controllers 0 and 1:		
A. If Connecting TSI Is J4A001A; Specify PH 13 and GROWTH	TELCO/INST	DLP-510
B. If Connecting TSI Is J4A001B; Specify PH 20 and GROWTH	TELCO/INST	DLP-510
17 Diagnose Growth ESU Specifying Phases 1-3, GROWTH and ESCSEL (DGN:EST a,ESU b:PH 1-3,GROWTH,ESCSEL!)	TELCO/INST	DLP-539
NOTE: For any channel comprising a VIU/DTU/DIU, a TSI port and an ESU which is not ready to be brought to the operational state per Item 18, circuit order procedures contained in NTP-015 (VIU), NTP-019 (DTU)or NTP-024 (DIU) are to be performed later.		
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ADD ECHO SUPPRESSOR UNIT TO OPERATIONAL EST —
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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
18 For ESU Associated With VIU/DTU/DIU Which has Trunks Connected or Transmission Equipment Ready for Test:		
1. Recent Change and Verify Submember Equipage SGRO to OPER Using RC Form 700 (TSI Port Associated With Growth ESU)	TELCO	DLP-501
2. Recent Change and Verify Submember Equipage SGRO to OPER Using RC Form 700 (Growth ESU)	TELCO	DLP-501
3. If Growth ESU Connects to VIU: Recent Change and Verify Submember Equipage Using RC Form 700 SGRO to OPER (Connecting VIU)	TELCO	DLP-501
4. If Growth ESU Connects to DTU: Recent Change and Verify Submember Equipage Using RC Form 700 SGRO to OPER (Connecting DTU)	TELCO	DLP-501
5. If Growth ESU Connects to DIU: Recent Change and Verify Submember Equipage Using RC Form 700 SGRO TO OPER (Connecting DIU)	TELCO	DLP-501
6. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
7. Enter Message To Restore Growth ESU (**RST:EST a,ESU b!**) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-542
8. If Growth ESU Connects to VIU, Enter Message To Restore Growth Associated VIU (**RST:VIF a,VIU b!**) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
9. If Growth ESU Connects to DTU, Enter Message To Restore Growth Associated DTU (**RST:DT a,DTU b!**) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
10. If Growth ESU Connects to DIU, Enter Message To Restore Growth Associated DIU (**RST:DIF a,DIU b!**) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
11. Enter Message To Allow Growth Associated TSI Port (**ALW:TSI a,SPC b,PORT c!**)	TELCO	—

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Verify Echo Suppressor Terminal (EST) Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
	1. Verify EST UT Translator (**VER:UTYPE:EST** a!)	TELCO/INST	DLP-549
	2. Compare Translations Data Against Wiring Records	INST	—
2	Verify Echo Suppressor Data And TSI Equipage Status of TSI UT Translator (**VER:UTYPE:TSI** a!)	TELCO/INST	DLP-543
3	Assure That EST Frame Power Verification Tests Have Been Completed	INST	—
4	Remove Growth EST Power Using Frame Power Switches	INST	—
5	Assure That Basic EST Frame Circuit Packs and Power Converters Are Properly Installed	INST	—
6	Connect and Verify Growth EST Alarm Cables	INST	—
7	Connect and Verify Private Signal Leads	INST	—
8	Assure That Shelf Unit(s) Are Installed for Each Required Echo Suppressor Unit (ESU) and That Shelf Connectors Are Plugged In	INST	—
9	At Growth EST, Connect Data Cables to **FB619** Strap Pack and Install **FB619** Strap Pack for Each Equipped VIU/DTU/DIU Associated With Growth EST	INST	—
10	Extend or Insert Peripheral Unit Bus Per TOP 234-153-045; Then Continue This Procedure at Item 11 Upon Completion	TELCO/INST	—
11	Complete Clock Cabling:		
	1. Request TOC Personnel To Change All Affected Trunks Associated With Operational VIF/DT/DIF to Circuit Administration Disable (CAD.DSA) State	TELCO	—
	2. Remove One VIU/DTU/DIU From Service (**RMV:**a b,c d!)	TELCO	DLP-552
	3. Degrow VIU/DTU/DIU in Item 11.2 From OPER to SGRO (Using RC Form 701)	TELCO	DLP-527
	4. Diagnose VIU/DTU/DIU in Item 11.2 (Specifying GROWTH) (**DGN:**a b,c d**:GROWTH!**)	TELCO	DLP-502
	5. Enter Message To Apply Port Pest to Growth Associated TSI Port (**INH:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
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11 (Contd)	6. Degrow TSI Port in Item 11.5 From OPER to SGRO (Using RC Form 701)	TELCO	DLP-527
	7. Remove Data Cables at Growth TSI Port in Item 11.5 and Connect Loop Cable	INST	—
	NOTE: Remove only the data cables at the growth DIU that are associated with the growth EST.		
	8. Remove Data Cables at Growth VIU/DTU/DIU in Item 11.2	INST	—
	9. Degrow VIU/DTU/DIU in Item 11.2 From SGRO to GROW (Using RC Form 701)	TELCO	DLP-527
	10. Repeat Items 11.2 Through 11.9 for Each Operational VIU/DTU/DIU in Frame	TELCO/INST	—
	11. Degrow VIF/DT/DIF ME From OPER to SGRO (Using RC Form 701)	TELCO	DLP-526
	12. Connect New Clock Cables for VIF/DT/DIF Controller 0 at EST Frame	INST	—
	13. Remove Existing Clock Cable From VIF/DT/DIF Controller 0 at TSI and Connect New Clock Cable From Growth EST	TELCO	—
	14. Scope New Clock Cable for VIF/DT/DIF Controller 0 at VIF/DT/DIF; TELCO Observe for Presence of Clock	TELCO/INST	—
	15. Remove Existing Clock Cable From VIF/DT/DIF Controller 0 and Bus Interface Unit 0 and Connect New Clock Cable From EST	INST	—
	16. Repeat Items 11.12 Through 11.15 for VIF/DT/DIF Controller 1	TELCO/INST	—
	17. Enter Message To Diagnose VIF/DT/DIF Controllers 0 and 1 (DGN:a b,CONTR c:GROWTH!) ATP Required; INST Resolve Problems Associated With Growth Equipment (a = VIF, DT, or DIF, b = Frame Member Number)	TELCO/INST	—
	18. Enter Message To Diagnose Spare VIU/DTU/DIU (DGN:a b,c d:GROWTH!) ATP Required; INST Resolve Problems Associated With Growth Equipment (a = VIF, DT or DIF, b = Frame Member Number, c = VIU, DIU or DTU, d = Unit Number)	TELCO/INST	—
	19. Assure That DT/DIF/VIF Bus Interface Units 0 and 1 and VIF/DT/DIF Controller 0 Power Switches Are Powered Up With OFF Switches in Normal Position and Controller 1 Power Switch Is Powered Up With **OFF** Switch in **ROS** Position	INST	—
	20. Recent Change and Verify VIF/DT/DIF Member Equipage SGRO to OPER	TELCO	DLP-500
	21. Enter Message To Run Peripheral Unit Status Audit (AUD:PUSTAT!); Wait for Message Complete (MSG COMPL)	TELCO	—

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11 (Contd)	22. Enter Message To Restore and Initialize VIF/DT/DIF Controller 0 to Simplex Operation (**RST:**a b,**CONTR 0!**) (a = VIF, DT or DIF, b = Member Number) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	—
	23. Restore and Initialize VIF/DT/DIF Controller 1 Using Power Switch	TELCO/INST	DLP-505
	24. Repeat Items 11.1 Through 11.23 for Other Operational VIF/DT/DIF (if Any) Associated With Growth EST	TELCO/INST	—
12	Complete Data Cabling for VIU(s)/DTU(s)/DIU(s) and TSI Port(s):		
	A. For VIU(s)/DTU(s)/DIU(s) Which Will Not Require Equipped ESU(s) (To Interface Through Strap Pack Only):		
	1. Recent Change and Verify Submember Equipage GROW to SGRO (One VIU/DTU/DIU)	TELCO	DLP-501
	2. Remove Data Cables at VIU/DTU/DIU of 12.A.1 and Connect New Data Cables From Associated Strap Pack	INST	—
	3. Remove Loop Cable at Associated TSI Port and Connect New Data Cables From Associated Strap Pack	INST	—
	4. Diagnose (Specifying GROWTH) and Restore Connecting TSI Controllers 0 and 1 (TSI in Item 12.A.3)	TELCO/INST	DLP-510
	5. Recent Change and Verify Submember Equipage SGRO to OPER (TSI Port in Item 12.A.3)	TELCO	DLP-501
	6. Recent Change and Verify Submember Equipage SGRO to OPER (VIU/DTU/DIU in Item 12.A.1)	TELCO	DLP-501
	7. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
	8. Enter Message To Restore VIU/DTU/DIU in Item 12.A.1 to Service (**RST:**a b,c d!) ATP and Restore COMPLETE Required; Installer Clear Equipment Troubles	TELCO/INST	DLP-512
	9. Enter Message To Allow Growth Associated TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
	10. Request TOC Personnel To Return Associated Trunks Disabled in Item 11.1 to Active State	TELCO	—

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12 (Contd)	NOTE: This is a safe point to temporarily stop this procedure.		
	11. Repeat Item 12.A.1 Through 12.A.10 for Each VIU/DTU/DIU That Will Connect to Unequipped ESU	TELCO/INST	—
	B. For VIU(s)/DTU(s)/DIU(s) Which Will Connect to Equipped ESU(s):		
	1. Recent Change and Verify Submember Equipage Grow to SGRO (One VIU/DTU/DIU)	TELCO	DLP-501
	2. Remove Data Cables at VIU/DTU/DIU of 12.B.1 and Connect New Data Cables From Strap Pack of Growth ESU	INST	—
	3. Remove Data Cables at Growth Associated TSI Port and Connect New Data Cables From Strap Pack of Growth ESU	INST	—
	4. Diagnose (Specifying GROWTH) and Restore Connecting TSI Controllers (TSI in Item 12.B.3)	TELCO/INST	DLP-510
	5. Repeat Items 12.B.1 Through 12.B.4 for Each VIU/DTU/DIU That Will Connect to Equipped ESU	TELCO/INST	—
13	Recent Change and Verify Member Equipage UNEQ to GROW (EST)	TELCO	DLP-500
14	Enter **RMV:PUB 0!** To Remove Peripheral Unit Bus 0 From Service	TELCO	—
15	Apply Power to Growth EST Controller 0 and 1 and Bus 0	INST	—
16	Diagnose Growth EST Controllers 0 and 1 (PUB 0 — Specifying GROWTH)	INST	—
17	Remove Power From Growth EST Bus Interface Unit 0	INST	—
18	Restore Peripheral Unit Bus 0 to Service (**RST:PUB 0!**)	TELCO/INST	DLP-503
19	Enter **RMV:PUB 1!** To Remove Peripheral Unit Bus 1 From Service	TELCO	—
20	Apply Power to Growth EST Bus Interface Unit 1	INST	—
21	Diagnose Growth EST Controllers 0 and 1 (PUB 1 — Specifying GROWTH)	INST	—
22	If Any Repair or Maintenance Was Required to IPUB or Controller Access Circuitry During IPUB 1 Testing:		
	1. Remove Power From Growth EST Bus Interface Unit 1	INST	—

	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
22 (Contd)	2. Restore Peripheral Unit Bus 1 to Service (RST:PUB 1!)	TELCO/INST	DLP-503
	3. Repeat From Item 14	TELCO/INST	—
23	Restore Peripheral Unit Bus 1 to Service (RST:PUB 1!)	TELCO/INST	DLP-503
24	Apply Power to Growth EST Bus Interface Unit 0	INST	—
25	Recent Change and Verify Member Equipage GROW to SGRO (EST)	TELCO	DLP-500
26	Diagnose Growth EST Controller 0 and 1, Specifying Appropriate Phases, PSW and GROWTH	INST	—
	NOTE: Steps 27 Through 31 should be performed without interruption.		
27	At Growth EST **CONT1** Power Switch, Rotate **OFF** Switch to **ROS**	INST	—
28	Recent Change and Verify Member Equipage SGRO to OPER (EST)	TELCO	DLP-500
29	Enter Message To Restore and Initialize Controller 0 to Simplex Operation (RST:EST a,CONTR 0!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	—
30	Enter Message To Run Peripheral Unit Status Audit (AUD:PUSTAT!); Wait for Message Complete (MSG COMPL)	TELCO	—
31	Restore and Initialize Controller 1 to Duplex Operation (Using **CONT1** Power Switch)	TELCO/INST	DLP-505
32	Install Circuit Packs and Power Converter for ESU 14	INST	—
33	Power Up ESU 14 Using Switch at ESU 14 Power Converter Installed in Item 32	INST	—
34	Recent Change and Verify Submember Equipage UNEQ to GROW (ESU 14)	TELCO	DLP-501
35	Diagnose Growth EST Using Restore Message (Controllers 0 and 1) (RST:EST a,CONTR b!)	TELCO/INST	DLP-535
36	Diagnose ESU 14, Specifying GROWTH (DGN:EST a,ESU 14:GROWTH!)	TELCO/INST	DLP-537
37	Recent Change and Verify Submember Equipage GROW to SGRO (ESU 14)	TELCO	DLP-501
38	Diagnose ESU 14, Specifying PH 1-3, ESCSEL and GROWTH (DGN:EST a,ESU 14:PH 1-3,GROWTH,ESCSEL!)	TELCO/INST	DLP-539
39	Recent Change and Verify Submember Equipage SGRO to OPER (ESU 14)	TELCO	DLP-501
40	Enter Message To Restore ESU 14 to Operational (RST:EST a,ESU 14!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-542

INSERT ECHO SUPPRESSOR TERMINAL INTO OPERATIONAL
TSI-VIF/DT/DIF COMPLEX — SUPPORT TO INSTALLER (INST)

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO

		RESPONSIBILITY	
1	Determine From Company Order Member Number of Voiceband Interface (VIF) Being Grown and Voiceband Interface Unit (VIU) Number To Be Added	TELCO	—
2	Determine VIU Equipment To Be Added and Select Circuit Packs	TELCO	DLP-559
3	Verify VIU to Time Slot Interchange (TSI) Port Assignment, Version Number and Equipage Status of Growth VIU in VIF UT Translator (**VER:UTYPE:VIF** a!)	TELCO	DLP-506
4	Verify TSI Port to VIU Assignment and TSI Port Submember Equipage Data of TSI Unit Type (UT) Translator (**VER:UTYPE:TSI** a!)	TELCO	DLP-548
5	If ESU Is Associated With Growth VIU, Verify ESU Submember Equipage and ESU to VIU Assignment of EST UT Translator (**VER:UTYPE:EST** a!)	TELCO	DLP-546
6	Diagnose Growth VIF Using Restore Message (**RST:VIF** a,**CONTR** b!)	TELCO	DLP-521
7	Visually Inspect Backplane Area of Added VIU for Bent Pins and Crosses	TELCO	—
8	Remove Power and Install VIU Circuit Packs and Power Units	TELCO	DLP-560
9	Check 80A dc-dc Power Converter +6 and −6 Volt Output (Growth VIU)	TELCO	DLP-561
10	Check 81A dc-dc Power Converter +3 and −12 Volt Output (Growth VIU)	TELCO	DLP-562
	NOTE: This is a safe point to temporarily stop this procedure.		
11	Recent Change and Verify Submember Equipage UNEQ to GROW (Growth VIU)	TELCO	DLP-501
12	Diagnose Added VIU (**DGN:VIF** a,**VIU** b:**GROWTH**!)	TELCO	DLP-520
13	Recent Change and Verify Submember Equipage GROW to SGRO (Growth VIU)	TELCO	DLP-501
14	Enter Message To Apply Port Pest to Growth Associated TSI Port (**INH:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
15	Connect Data Cables:		
	A. If EST Exists Between Growth VIU and Associated TSI:		
	1. At Growth Related EST, Remove **FB619** Strap Pack Associated With Growth VIU	TELCO	—
	2. At Strap Pack Removed in Item 15.A.1, Connect Cables From Growth VIU	TELCO	—
	3. At Growth Related EST, Install Strap Pack Removed in Item 15.A.1	TELCO	—

ADD VOICEBAND INTERFACE UNIT TO OPERATIONAL VOICEBAND INTERFACE FRAME

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	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
15	4. Remove TSI Port Loop and Connect Data Cables to TSI Port and VIU	TELCO	DLP-563
	B. If No EST Exists Between Growth VIU and Associated TSI, Remove TSI Port Loop and Connect Data Cables to TSI Port and Growth VIU	TELCO	DLP-563
16	Recent Change and Verify Submember Equipage UNEQ to GROW (TSI Port Connecting to Added VIU)	TELCO	DLP-501
17	Recent Change and Verify Submember Equipage GROW to SGRO (TSI Port Connecting to Added VIU)	TELCO	DLP-501
18	Diagnose and Restore Connecting TSI Controllers 0 and 1 (Specifying GROWTH) (**DGN:TSI** a,**CONTR** b:**GROWTH!**)	TELCO	DLP-511
	NOTE: This is a safe point to temporarily stop this procedure.		
19	Diagnose Added VIU (**DGN:VIF** a,**VIU** b:**GROWTH!**)	TELCO	DLP-520
20	Activation of VIU Equipment:		
	A. For Added VIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface With TSI Port Via Equipped ESU, Complete VIU/ESU/TSI Interface Using NTP-021 (Echo Suppressor Unit Growth Procedure)	TELCO	–
	B. For Added VIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface Directly to TSI or Via Strap Through **FB619** Pack in EST (Unequipped ESU Position), Perform the Following:		
	1. Recent Change and Verify Submember Equipage SGRO to OPER (TSI Port Associated With VIU)	TELCO	DLP-501
	2. Recent Change and Verify Submember Equipage SGRO to OPER (Added VIU)	TELCO	DLP-501
	3. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	–
	4. Restore Added VIU (**RST:VIF** a,**VIU** b!)	TELCO	DLP-512
	5. Enter Message To Allow Growth Associated TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	–

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Recent Change and Verify Submember Equipage SGRO to OPER (VIU Associated TSI Port)	TELCO	DLP-501
2	Recent Change and Verify Submember Equipage SGRO to OPER (VIU Associated With TSI Port in Item 1)	TELCO	DLP-501
3	Enter Message To Run Peripheral Unit Status Audit (AUD:PUSTAT!); Wait for Message Complete (MSG COMPL)	TELCO	—
4	Restore VIU (Item 2) (RST:VIF a,VIU b!)	TELCO	DLP-512
5	Enter Message To Allow Growth Associated TSI Port (ALW:TSI a,SPC b,PORT c!)	TELCO	—

ADVANCE VIU AND CONNECTING TSI PORT FROM SPECIAL GROWTH TO OPERATIONAL

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Recent Change and Verify Submember Equipage SGRO to OPER (TSI Port Associated With Added ESU)	TELCO	DLP-501
2	Recent Change and Verify Submember Equipage SGRO to OPER (Added ESU)	TELCO	DLP-501
3	Recent Change and Verify Submember Equipage SGRO to OPER (Connecting VIU)	TELCO	DLP-501
4	Enter Message To Run Peripheral Unit Status Audit (AUD:PUSTAT!); Wait for Message Complete (MSG COMPL)	TELCO	—
5	Restore Added ESU (RST:EST a,ESU b!)	TELCO	DLP-542
6	Restore Growth Associated VIU (RST:VIF a,VIU b!)	TELCO	DLP-512
7	Enter Message To Allow Growth Associated TSI Port (ALW:TSI a,SPC b,PORT c!)	TELCO	—

ADVANCE VIU, ADDED ESU, AND CONNECTING TSI PORT FROM SPECIAL GROWTH TO OPERATIONAL

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
	RESPONSIBILITY	
1 Determine From Company Order the VIU Number To Be Degrown and Associated VIF, TSI, and ESU if Required	TELCO	—
2 Obtain From Appropriate Administration Center the Base Trunk Assignment Number (TAN) Served by VIU To Be Degrown	TELCO	—
3 Verify TAN to VIU Assignment (**VER:TRKNAME,TAN** a;**DETL!**)	TELCO	DLP-564
4 Change Degrowth VIU Trunks to Circuit Administration Disabled (**CAD.DSA**) State and Verify	TELCO	DLP-565
NOTE: All TANs assigned to the degrowth VIU must be in **CAD.DSA** State in output message of Item 4 before continuing with this procedure.		
5 Request Appropriate Administration Center To Determine If Any TANTOTANs and/or Nailup Connections Are Assigned to SPC in TSI To Be Degrown	TELCO	—
6 If TANTOTANs Are Assigned, Obtain CIN Assignments of TANTOTANs on SPC To Be Degrown for Later Use	TELCO	—
7 If Nailup Connections Are Assigned, Obtain TAN Assignments of Nailup Connections on SPC To Be Degrown for Later Use	TELCO	—
8 If TANTOTANs Are Assigned to SPC Being Degrown (Item 5), Using CIN Assignments Obtained in Item 6, Take Down Each TANTOTAN (**ORD:TANTOTAN;RLS,CIN** a:**CIN** b! a = CIN of First Trunk, b = CIN of Second Trunk)	TELCO	DLP-619
9 If Nailup Connections Are Assigned to SPC Being Degrown (Item 5), Request Appropriate Administration Center To Delete Each Nailup Connection on List Obtained in Item 7 Using Recent Change Form 206	TELCO	—
10 Verify That Spare VIU in Degrowth VIF Is Available (**OP:OOSUNITS:VIF!**)	TELCO	DLP-566
11 Remove Degrowth VIU From Service (**RMV:VIF** a,**VIU** b!)	TELCO	DLP-567
12 Recent Change Submember Equipage From Operational to Special Growth Using RC Form 701 (Degrow) (Degrowth VIU)	TELCO	DLP-527
13 Diagnose Degrowth VIU (**DGN:VIF** a,**VIU** b!); When Diagnostic Is Completed, at Degrowth VIF Frame, Observe That Spare VIU Is Unconditional Released	TELCO	—
(Continued on Page 2)		

DEGROW VIU AND AS REQUIRED ASSOCIATED TSI PORT AND ESU

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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
14	If EST Exists Between Degrowth VIU and Associated TSI Port and EST Is Equipped With Operational ESU That Is Associated With Degrowth VIU/TSI Port, Perform the Following:		
	1. Remove Associated ESU From Service (**RMV:EST** a,**ESU** b!)	TELCO	DLP-569
	2. Recent Change Submember Equipage From Operational to Special Growth Using RC Form 701 (Degrow) (ESU Associated With Degrowth VIU)	TELCO	DLP-527
	3. Diagnose Degrowth Related ESU (**DGN:EST** a,**ESU** b!) When Diagnostic Is Completed at Degrowth EST, Observe That Spare ESU Is Unconditional Released	TELCO	—
	NOTES: 1. The VIU (and ESU, if applicable) may remain in special growth state, and the VIU and ESU equipment may remain installed within the operational frame(s), until circuit order work will require the VIU equipment for future reuse, providing the VIU equipment or data cables are not removed or disturbed.		
	2. This is a safe point to temporarily stop this procedure.		
15	If Degrowth VIU Is To Be Degrown to Unequipped State:		
	1. Recent Change Submember Equipage From Operational to Special Growth Using RC Form 701 (Degrow) (Degrowth Associated TSI Port)	TELCO	DLP-527
	2. Enter Message To Apply TSI Port Pest Control to TSI Port Associated With Degrowth VIU (**INH:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
	3. Recent Change Submember Equipage From Special Growth to Grow Using RC Form 701 (Degrow) (Degrowth VIU)	TELCO	DLP-527
	4. Recent Change Submember Equipage From Grow to Unequipped Using RC Form 701 (Degrow) (Degrowth VIU)	TELCO	DLP-527
	5. If an ESU Is Associated With Degrowth VIU:		
	1. Recent Change Submember Equipage From Special Growth to Grow Using RC Form 701 (Degrow) (ESU Associated With Degrowth VIU)	TELCO	DLP-527
	2. Replace **FB618** Circuit Pack With **FB619** Strap Pack	TELCO	DLP-570
	3. Recent Change Submember Equipage From Grow to Unequipped Using RC Form 701 (Degrow) (ESU Associated With Degrowth VIU)	TELCO	DLP-527
	(Continued on Page 3)		

DEGROW VIU AND AS REQUIRED ASSOCIATED TSI PORT AND ESU

DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
15 (Contd)	6. Recent Change Submember Equipage From Special Growth to Grow Using RC Form 701 (Degrow) (TSI Port Associated With Degrowth VIU)	TELCO	DLP-527
	7. Recent Change Submember Equipage From Grow to Unequipped Using RC Form 701 (Degrow) (TSI Port Associated With Degrowth VIU)	TELCO	DLP-527
	8. Disconnect TSI Port Cables and Install TSI Looping Cables or Terminator	TELCO	DLP-571
	9. Enter Message To Allow Degrowth TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
	NOTE: If the VIF is to be degrown, the VIU circuit packs may remain installed in the VIF frame.		
	10. If Degrowth VIU Circuit Packs Are To Be Removed From VIF Frame, Remove Degrowth VIU Circuit Packs, Power Converters and Disconnect Cabling	TELCO	DLP-572
	11. If Degrown ESU Circuit Packs Are To Be Removed From EST, Remove ESU Circuit Packs and Power Unit	TELCO	DLP-568

DEGROW VIU AND AS REQUIRED ASSOCIATED TSI PORT AND ESU

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
1	Determine From Company Order the Member Number of Digroup Terminal (DT) Frame Being Grown and Digroup Terminal Unit (DTU) Number To Be Added	TELCO	—
2	Determine DTU Equipment To Be Added and Select Circuit Packs:		
	A. For DT J68952A-1	TELCO	DLP-573
	B. For DT J68952B-1	TELCO	DLP-556
3	Verify DTU to Time Slot Interchange (TSI) Port Assignment, Version Number, and Growth DTU Equipage Status in DT UT Translator (**VER,:TYPE:DT** a!)	TELCO	DLP-519
4	Verify TSI Port to DTU Assignment and TSI Port Equipage Data of TSI Unit Type (UT) Translator (**VER:UTYPE:TSI** a!)	TELCO	DLP-548
5	If ESU Is Associated With Growth DTU, Verify ESU Submember Equipage and ESU to DTU Assignment of EST UT Translator (**VER:UTYPE:EST** a!)	TELCO	DLP-546
6	Diagnose Growth DT Using Restore Message (**RST:DT** a**,CONTR** b!)	TELCO	DLP-521
7	Visually Inspect Backplane Area of Growth DTU for Bent Pins and Crosses	TELCO	—
8	Assure That Power to Growth DTU Is Off Using Associated **PWR OFF** Switch on Fuse and Alarm Panel	TELCO	—
9	Install DTU Circuit Packs and Power Converters at Growth DTU:		
	A. For DT J68952A-1	TELCO	DLP-557
	B. For DT J68952B-1	TELCO	DLP-558
10	Verify Associated Circuit Pack Is Installed in Line Equalizer and Protection Switch Panels:		
	A. For DT J68952A-1	TELCO	DLP-574
	B. For DT J68952B-1	TELCO	DLP-547
11	Verify Transmission Facility Cables Connected and Looping Devices Installed:		
	1. Assure That Transmission Facility Cables Are Connected and DT to TSI Port Looping Devices Are Installed	TELCO	—
	2. If DTU Associated With DSX or Repeater Bay, Complete Cabling and Loop Connections	TELCO	DLP-576

ADD DIGROUP TERMINAL UNIT TO OPERATIONAL DIGROUP TERMINAL FRAME

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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
11 (Contd)	3. If DTU Associated With LT-1, Complete Cabling and Loop Connections	TELCO	—
12	Recent Change and Verify Submember Equipage UNEQ to GROW (DTU)	TELCO	DLP-501
13	At Growth DTU, Verify That Power Switches on 145A and 145B Converters Are **ON**	TELCO	—
14	Apply Power to Growth DTU Using Associated **PWR OFF** Switch on Fuse and Alarm Panel (Lamp Goes Off)	TELCO	—
15	Diagnose Growth DTU (**DGN:DT** a,**DTU** b:**GROWTH!**)	TELCO	DLP-520
16	Recent Change and Verify Submember Equipage GROW to SGRO (DTU)	TELCO	DLP-501
17	Enter Message To Apply Port Pest to Growth Associated TSI Port (**INH:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
18	Connect Data Cables:		
	A. If No EST Exists Between Growth DTU and Associated TSI, Remove TSI Port Loop Cables or H Connector as Applicable and DTU Output Loop Cables and Connect Data Cable at TSI Port and Growth DTU	TELCO	DLP-575
	B. If EST Exists Between Growth DTU and Associated TSI:		
	1. At Growth Related EST, Remove **FB619** Strap Pack Associated With Growth DTU	TELCO	—
	2. At Strap Pack Removed in Item 18.B.1, Connect Cables From Growth DTU	TELCO	—
	3. At Growth Related EST, Install Strap Pack Removed in Item 18.B.1	TELCO	—
	4. Remove TSI Port Loop and Connect Data Cables to TSI Port and DTU	TELCO	DLP-575
19	Recent Change and Verify Submember Equipage UNEQ to GROW (TSI Port Connecting to Growth DTU)	TELCO	DLP-501
20	Recent Change and Verify Submember Equipage GROW to SGRO (TSI Port in Item 19)	TELCO	DLP-501
21	Diagnose and Restore Connecting TSI Controllers 0 and 1 (Specifying PH 13 or 20 and GROWTH):		
	A. Specify PH 13 for J4A001A	TELCO	DLP-510
	B. Specify PH 20 for J4A001B	TELCO	DLP-510
	NOTE: This is a safe point to temporarily stop this procedure.		

ADD DIGROUP TERMINAL UNIT TO OPERATIONAL DIGROUP TERMINAL FRAME

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
22	Diagnose Growth DTU (DGN:DT a,DTU b:GROWTH!)	TELCO	DLP-520
23	Activation of DTU Equipment:		
	A. For Each DTU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface to TSI Via Equipped ESU, Complete DTU/ESU/TSI Interface Using NTP-021 (Echo Suppressor Growth)	TELCO	—
	B. For Each DTU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface Directly to TSI or Via Strap Through **FB619** Pack in EST (Unequipped ESU Position), Perform the Following:	TELCO	—
	1. Recent Change and Verify Submember Equipage SGRO to OPER (DTU Associated TSI Port)	TELCO	DLP-501
	2. Recent Change and Verify Submember Equipage SGRO to OPER (Added DTU)	TELCO	DLP-501
	3. Enter Message To Run Peripheral Unit Status Audit (AUD:PUSTAT!); Wait for Message Complete (MSG COMPL)	TELCO	—
	4. Restore Added DTU (RST:DT a,DTU b!)	TELCO	DLP-512
	5. Enter Message To Allow Growth Associated TSI Port (ALW:TSI a,SPC b,PORT c!)	TELCO	—
	NOTE: The current state of the digroup status memory for each digroup associated with the DTU being activated may be obtained by entering OP:DGSTAT,DT a,DTU b,DG O;DETL:NUM 5,STAT ALL!		

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Recent Change and Verify Submember Equipage SGRO to OPER (DTU Associated TSI Port)	TELCO	DLP-501
2	Recent Change and Verify Submember Equipage SGRO to OPER (DTU Associated With TSI Port in Item 1)	TELCO	DLP-501
3	Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
4	Restore DTU (Item 2) (**RST:DT** a,**DTU** b!)	TELCO	DLP-512
5	Enter Message To Allow Growth Associated TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
	NOTE: The current state of the digroup status memory for each digroup associated with the DTU being activated may be obtained by entering **OP:DGSTAT,DT** a,**DTU** b,**DG** O;**DETL:NUM** 5,**STAT ALL!**		

ADVANCE DTU AND CONNECTING TSI PORT FROM SPECIAL GROWTH TO OPERATIONAL

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
1	Recent Change and Verify Submember Equipage SGRO to OPER (TSI Port Associated With Added ESU)	TELCO	DLP-501
2	Recent Change and Verify Submember Equipage SGRO to OPER (Added ESU)	TELCO	DLP-501
3	Recent Change and Verify Submember Equipage SGRO to OPER (Connecting DTU)	TELCO	DLP-501
4	Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
5	Restore Added ESU (**RST:EST** a,**ESU** b!)	TELCO	DLP-542
6	Restore Growth Associated DTU (**RST:DT** a,**DTU** b!)	TELCO	DLP-512
7	Enter Message To Allow Growth Associated TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
	NOTE: The current state of the digroup status memory for each digroup associated with the DTU being activated may be obtained by entering **OP:DGSTAT,DT** a,**DTU** b,**DG** O;**DETL:NUM 5,STAT ALL!**		

ADVANCE DTU, ADDED ESU, AND CONNECTING TSI PORT FROM SPECIAL GROWTH TO OPERATIONAL

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Determine From Company Order the DTU Number To Be Degrown and Associated DT, TSI, and ESU, if Required	TELCO	—
2	Obtain From Appropriate Administration Center the Base Trunk Assignment Number (TAN) Served by DTU To Be Degrown	TELCO	—
3	Verify TAN to DTU Assignment (**VER:TRKNAME,TAN** a;**DETL!**)	TELCO	DLP-564
4	Change Degrowth DTU Trunks to Circuit Administration Disabled (**CAD.DSA**) State and Verify	TELCO	DLP-565
	NOTE: All TANs assigned to the degrowth DTU must be in **CAD.DSA** state in output message of Item 4 before continuing with this procedure.		
5	Request Appropriate Administration Center To Determine If Any TANTOTANs and/or Nailup Connections Are Assigned to SPC in TSI To Be Degrown	TELCO	—
6	If TANTOTANs Are Assigned, Obtain CIN Assignments of TANTOTANs on SPC To Be Degrown for Later Use	TELCO	—
7	If Nailup Connections Are Assigned, Obtain TAN Assignments of Nailup Connections on SPC To Be Degrown for Later Use	TELCO	—
8	If TANTOTANs Are Assigned to SPC Being Degrown (Item 5), Using CIN Assignments Obtained in Item 6, Take Down Each TANTOTAN (**ORD:TANTOTAN;RLS,CIN** a:**CIN** b! a = CIN of First Trunk, b = CIN of Second Trunk)	TELCO	DLP-619
9	If Nailup Connections Are Assigned to SPC Being Degrown (Item 5), Request Appropriate Administration Center To Delete Each Nailup Connection on List Obtained in Item 7 Using Recent Change Form 206	TELCO	—
10	Verify That Spare DTU in Degrowth DT Is Available (**OP:OOSUNITS:DT!**)	TELCO	DLP-566
11	Remove Degrowth DTU From Service (**RMV:DT** a,**DTU** b!)	TELCO	DLP-567
	CAUTION: Assure that power is on at the degrowth DTU before proceeding. Power must remain on until the DTU and TSI port are degrown to unequipped and the TSI port is looped back.		
12	Recent Change Submember Equipage From OPER to SGRO Using RC Form 701 (Degrow) (Degrowth DTU)	TELCO	DLP-527

DEGROW DTU AND AS REQUIRED ASSOCIATED TSI PORT AND ESU

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
13	Diagnose Degrowth DTU (**DGN:DT** a,**DTU** b!); After Completion of Diagnostic, at Degrowth DT, Observe That Spare DTU Is Unconditional Released	TELCO	—
14	If EST Exists Between Degrowth DTU and Associated TSI Port and EST Is Equipped With Operational ESU That Is Associated With Degrowth DTU/TSI Port, Perform the Following:		
	1. Remove Associated ESU From Service (**RMV:EST** a,**ESU** b!)	TELCO	DLP-569
	2. Recent Change Submember Equipage From OPER to SGRO Using RC Form 701 (Degrow) (ESU Associated With Degrowth DTU)	TELCO	DLP-527
	3. Diagnose Degrowth Associated ESU (**DGN:EST** a,**ESU** b!); After Completion of Diagnostic, at Degrowth EST, Observe That ESU Is Unconditional Released	TELCO	—
	NOTES: 1. The DTU (and ESU if applicable) may remain in special growth state and the DTU and ESU equipment may remain installed within the operational frame(s) until circuit order work requires the DTU equipment for future reuse, providing the DTU equipment or data cables are not removed or disturbed. 2. This is a safe point to temporarily stop this procedure.		
15	If Degrowth DTU Is To Be Degrown to Unequipped State:		
	1. Recent Change Submember Equipage From OPER to SGRO Using RC Form 701 (Degrow) (TSI Port Associated With Degrowth DTU)	TELCO	DLP-527
	2. Enter Message To Apply TSI Port Pest Control to Degrowth Associated TSI Port (**INH:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
	3. Recent Change Submember Equipage From SGRO to GROW Using RC Form 701 (Degrow) (Degrowth DTU)	TELCO	DLP-527
	4. Recent Change Submember Equipage From GROW to UNEQ Using RC Form 701 (Degrow) (Degrowth DTU)	TELCO	DLP-527
	5. If ESU Is Associated With Degrowth DTU:		
	1. Recent Change Submember Equipage From SGRO to GROW Using RC Form 701 (Degrow) (ESU Associated With Degrowth DTU)	TELCO	DLP-527
	2. At Degrowth ESU, Replace **FB618** Circuit Pack With **FB619** Strap Pack	TELCO	DLP-570
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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
15 (Contd)	3. Recent Change Submember Equipage From GROW to UNEQ Using RC Form 701 (Degrow) (ESU Associated With Degrowth DTU)	TELCO	DLP-527
	6. Recent Change Submember Equipage From SGRO to GROW Using RC Form 701 (Degrow) (TSI Port Associated With Degrowth DTU)	TELCO	DLP-527
	7. Recent Change Submember Equipage From GROW to UNEQ Using RC Form 701 (Degrow) (TSI Port Associated With Degrowth DTU)	TELCO	DLP-527
	8. Disconnect TSI Port Cables and Install TSI Looping Cables or Terminator	TELCO	DLP-571
	9. Enter Message To Allow Degrowth TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
	10. Remove Power From Degrown DTU Using Associated **PWR OFF** Switch on Fuse and Alarm Panel	TELCO	—
	NOTE: If the DT is to be degrown, the degrown DTU circuit packs may remain installed in the DT frame.		
	11. Remove Degrowth DTU Circuit Packs, Power Units, and Disconnect Cabling:		
	A. J68952A-1	TELCO	DLP-577
	B. J68952B-1	TELCO	DLP-578
	12. If Degrown ESU Circuit Packs Are To Be Removed From EST, Remove ESU Circuit Packs	TELCO	DLP-568

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
	NOTE: This procedure may not be executed with the VIU/DTU/DIU associated with the growth ESU in the operational state. If the VIU/DTU/DIU is operational degrowth, of the VIU/DTU/DIU is required followed by pesting and degrowth of the associated TSI port.		
1	Determine From Company Order the Member Number of Echo Suppressor Terminal (EST) Associated With Growth and Echo Suppressor Unit (ESU) Number To Be Grown	TELCO	—
2	Determine Location of ESU Equipment To Be Grown and Select Circuit Packs	TELCO	DLP-579
3	Verify Unequipped Status of Growth Echo Suppressor Unit (ESU) (**VER:UTYPE:EST a,SME b!**)	TELCO	DLP-534
4	Verify Growth ESU Version Number (**VER:UTYPE:EST a!**)	TELCO	DLP-538
5	Assure That Data Cables to TSI and VIU/DTU/DIU Are Connected and/or That **FB619** Strap Pack Is Installed for ESU To Be Added	TELCO	—
6	Diagnose Growth Related EST Using Restore Message (Controllers 0 and 1) (**RST:EST a,CONTR b!**)	TELCO	DLP-535
7	Diagnose Operational ESU (Each Operational ESU in Growth Related EST) (**DGN:EST a,ESU b!**)	TELCO	DLP-536
	CAUTION: The FB618 circuit pack should not be installed at this time.		
8	Install Circuit Packs (Except **FB618**) and Power Converter	TELCO	
9	Diagnose Growth Related EST Using Restore Message (Controllers 0 and 1) (**RST:EST a,CONTR b!**)	TELCO	DLP-535
10	Diagnose Operational ESU (Each Operational ESU in Growth Related EST) (**DGN:EST a,ESU b!**)	TELCO	DLP-536
11	Verify Equipage Status of VIU/DTU/DIU Associated With Growth ESU:		
	A. If Growth ESU Connects to VIU, Verify and Note Equipage Status of VIU Associated With Growth ESU (**VER:UTYPE:VIF a,SME b!**)	TELCO	—
	B. If Growth ESU Connects to DTU, Verify and Note Equipage Status of DTU Associated With Growth ESU (**VER:UTYPE:DT a,SME b!**)	TELCO	—
	C. If Growth ESU Connects to DIU, Verify and Note Equipage Status of DIU Associated With Growth ESU (**VER:UTYPE:DIF a,SME b!**)	TELCO	—
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	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
12	Discontinue This Procedure If VIU/DTU/DIU SME Verified in Item 11 Is Not in SGRO State and Not Ready To Be Interfaced to Growth ESU as Result of VIF/VIU or DT/DTU or DIF/DIU Growth/Degrowth Procedures or as Result of EST Growth Procedures		
13	Recent Change and Verify Submember Equipage UNEQ to GROW (Growth ESU)	TELCO	DLP-501
14	Diagnose Growth ESU Specifying GROWTH (`DGN:EST a,ESU b:GROWTH!`)	TELCO	DLP-537
15	Recent Change and Verify Submember Equipage GROW to SGRO (Growth ESU)	TELCO	DLP-501
16	Connect T and R Data Cables:		
	1. Locate T and R Data Cables and **FB619**/**FB618** Circuit Packs for Growth ESU	TELCO	DLP-581
	2. At Growth Related EST, Remove **FB619** Strap Pack Associated With Growth ESU	TELCO	—
	3. At Strap Pack Removed in Item 16.2, Disconnect ESU to TSI Port Data Cables	TELCO	—
	4. At Strap Pack Removed in Item 16.2, Disconnect ESU to VIU/DTU/DIU Data Cables	TELCO	—
	5. Get **FB618** Circuit Pack and Connect TSI Port to ESU Data Cables at **FB618** Circuit Pack	TELCO	—
	6. Connect ESU to VIU/DTU/DIU Data Cables Onto **FB618** Circuit Pack	TELCO	—
	7. At Growth EST, Install **FB618** Circuit Pack Associated With Growth ESU	TELCO	—
	NOTE: The connecting TSI port equipage must be assured of being in special growth (SGRO) state prior to Item 17.		
17	Diagnose and Restore Connecting TSI Controllers 0 and 1:		
	A. If Connecting TSI Is J4A001A; Specify PH 13 and GROWTH	TELCO	DLP-510
	B. If Connecting TSI Is J4A001B; Specify PH 20 and GROWTH	TELCO	DLP-510
18	Diagnose Growth ESU Specifying Phases 1-3, GROWTH, and ESCSEL (`DGN:EST a,ESU b:PH 1-3,GROWTH,ESCSEL!`)	TELCO	DLP-539
	NOTE: For any channel comprising a VIU/DTU/DIU, a TSI port, and an ESU which is not ready to be brought to the operational state per Item 19, circuit order procedures contained in NTP-015 (VIU) or NTP-019 (DTU) or NTP-024 (DIU) are to be performed later.		
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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
19 For ESU Associated With a VIU/DTU/DIU Which Has Trunks Connected or Transmission Equipment Ready for Test:		
1. Recent Change and Verify Submember Equipage SGRO to OPER (TSI Port Associated With Growth ESU)	TELCO	DLP-501
2. Recent Change and Verify Submember Equipage SGRO to OPER (Growth ESU)	TELCO	DLP-501
3. If Growth ESU Connects to VIU, Recent Change and Verify Submember Equipage SGRO to OPER (Connecting VIU)	TELCO	DLP-501
4. If Growth ESU Connects to DTU, Recent Change and Verify Submember Equipage SGRO to OPER (Connecting DTU)	TELCO	DLP-501
5. If Growth ESU Connects to DIU, Recent Change and Verify Submember Equipage SGRO to OPER (Connecting DIU)	TELCO	DLP-501
6. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
7. Restore Growth ESU (**RST:EST** a,**ESU** b!)	TELCO	DLP-542
8. If Growth ESU Connects to VIU, Restore Growth Associated VIU (**RST:VIF** a,**VIU** b!)	TELCO	DLP-512
9. If Growth ESU Connects to DTU, Restore Growth Associated DTU (**RST:DT** a,**DTU** b!)	TELCO	DLP-512
10. If Growth ESU Connects to DIU, Restore Growth Associated DIU (**RST:DIF** a,**DIU** b!)	TELCO	DLP-512
11. Enter Message To Allow Growth Associated TSI Port **ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—

	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Assure That Digital Interface (DIF) Power Verification and Stand-Alone Tests Have Been Completed	INST	—
2	Verify DIF Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
	1. Verify DIF-E1 UT Translator (**VER:UTYPE:DIF** a!) and Record TSI Port to DIU Assignment for Each Growth DIU for Later Reference	TELCO/INST	DLP-602
	2. Compare Translations Data Against Wiring Records	INST	—
	3. Verify DIF Type Table	TELCO/INST	DLP-616
3	Verify TSI Port to DIU Assignment and TSI Port Equipage Data of Connecting TSI Frame(s) UT Translators, and Compare Translations Data Against Wiring Records:		
	1. Verify TSI Even Member Number UT Translator (**VER:UTYPE:TSI** a!)	TELCO/INST	DLP-548
	2. Verify TSI Odd Member Number UT Translator (**VER:UTYPE:TSI** b!)	TELCO/INST	DLP-548
	3. If DIU 7, 15, 23 and/or 31 Will Be Equipped on This Order:		
	1. Verify Breakage TSI Even Member Number UT Translator (**VER:UTYPE:TSI** c!)	TELCO/INST	DLP-548
	2. Verify Breakage TSI Odd Member Number UT Translator (**VER:UTYPE:TSI** d!)	TELCO/INST	DLP-548
	4. Compare Translations Data Against Wiring Records	INST	—
4	If EST Is Associated With Growth DIF:		
	1. Verify ESU to DIU Assignment and ESU Equipage Data of EST UT Translator (EST Connecting to DIUs 0-6, 8-14) (**VER:UTYPE:EST** a!)	TELCO/INST	DLP-546
	2. If DIU 16 or Higher Will Be Equipped on This Order, Verify ESU to DIU Assignment and ESU Equipage Data of EST UT Translator (EST Connecting to DIUs 16-22, 24-30) (**VER:UTYPE:EST** b!)	TELCO/INST	DLP-546
	3. Compare Translations Data Against Wiring Records	INST	—
5	Remove Growth DIF Power Using Power Switches	INST	—
6	Connect Strapping for K-Code, MI, GI, and Buffer Poll Option	INST	—
7	Connect Private Signal Leads (MSN-MDN) Assignments, Master Timing Links, and Alarms	INST	—

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	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
8	Restore Power to Growth DIF Using Power Switches	INST	—
9	Verify Cabling and Assignments	INST	—
10	Recent Change and Verify DIF Member Equipage From UNEQ to GROW	TELCO	DLP-500
11	Extend or Insert Peripheral Unit Bus Per TOP 234-153-045; Then Continue This Procedure at Item 12 Upon Completion	TELCO/INST	—
12	Enter **RMV:PUB 0!** To Remove Peripheral Unit Bus 0 From Service	TELCO	—
13	Apply Power to Growth DIF IPUB 0, and Controllers 0 and 1 (IPUB 1 Must Be Powered Down)	INST	—
14	Diagnose DIF Controllers 0 and 1, Specifying Phase 1 and 2 (PUB 0)	INST	—
15	Diagnose DIF Controllers 0 and 1, Specifying Phases 1 Through 21 (PUB 0)	INST	—
16	Remove Power From DIF IPUB 0	INST	—
17	Restore Peripheral Unit Bus 0 to Service (**RST:PUB 0!**)	TELCO/INST	DLP-503
18	Enter **RMV:PUB 1!** To Remove Peripheral Unit Bus 1 From Service	TELCO	—
19	Apply Power to Growth DIF IPUB 1	INST	—
20	Diagnose DIF Controllers 0 and 1, Specifying Phase 1 and 2 (PUB 1)	INST	—
21	Diagnose DIF Controllers 0 and 1, Specifying Phases 1 Through 21 (PUB 1)	INST	—
22	Restore Peripheral Unit Bus 1 to Service (**RST:PUB 1!**)	TELCO/INST	DLP-503
23	If Repair or Maintenance Was Required to IPUB or Controller Access Circuitry During IPUB 1 Testing:		
	1. Remove Power From DIF IPUB 1	INST	—
	2. Repeat From Item 12	TELCO/INST	—
24	Apply Power to DIF IPUB 0	INST	—
25	Diagnose DIF Controllers 0 and 1, Specifying Phases 1 Through 21	INST	—
26	Recent Change and Verify DIF Member Equipage From GROW to SGRO	TELCO	DLP-500
27	Diagnose DIF Controllers 0 and 1, Specifying Phases 1 Through 21	INST	—
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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
28	Recent Change and Verify DIF Submember Equipage From UNEQ to GROW:		
	A. Digital Interface Unit (DIU) 32 (Spare Low) (SME Name=DIUSPQA Index Number=175)	TELCO	DLP-501
	B. Digital Interface Unit (DIU) 33 (Spare High) (SME Name=DIUSPQB Index Number=176)	TELCO	DLP-501
29	Diagnose Spare DIUs (DIU 32 and 33)	INST	—
30	Recent Change and Verify DIF Submember Equipage From GROW to SGRO:		
	A. DIU 32 (Spare Low) (SME Name=DIUSPQA Index Number=175)	TELCO	DLP-501
	B. DIU 33 (Spare High) (SME Name=DIUSPQB Index Number=176)	TELCO	DLP-501
31	Diagnose Spare DIUs (DIU 32 and 33)	INST	—
32	Diagnose DIF Controllers 0 and 1, Specifying Phases 22 and 23 (With PSW, Select, and Growth Options)	INST	—
33	Determine Number of DIUs Initially Supplied and Their Submember Numbers (DIU 0 Through 31)	TELCO/INST	—
34	Recent Change and Verify DIF Submember Equipage From UNEQ to GROW (Initially Supplied DIUs)	TELCO	DLP-501
35	Diagnose Each Initially Supplied DIU (Assure That Each DIU in Growth State Is Looped at Input and Output Ports)	INST	—
36	Recent Change and Verify DIF Submember Equipage From GROW to SGRO (Initially Supplied DIUs)	TELCO	DLP-501
37	Diagnose Each Initially Supplied DIU	INST	—
38	Diagnose DIF Controllers 0 and 1, Specifying Phases 1 Through 23 With PSW, Select, and Growth Options	INST	—
39	Enter Message To Apply Port Pest to Each TSI Port Connecting to Initially Supplied DIUs (INH:TSI a,SPC b,PORT c!)	TELCO	—
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40	Connect TSI Port Cables:		
	A. If No EST Exists Between Growth DIF and Associated TSI, Remove TSI Looping Terminators and DIU Output Loop Cables; Connect Signal Cables to DIUs and TSI Ports	INST	—
	B. If EST Exists Between Growth DIF and Associated TSI and If ESUs Are in Strap Through Condition and Marked Unequipped in Translator, Remove TSI Looping Terminators and Connect Signal Cables at **FB619** Strap Pack of ESUs, at DIUs, and at TSI Ports	INST	—
41	Recent Change and Verify TSI Submember Equipage From UNEQ to GROW		
	1. TSI Ports Connecting to Initially Supplied DIUs (DIUs 0-6, 8-14, 16-22, 24-30)	TELCO	DLP-501
	2. If DIU 7, 15, 23 and/or 31 Is Initially Supplied, Recent Change Breakage TSI Ports Connecting to DIU 7, 15, 23, and/or 31	TELCO	DLP-501
42	Recent Change and Verify TSI Submember Equipage From GROW to SGRO:		
	1. TSI Ports Connecting to Initially Supplied DIUs (DIUs 0-6, 8-14, 16-22, 24-30)	TELCO	DLP-501
	2. If DIU 7, 15, 23 and/or 31 Is Initially Supplied, Recent Change Breakage TSI Ports Connecting to DIU 7, 15, 23, and/or 31	TELCO	DLP-501
43	Diagnose and Restore Connecting TSI Frame(s) Controllers 0 and 1 (Specifying Appropriate Phase and Growth)	TELCO/INST	DLP-522
44	Verify Cabling and Loop Connections Have Been Provided for All Digroup Inputs to DIUs at DSX1 or Directly Connected LT1 Bays	INST	—
45	Diagnose DIF Controllers 0 and 1	INST	—
46	Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
47	At Bus Interface Units 0 and 1, and at Controller 0, Rotate **OFF** Switch to Normal Position and Controller **1 OFF** Switch to **ROS**	INST	—
48	Recent Change and Verify DIF Member Equipage From SGRO to OPER	TELCO	DLP-500
49	Enter Message To Restore and Initialize Controller 0 to Simplex Operation (**RST:DIF** a,**CONTR 0!**) CATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	—
50	Restore and Initialize Controller 1 Using **CONT1** Power Switch	TELCO/INST	DLP-505
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51	Recent Change and Verify DIF Submember Equipage From SGRO to OPER:		
	A. DIU 32 (Spare Low) (SME Name=DIUSPQA Index Number=175)	TELCO	DLP-501
	B. DIU 33 (Spare High) (SME Name=DIUSPQB Index Number=176)	TELCO	DLP-501
52	Restore Spare DIUs:		
	1. Enter Message To Restore DIU 32 (**RST:DIF** a,**DIU 32**!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
	2. Enter Message To Restore DIU 33 (**RST:DIF** a,**DIU 33**!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
53	Activate DIU Equipment:		
	A. For Each DIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface With TSI Port Via Equipped ESU, Complete DIU/ESU/TSI Interface Using NTP-011 (Echo Suppressor Growth)	TELCO/INST	—
	B. For Each DIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface Directly to TSI or Via Strap Through **FB619** Pack in EST (Unequipped ESU Position), Perform the Following:		
	1. Recent Change and Verify Submember Equipage From SGRO to OPER:		
	1. TSI Port Associated With DIU	TELCO	DLP-501
	2. Associated DIU	TELCO	DLP-501
	2. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT**!); Wait for Message Complete (**MSG COMPL**)	TELCO	—
	3. Enter Message To Restore DIU (**RST:DIF** a,**DIU** b!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
	4. Enter Message to Allow Growth Associated TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
	5. Repeat From Item 53.B.1 for Additional TSI-DIU Interfaces	TELCO/INST	—

DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
	NOTES: 1. In following procedure, DIF refers to either DIF-E1 Domestic or DIF unless DIF-E1 specified. 2. A DIF-E1 can contain up to 4 MF DIUs or 4 DTMF DIUs (1, 18, 9, and 26), but not a combination of both. DIUs 1, 18, 9, and 26 should be grown in sequence. 3. **SM10** DIU can only be grown in 4E14 or later generic office. 4. If **SM9** or **SM10** DIU is being added, it may be added only to DIF-E1 with an MTHG of 4 or 5. 5. A DIF (J68960A) can only contain voice DIUs. 6. All operational DIUs must be in-service.		
1	Determine From Company Order the Member Number of Digital Interface (DIF) Associated With Growth and Digital Interface Unit (DIU) Number To Be Grown	TELCO	—
2	Determine Frame Location of DIU Equipment To Be Grown and Select Circuit Packs	TELCO	DLP-540
3	Verify Growth DIU Equipage Status, Version Number, and DIU to TSI Port Assignment in DIF UT Translator (**VER:UTYPE:DIF** a!)	TELCO	DLP-610
4	If ESU Is Associated With Growth DIU, Verify ESU to Growth DIU Assignment and ESU Equipage Status in EST UT Translator (**VER:UTYPE:EST** a!)	TELCO	DLP-546
5	Verify DIF Type Table	TELCO	DLP-616
6	If LIST 14 (**SM9** Pack) or LIST 15 (**SM10** Pack) DIU Is Being Added, Verify That DIUs 32 and 33 Are Equal to or Greater Than LIST Number of Associated Growth Unit	TELCO	—
7	Determine Which TSI Member Number Has Port Connecting to Growth DIU	TELCO	—
8	Verify TSI Port to Growth DIU Assignment and TSI-SPC Port Equipage Status in TSI UT Translator (**VER:UTYPE:TSI** a!)	TELCO	DLP-548
9	Diagnose DIF Controllers 0 and 1 Using Restore Message (**RST:DIF** a,**CONTR** b!)	TELCO	DLP-521
10	Visually Inspect Backplane Area of Growth DIU for Bent Pins and Crosses	TELCO	—
11	If DIU 32 or 33 (Spare DIU) Is To Be Changed:		
	1. Diagnose Spare DIU (**DGN:DIF** a,**DIU** b!); ATP Required	TELCO	—
	2. Remove Power From Spare DIU Using Unit Power Switch	TELCO	—

ADD DIGITAL INTERFACE UNIT (DIU) TO OPERATIONAL DIGITAL INTERFACE (DIF-E1) DOMESTIC OR DIF (J68960A)

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
11 (Contd)	3. Replace Spare DIU Circuit Packs With Required Circuit Packs	TELCO	—
	4. Perform Functional Word Change of Spare DIU Type	TELCO	DLP-618
	5. Restore Power to Spare DIU Using Unit Power Switch	TELCO	—
	6. Restore Spare DIU to Service (RST:DIF a,DIU b!); ATP Required	TELCO	—
12	Assure That Power to Growth DIU Is Off Using Unit Power Switch	TELCO	—
13	Install Growth DIU Circuit Packs and Power Converters; Place Power Converter Switches to ON	TELCO	DLP-541
14	Verify That Input/Output Looping Devices Are in Place for Growth DIU Output (T, R) and at DSX1 or Directly Connecting LT1 Bays	TELCO	—
15	Recent Change and Verify Submember Equipage From UNEQ to GROW (Growth DIU)	TELCO	DLP-501
16	Apply Power to Growth DIU Using Unit Power Switch	TELCO	—
17	Diagnose Growth DIU, Specifying Growth and Appropriate Phases (CATP Expected); INST Clear Equipment Troubles:		
	A. Specify Phases 1 Through 4 for MF or DTMF DIU (NTR on Phases 3 and 4)	TELCO	DLP-611
	B. Specify Phases 1 Through 3 for All Other DIUs	TELCO	DLP-611
18	Recent Change and Verify Submember Equipage From GROW to SGRO (Growth DIU)	TELCO	DLP-501
19	Diagnose Growth DIU, Specifying Growth and Appropriate Phases (ATP Required); INST Clear Equipment Troubles:		
	A. Specify Phases 1 Through 4 for MF or DTMF DIU	TELCO	DLP-612
	B. Specify Phases 1 Through 3 for All Other DIUs	TELCO	DLP-612
	NOTE: Items 20 through 26 must be performed without interruption.		
20	Enter Messages To Apply Pests on TSI Port Connecting to Growth DIU, Growth DIF and if Associated, EST:		
	1. INH:TSI a,SPC b,PORT c!	TELCO	—
	2. INH:DIF a,APUF!	TELCO	—
	(Continued on Page 3)		

ADD DIGITAL INTERFACE UNIT (DIU) TO OPERATIONAL DIGITAL INTERFACE (DIF-E1) DOMESTIC OR DIF (J68960A)

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DO THE ITEMS BELOW IN THE ORDER LISTED		FOR DETAILS, GO TO	
20 (Contd)	3. INH:DIF a,APUT!	TELCO	—
	4. If EST Is Associated: INH:EST a,APUF!	TELCO	—
	5. If EST Is Associated: INH:EST a,APUT!	TELCO	—
21	Connect TSI Port Cables:		
	A. If No EST Exists Between DIU and Associated TSI, Remove TSI Looping Terminators and DIU Output Loop Cables. Connect Signal Cables at Growth DIU and TSI Ports	TELCO	DLP-583
	B. If EST Exists Between Growth DIU and Associated TSI:		
	1. At Growth Related EST, Remove **FB619** Strap Pack Associated With Growth DIU	TELCO	—
	2. At Strap Pack Removed in Item 21.B.1, Connect Cables From Growth DIU	TELCO	—
	3. At Growth Related EST, Install Strap Pack Removed in Item 21.B.1	TELCO	—
	4. Remove TSI Port Loop and Connect Data Cables to TSI Port and DIU	TELCO	DLP-583
22	Recent Change and Verify Submember Equipage UNEQ to GROW (TSI Port Connecting to Growth DIU)	TELCO	DLP-501
23	Recent Change and Verify Submember Equipage GROW to SGRO (TSI Port Connecting to Growth DIU)	TELCO	DLP-501
24	Diagnose and Restore Connecting TSI Controllers 0 and 1 (Specifying Appropriate Phase and Growth)	TELCO	DLP-522
25	Diagnose Growth DIU (Specifying Growth) (DGN:DIF a,DIU b:GROWTH!)	TELCO	DLP-520
26	Enter Messages To Allow Pests on Growth DIF and, if Associated, EST:		
	1. ALW:DIF a,APUF!	TELCO	—
	2. ALW:DIF a,APUT!	TELCO	—
	3. If EST Associated: ALW:EST a,APUF!	TELCO	—
	4. If EST Associated: ALW:EST a,APUT!	TELCO	—
	(Continued on Page 4)		

ADD DIGITAL INTERFACE UNIT (DIU) TO OPERATIONAL DIGITAL INTERFACE (DIF-E1) DOMESTIC OR DIF (J68960A)

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
27	Activate DIU Equipment:		
	A. For DIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface to TSI Port Via Equipped ESU, Complete DIU/ESU/TSI Interface Using NTP-021 (Echo Suppressor Unit Growth)	TELCO	—
	B. For DIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface Directly to TSI or Via Strap Through **FB619** Pack in EST (Unequipped ESU Position), Perform the Following:		
	1. Recent Change and Verify Submember Equipage From SGRO to OPER (TSI Port Associated With Growth DIU)	TELCO	DLP-501
	2. Recent Change and Verify Submember Equipage From SGRO to OPER (Growth DIU)	TELCO	DLP-501
	NOTE: An indicated service degrading condition will occur after **AUD:PUSTAT** message is entered.		
	3. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
	4. Restore Growth DIU (**RST:DIF a,DIU b!**)	TELCO	DLP-512
	5. Enter Message To Allow Growth Associated TSI Port (**ALW:TSI a,SPC b,PORT c!**)	TELCO	—
28	If MF or DTMF DIU Being Grown, Continue; Otherwise, End of Procedure	TELCO	—
29	Verify Assignment of Growth MF or DTMF DIU Service Circuits and Test:		
	1. Check Growth DIU Receiver Service Circuits; Look for Traffic Numbers Associated With Growth DIU (**OP:TRKSTAT,CIN a SVC b;SUM:NUM 16,STAT CAD.DSA!** b = ***MFR****** for MF Service Circuits or ***DMRV***** for DTMF Service Circuits)	TELCO	DLP-614
	2. Set Trunk Status for 16 Receivers in Newly Grown DIU to Maint Lockout State (**SET:TRKSTAT MTC.LKO,CIN a SVC b;SUM:NUM 16!** b = ***MFR****** for MF Service Circuits or ***DMRV***** for DTMF Service Circuits)	TELCO	—
	3. Verify That Transmitter Is Active for Testing Receivers	TELCO	DLP-617
	4. Enter Message To Idle Tone Detector for Testing Receivers (**SCHED:TRKTEST,OPR:TIMEON 0000,TIMEOFF 0001!**)	TELCO	—
	NOTE: A tone detector must be idle active before receiver testing can be performed.		

ADD DIGITAL INTERFACE UNIT (DIU) TO OPERATIONAL DIGITAL INTERFACE (DIF-E1) DOMESTIC OR DIF (J68960A)

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		DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
29 (Contd)	5.	Test Growth DIU Receiver Service Circuits (TEST:TRK,CIN a SVC b;SVC:TSG,STAT MTC.LKO,PALL! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits)	TELCO	DLP-615
	6.	Check Growth DIU Transmitter Service Circuits, Look for Traffic Numbers Associated With Growth DIU (OP:TRKSTAT,CIN a SVC b;SUM:NUM 16,STAT CAD.DSA! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO	DLP-614
	7.	Set Trunk Status for 16 Transmitters in Newly Grown DIU to Maint Lockout State (SET:TRKSTAT MTC.LKO,CIN a SVC b;SUM:NUM 16! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO	—
	8.	Verify That Receiver Is Active for Testing Transmitters	TELCO	DLP-617
	9.	Test Growth DIU Transmitter Service Circuits (TEST:TRK,CIN a SVC b;SVC:TSG,STAT MTC.LKO,PALL! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO	DLP-615
30		Bring Newly Grown MF or DTMF DIU Service Circuits to Active State:		
	1.	For Receivers, Input SET:TRKSTAT ACT,CIN a SVC b;SUM:NUM 16! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits)	TELCO	—
	2.	For Transmitters, Input SET:TRKSTAT ACT,CIN a SVC b;SUM:NUM 16! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO	—

ADD DIGITAL INTERFACE UNIT (DIU) TO OPERATIONAL DIGITAL INTERFACE (DIF-E1) DOMESTIC OR DIF (J68960A)

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Recent Change and Verify Submember Equipage SGRO to OPER (TSI Port Associated With Added ESU)	TELCO	DLP-501
2	Recent Change and Verify Submember Equipage SGRO to OPER (Added ESU)	TELCO	DLP-501
3	Recent Change and Verify Submember Equipage SGRO to OPER (Connecting DIU)	TELCO	DLP-501
4	Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
5	Restore Added ESU (**RST:EST a,ESU b!**)	TELCO	DLP-542
6	Restore Growth Associated DIU (**RST:DIF a,DIU b!**)	TELCO	DLP-512
7	Enter Message To Allow Growth Associated TSI Port (**ALW:TSI a,SPC b,PORT c!**)	TELCO	—

ADVANCE DIU, ADDED ESU, AND CONNECTING TSI PORT FROM SPECIAL GROWTH TO OPERATIONAL

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
	NOTES: 1. The terms first and second terminal unit refers to primary (first) and backup (second) terminal of a domestic terminal unit pair, or primary (first) and secondary (second) terminal of an international terminal unit group. These terminal units are also referred to as mates. 2. Terminal units of a domestic pair or international group must not reside in the same terminal group (TGR) frame.		
1	Assure Following Prerequisites for Starting Terminal Conversion Are Completed:		
	1. Verify That Far-End of VFL Is in Proper Generic; PG68XXX at STP for A and E Links	TELCO	—
	2. Verify That 2048A Data Set Growth Is Completed at Both Near and Far Ends of VFL	TELCO	—
	3. Coordination and Planning Must Be Completed So That Both Ends of VFL Are Aware of Link Conversion Schedule	TELCO	—
2	Determine From Company Order Member Number of Terminal Group (TGR) Frame and Terminal Unit To Be Converted From Standard to Enhanced Operation	TELCO	—
3	Assure 2048A Data Set Is Conditioned for In-Service Operation:		
	1. If **C-MT** Is Flashing at Data Set Alphanumeric Display, Stop Execution of CONTINUOUS MODEM TEST	TELCO	DLP-597
	2. Verify That Data Set Options and Switch Settings Are Correct	TELCO	DLP-595
4	Assure Availability of Terminal Unit Equipment Required for Conversion	TELCO	DLP-596
5	Verify CCDSM, CCDSS, and STYPE Data of TGR Unit Type (UT) Translator for Terminal To Be Converted (**VER:UTYPE:TGR** a,**SME** b!)	TELCO	DLP-588
	NOTE: The data to be changed in Items 6 and 7 are to be changed to the test state only; activation will be performed later in this procedure.		
6	If Required, Perform Functional Word Change of TGR Terminal CCDSM and CCDSS Data	TELCO	DLP-589
7	Perform Functional Word Change to TGR Terminal STYPE Data	TELCO	DLP-590
	NOTE: Items 8 through 16 should be performed without delay as the terminal will be out of service.		
8	Remove From Service TGR Terminal Being Converted (**RMV:TGR** a,**TER** b!)	TELCO	—

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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
9	Remove Power From TGR Terminal Being Converted Using Terminal Power Switch	TELCO	—
10	Replace 201D Modem With Terminal Modem Interface (TMI) and Install Additional Memory Packs	TELCO	DLP-591
11	Connect M25A and M37A Cords at Terminal Being Converted and Associated Data Set	TELCO	—
12	Activate CCDSM and CCDSS Data of TGR Terminal Being Converted (If Required); RC in Item 6	TELCO	DLP-592
13	Activate STYPE Data of TGR Terminal Being Converted (If Required); RC in Item 7	TELCO	DLP-592
14	Assure That STP Office Has Converted Their Terminals to Enhanced Operation and Is Ready To Bring Up New Link	TELCO	—
	NOTE: 1. It can take 5 minutes or longer for terminals to pass initial synchronization test. 2. If failures occur and ATP conditions cannot be achieved before the next busy hour, the converted terminal should be changed back to standard configuration and brought back in service.		
15	Power Up Converted Terminal and Restore to Service; ATP Results Required	TELCO	DLP-593
16	Verify That Associated Signal Link Was Put in Service	TELCO	DLP-594
17	Assure Proper Operation of Converted Terminal and Signaling Link for a 24-Hour Period Before Bringing Up Mate Terminal	TELCO	—
18	Repeat Items 2 Through 16 for Mate Terminal	TELCO	—

DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
1	Determine From Company Order the DIU Number To Be Degrown and Associated DIF, TSI, and ESU, if Required	TELCO	—
2	Obtain From Appropriate Administration Center the Base Trunk Assignment Number (TAN) Served by DIU To Be Degrown	TELCO	—
3	Verify TAN to DIU Assignment (**VER:TRKNAME,TAN a;DETL!**)	TELCO	DLP-564
4	Change Degrowth DIU Trunks to Circuit Administration Disabled (**CAD.DSA**) State and Verify	TELCO	DLP-565
	NOTE: All TANs assigned to degrowth DIU must be in **CAD.DSA** state in output message of Item 4 before continuing with this procedure.		
5	If Service Circuit Trunks Are Associated With Degrowth DIU, Request Appropriate Administration Center To Delete Service Circuit Trunks Served by DIU To Be Degrown Using RC Form 202	TELCO	—
6	Request Appropriate Administration Center To Determine If Any TANTOTANs and/or Nailup Connections Are Assigned to SPC in Associated TSI	TELCO	—
7	If TANTOTANs Are Assigned, Obtain CIN Assignments of TANTOTANs on SPC To Be Degrown for Later Use	TELCO	—
8	If Nailup Connections Are Assigned, Obtain TAN Assignments of Nailup Connections on SPC To Be Degrown for Later Use	TELCO	—
9	If TANTOTANs Are Assigned to SPC Being Degrown (Item 6), Using CIN Assignments Obtained in Item 7, Take Down Each TANTOTAN (**ORD:TANTOTAN;RLS,CIN a:CIN b!**)	TELCO	DLP-619
10	If Nailup Connections Are Assigned to SPC Being Degrown (Item 6), Request Appropriate Administration Center To Delete Each Nailup Connection on List Obtained in Item 8 Using RC Form 206	TELCO	—
11	Verify That Spare DIU in Degrowth DIF Is Available (**OP:OOSUNITS:DIF!**)	TELCO	DLP-566
12	Remove Degrowth DIU From Service (**RMV:DIF a,DIU b!**)	TELCO	DLP-567
	CAUTION: Assure that power is on at degrowth DIU before proceeding. Power must remain on until the DIU and TSI port are degrown to unequipped and the TSI port is looped back.		

DEGROW DIU AND AS REQUIRED ASSOCIATED TSI PORT AND ESU

DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
13	Recent Change Submember Equipage From OPER to SGRO Using RC Form 701 (Degrow) [Degrowth DIU]	TELCO	DLP-527
14	Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
15	Diagnose Degrowth DIU (**DGN:DIF a,DIU b!**)	TELCO	—
16	At MCC **EQUIPMENT STATUS** Panel, Depress **DIGITAL INTERFACE** Key and Assure That No DIU Is Listed for Degrowth Associated Half of DIF (0-15 or 16-31)	TELCO	—
17	If EST Exists Between Degrowth DIU and Associated TSI Port and EST Is Equipped With Operational ESU That Is Associated With Degrowth DIU/TSI Port, Perform the Following:		
	1. Remove Associated ESU From Service (**RMV:EST a,ESU b!**)	TELCO	DLP-569
	2. Recent Change Submember Equipage From OPER to SGRO Using RC From 701 (Degrow) [ESU Associated With Degrowth DIU]	TELCO	DLP-527
	3. Diagnose Degrowth Associated ESU (**DGN:EST a,ESU b!**)	TELCO	—
	4. At MCC **EQUIPMENT STATUS** Panel, Depress **ECHO SUPP TERMINAL** Key and Assure That No ESU Is Listed for Degrowth Associated EST	TELCO	—
	NOTES: 1. The DIU (and ESU, if applicable) may remain in special growth state and the DIU and ESU equipment may remain installed within the operational frame(s) until circuit order work requires the DIU equipment for future reuse, providing the DIU equipment or data cables are not removed or disturbed. 2. This is a safe point to temporarily stop this procedure.		
18	If Degrowth DIU Circuit Packs Are To Be Removed From DIF Frame:		
	1. Recent Change Submember Equipage From OPER to SGRO Using RC Form 701 (Degrow) [TSI Port Associated With Degrowth DIU]	TELCO	DLP-527
	2. Enter Message To Apply TSI Port Pest Control to Degrowth Associated TSI Port (**INH:TSI a,SPC b,PORT c!**)	TELCO	—
	3. Recent Change Submember Equipage From SGRO to GROW Using RC Form 701 (Degrow) [Degrowth DIU]	TELCO	DLP-527
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DEGROW DIU AND AS REQUIRED ASSOCIATED TSI PORT AND ESU

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
18 (Contd)	4. Recent Change Submember Equipage From GROW to UNEQ Using RC Form 701 (Degrow) [Degrowth DIU]	TELCO	DLP-527
	5. If ESU Is Associated With Degrowth DIU:		
	1. Recent Change Submember Equipage From SGRO to GROW Using RC Form 701 (Degrow) [ESU Associated With Degrowth DIU]	TELCO	DLP-527
	2. At Degrowth ESU, Replace **FB618** Circuit Pack With **FB619** Strap Pack	TELCO	DLP-570
	3. Recent Change Submember Equipage From GROW to UNEQ Using RC Form 701 (Degrow) [ESU Associated With Degrowth DIU]	TELCO	DLP-527
	6. Recent Change Submember Equipage From SGRO to GROW Using RC Form 701 (Degrow) [TSI Port Associated With Degrowth DIU]	TELCO	DLP-527
	7. Recent Change Submember Equipage From GROW to UNEQ Using RC Form 701 (Degrow) [TSI Port Associated With Degrowth DIU]	TELCO	DLP-527
	8. Disconnect Degrown TSI Port Cables and Install TSI Looping Cables or Terminator	TELCO	DLP-571
	9. Enter Message To Allow Degrowth TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
	10. Remove Power From Degrowth DIU Using **UNIT** Power Switch	TELCO	—
	11. Remove Degrowth DIU Circuit Packs, Power Units, and Disconnect Cabling	TELCO	DLP-598
	12. If Degrown ESU Circuit Packs Are To Be Removed From EST, Remove ESU Circuit Packs	TELCO	DLP-568

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
	RESPONSIBILITY	
1 Assure That the Following Prerequisites Have Been Met: • Verify That Digroup Terminal (DT) Considered for Degrowth Contains Only Message Trunk Assignments • All DTUs and Associated TSI Ports and ESUs Have Been Degrown From Degrowth DT per NTP-020	TELCO	—
2 Recent Change and Verify Member Equipage of Degrowth DT From OPER to SGRO (Degrow) Using RC Form 701	TELCO	DLP-526
3 Run Peripheral Unit Status Audit (**AUD:PUSTAT!**)	TELCO	—
4 Recent Change and Verify Member Equipage of Degrowth DT From SGRO to GROW (Degrow) Using RC Form 701	TELCO	DLP-526
5 Recent Change and Verify Member Equipage of Degrowth DT From GROW to UNEQ (Degrow) Using RC Form 701	TELCO	DLP-526
6 Verify That SP2/DT Interface Data Reflects Degrowth of DT by Dumping Call Store Address of SP4RCRTSTAT (Contact Local Assistance Center for Assistance)	TELCO	DLP-599
7 Remove Power From Degrowth DT Controllers 0 and 1 and Spare DTU (DTU 8) Using Power Switches	INST	—
8 Remove **+140V** and **+24V** Fuses at Power Distribution Bays and Remove Power Cables From DT	INST	—
9 Remove SP2 to DT Frame Interface Cables and TSI Clock Interface Cables	INST	—
10 Install Looping Devices for Transmission Facilities at DSX, LT-1, or Repeater Bays	INST	—
11 Remove Transmission Cables Between DTF and DSX, LT-1, or Repeater Bays	INST	—
12 Remove Alarm Wiring in Degrown DTF; If DTF Is in Middle of Lineup, Place New Cable Between Remaining Frames to Bridge Open	INST	—
13 Remove Private Signal Leads — MSD (DA0/0/-DA0/8) and MSN (SCA0/0/-SCA0/1)	INST	—
14 Remove DTF Common Circuits (Telephone Jacks, TTY Jacks, Appliance Outlets)	INST	—
15 Remove Degrown DT Frame From Lineup	INST	—

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
1	Assure That All VIUs and Associated TSI Ports and ESUs Have Been Degrown From Degrowth VIF per NTP-016	TELCO	—
2	Recent Change and Verify Member Equipage of Degrowth VIF From OPER to SGRO (Degrow) Using RC Form 701	TELCO	DLP-526
3	Run Peripheral Unit Status Audit (**AUD:PUSTAT!**)	TELCO	—
4	Recent Change and Verify Member Equipage of Degrowth VIF From SGRO to GROW (Degrow) Using RC Form 701	TELCO	DLP-526
5	Remove Power From Degrowth VIF Controllers, IPUBS and Spare VIU (VIU 7) Via Power Switches	TELCO	—
	NOTE: Do not remove +140V and +24V power from degrowth VIF at power distribution frame at this time.		
6	Remove Degrowth VIF From Peripheral Unit Bus Using Selected Option A or B in TOP 234-153-045; Then Continue This Procedure at Item 6 Upon Completion		
	A. When Degrowth Frame Is Last Frame on PUB Branch	TELCO/INST	—
	B. When Degrowth Frame Is Between Two Operational Frames on PUB Branch	TELCO/INST	—
7	Recent Change and Verify Member Equipage of Degrowth VIF From GROW to UNEQ (Degrow) Using RC Form 701	TELCO	DLP-526
	CAUTION: Assure that Installer removes clock cables per Installation Handbook to prevent possible service interruption.		
8	Remove Clock Cables Between Degrowth VIF and Associated TSI	INST	—
9	Remove Transmission Cables Between Degrowth VIF Frame and Toll Terminal Frame(s)	INST	—
10	Cables Between Toll Terminal Frame(s) and SP1 Containing E and M Leads Associated With Degrowth VIF May Be Removed at This Time or When Degrowing Toll Terminal Frame(s)	INST	—
11	Remove Alarm Cables in Degrowth VIF. If VIF Is in Middle of Lineup, Place New Cable Between Remaining Frames to Bridge Open	INST	—
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DEGROW VOICEBAND INTERFACE (VIF) FRAME — SUPPORT TO INSTALLER (INST)

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
12	Remove Private Signal Leads (MSD, PP, MSN)	INST	—
13	Remove +140V and +24V Power From Degrowth VIF at Power Distribution Frame	INST	—
14	Remove Degrowth VIF Common Circuits (Telephone Jacks, TTY Jacks, Appliance Outlets)	INST	—
15	Remove Degrown VIF Frame From Lineup	INST	—
16	At Degrowth Associated TSI, Connect Strapping Per SD-4A083-01 NOTE 256 (for TSI-B Frame) or SD-4A011 NOTE 245 (for TSI Frame) for Each SPC Associated With Degrowth VIUs	INST	—
17	Diagnose TSI Controllers 0 and 1 Associated With Degrowth VIF (DGN:TSI a,CONTR b!)	TELCO/INST	—

DEGROW VOICEBAND INTERFACE (VIF) FRAME — SUPPORT TO INSTALLER (INST)

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
	NOTES: 1. If DIF-E1 (member number 24 through 31) is to be added, verify that assigned PUB branch contains only above noted DIF-E1 member numbers. Cabling and wiring changes associated with PUBB frame, are required. Refer to SD-4A019-01 LDI 8A and SD-4A038-01 LDI 7A. 2. **SM10** DIU can only be grown in 4E14 or later generic office. 3. **SM9** or **SM10** DIUs must be grown into MF 4 State of DTMF Frame type.		
	CAUTION 1. Only MF or DTMF, with normal breakage DIUs, may be equipped when MF or DTMF DIUs utilizes a breakage TSI. It is critical that strict hardware configuration guidelines be followed. The growth configuration should be verified to prevent system interruption. If problems occur in verifying, contact appropriate installation support group. *CAUTION 2. This procedure must be performed during light traffic periods.*		
1	Perform Preliminary Installation Activities and Assure That DIF-E1 Power Verification Test Is Completed	INST	—
2	Determine Submember Numbers and Type of DIUs To Be Grown From Company Order:		
	A. Voice DIUs (Submembers 0-31)	TELCO/INST	—
	B. MF or DTMF DIUs (Submembers 1, 18, 9, 26)	TELCO/INST	—
	C. All Other DIUs	TELCO/INST	—
	CAUTION: The DIF-E1 unit-type structure must be verified carefully to assure that the software reflects the feature configuration engineered for this frame.		
3	Verify DIF-E1 Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
	1. Verify DIF-E1 UT Translator (**VER:UTYPE:DIF** a!) and Record TSI Port to DIU Assignment for Each Growth DIU for Later Reference	TELCO/INST	DLP-602
	2. Compare Translations Data Against Wiring Records	INST	—
	3. If LIST 14 (**SM9** Pack) or LIST 15 (**SM10** Pack) DIU Is Being Added, Verify That DIUs 32 and 33 Are Equal to or Greater Than List Number of Associated Growth Unit	INST	—
	4. Verify DIF Type Table	TELCO/INST	DLP-616

ADD DIGITAL INTERFACE (DIF-E1) DOMESTIC — SUPPORT TO INSTALLER (INST)

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
4	Verify TSI Port to DIU Assignment and TSI Port Equipage Data of Connecting TSI Frame(s) UT Translators, and Compare Translations Data Against Wiring Records:		
	1. Verify TSI UT Translator for One TSI Member Number Recorded in Item 3.1 (**VER:UTYPE:TSI a!**)	TELCO/INST	DLP-548
	2. Repeat Item 4.1 for Each TSI Member Number Recorded in Item 3.1	TELCO/INST	—
	3. Compare Translations Data Against Wiring Records	INST	—
5	Remove Growth DIF-E1 Power Using Power Switches	INST	—
6	Connect Strapping for K-Code, MI, GI, and Buffer Poll Option	INST	—
7	Connect Private Signal Leads (MSN-MDN) Assignments, Master Timing Links, and Alarms	INST	—
8	Restore Power to Growth DIF-E1 Using Power Switches	INST	—
9	Verify Major and Minor Alarms	INST	—
10	Recent Change and Verify DIF-E1 Member Equipage From UNEQ to GROW	TELCO	DLP-500
11	Extend or Insert the Peripheral Unit Bus Per TOP 234-153-045; Continue This Procedure at Item 12 Upon Completion	TELCO/INST	—
12	Enter **RMV:PUB 0!** To Remove Peripheral Unit Bus 0 From Service	TELCO	—
13	Apply Power to Growth DIF-E1 IPUB 0, and Controllers 0 and 1 (IPUB 1 Must Be Powered Down)	INST	—
14	Diagnose DIF-E1 Controllers 0 and 1, Specifying Phases 1 and 2, PUB 0, and GROWTH	INST	—
15	Diagnose DIF-E1 Controllers 0 and 1, Specifying Phases 1 Through 21, PUB 0, and GROWTH	INST	—
16	Remove Power From DIF-E1 IPUB 0	INST	—
17	Restore Peripheral Unit Bus 0 to Service (**RST:PUB 0!**)	TELCO/INST	DLP-503
18	Enter **RMV:PUB 1!** To Remove Peripheral Unit Bus 1 From Service	TELCO	—
19	Apply Power to Growth DIF-E1 IPUB 1	INST	—
20	Diagnose DIF-E1 Controllers 0 and 1, Specifying Phases 1 and 2, PUB 1, and GROWTH	INST	—
21	Diagnose DIF-E1 Controllers 0 and 1, Specifying Phases 1 Through 21, PUB 1, and GROWTH	INST	—
22	Restore Peripheral Unit Bus 1 to Service (**RST:PUB 1!**)	TELCO/INST	DLP-503

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	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
23	If Repair or Maintenance Was Required to IPUB or Controller Access Circuitry During IPUB 1 Testing:		
	1. Remove Power From DIF-E1 IPUB 1	INST	—
	2. Repeat From Item 12	TELCO/INST	—
24	Apply Power to DIF-E1 IPUB 0	INST	—
25	Recent Change and Verify DIF-E1 Member Equipage From GROW to SGRO	TELCO	DLP-500
26	Diagnose DIF-E1 Controllers 0 and 1, Specifying Phases 1 Through 21 and GROWTH	INST	—
27	Recent Change and Verify DIF-E1 Submember Equipage From UNEQ to GROW:		
	A. DIU 32 (Spare Low) (SME Name-DIUSPQA Index Number=175)	TELCO	DLP-501
	B. DIU 33 (Spare High) (SME Name-DIUSPQB Index Number=176)	TELCO	DLP-501
28	Diagnose Spare DIUs (DIU 32 and 33) Specifying GROWTH	INST	—
29	Recent Change and Verify DIF-E1 Submember Equipage From GROW to SGRO:		
	A. DIU 32 (Spare Low) (SME Name=DIUSPQA Index Number=175)	TELCO	DLP-501
	B. DIU 33 (Spare High) (SME Name=DIUSPQB Index Number=176)	TELCO	DLP-501
30	Diagnose Spare DIUs (DIU 32 and 33)	INST	—
	NOTE: Both IPUBs must be powered.		
31	Diagnose DIF-E1 Controllers 0 and 1, Specifying Phases 22 and PSW, and GROWTH	INST	—
32	Recent Change and Verify DIF-E1 Submember Equipage From UNEQ to GROW (Initially Supplied DIUs)	TELCO	DLP-501
33	Diagnose Each Initially Supplied DIU Specifying Appropriate Phases and GROWTH:		
	A. Specify Phases 1 Through 4 for MF or DTMF DIU (NTR on Phases 3 and 4)	INST	—
	B. Specify Phases 1 Through 3 for All Other DIUs	INST	—
34	Recent Change and Verify DIF-E1 Submember Equipage From GROW to SGRO (Initially Supplied DIUs)	TELCO	DLP-501
	(Continued on Page 4)		

35	Diagnose Each Initially Supplied DIU Specifying Appropriate Phases and GROWTH:		
	A. Specify Phases 1 Through 4 for MF or DTMF DIU	INST	—
	B. Specify Phases 1 Through 3 for All Other DIUs	INST	—
36	Diagnose DIF-E1 Controllers 0 and 1, Specifying Phases 1 Through 22, PSW, and GROWTH	INST	—
37	Enter Message To Apply Port Pest to Each TSI Port Connecting to Initially Supplied DIUs (**INH:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
38	Remove TSI Looping Terminators and DIU Output Loop Cables and Connect Signal Cables to DIUs and TSI Ports	INST	—
39	Recent Change and Verify TSI Submember Equipage From UNEQ to GROW:		
	1. TSI Port, Connecting to Initially Supplied DIU, Recorded in Item 3.1	TELCO	DLP-501
	2. Repeat Item 39.1 for Each TSI Port Recorded in Item 3.1	TELCO	—
40	Recent Change and Verify TSI Submember Equipage From GROW to SGRO:		
	1. TSI Port, Connecting to Initially Supplied DIU, Recorded in Item 3.1	TELCO	DLP-501
	2. Repeat Item 40.1 for Each TSI Port Recorded in Item 3.1	TELCO	—
41	Diagnose and Restore Connecting TSI Frame(s) Controllers 0 and 1 Specifying Appropriate Phase and GROWTH	TELCO	DLP-522
42	Diagnose DIF-E1 Controllers 0 and 1, Specifying Phases 1 Through 22, PSW, and GROWTH	INST	—
43	Diagnose DIF-E1 Controllers 0 and 1, Specifying Appropriate Phases, MEMOPT 0, and GROWTH:		
	A. Specify Phases 24 Through 30 If Growth DIF-E1 Is for Voice Capability Only	INST	—
	B. Specify Phases 24 Through 29 If Growth DIF-E1 is for MF, 4-State, or DTMF Capability	INST	—
44	At Bus Interface Units 0 and 1 and at Controller 0, Rotate **OFF** Switch to Normal Position and Controller 1 **OFF** Switch to **ROS**	INST	—
45	Recent Change and Verify DIF-E1 Member Equipage From SGRO to OPER	TELCO	DLP-500
	(Continued on Page 5)		

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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
46 Enter Message To Restore and Initialize Controller 0 to Simplex Operation (RST:DIF a,CONTR 0!) CATP and Restore COMPLETE Required: INST Clear Equipment Troubles	TELCO/INST	—
47 Enter Message To Run Peripheral Unit Status Audit (AUD:PUSTAT!); Wait for Message Complete (MSG COMPL)	TELCO	—
48 Restore and Initialize DIF-E1 Controller 1 Using **CONT1** Power Switch	INST	—
49 Recent Change and Verify DIF-E1 Submember Equipage From SGRO to OPER:		
A. DIU 32 (Spare Low) (SME Name=DIUSPQA Index Number=175)	TELCO	DLP-501
B. DIU 33 (Spare High) (SME Name=DIUSPQB Index Number=176)	TELCO	DLP-501
50 Restore Spare DIUs:		
A. Enter Message To Restore DIU 32 (RST:DIF a,DIU 32!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
B. Enter Message To Restore DIU 33 (RST:DIF a,DIU 33!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
51 For Each DIU With Trunks Connected or Transmission Equipment Ready for Test, Perform the Following:		
1. Recent Change and Verify Submember Equipage From SGRO to OPER:		
1. TSI Port Associated With DIU	TELCO	DLP-501
2. Associated DIU	TELCO	DLP-501
NOTE: An indicated service degrading condition will occur after **AUD:PUSTAT** message is entered.		
2. Enter Message To Run Peripheral Unit Status Audit (AUD:PUSTAT!); Wait for Message Complete (MSG COMPL)	TELCO	—
3. Enter Message To Restore DIU (RST:DIF a,DIU b!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
4. Enter Message To Allow Growth Associated TSI Port (ALW:TSI a,SPC b,PORT c!)	TELCO	—
5. Repeat From Item 51.1 for Additional TSI-DIU Interfaces	TELCO/INST	—
52 If MF or DTMF DIUs Being Grown, Continue; Otherwise, End of Procedure	TELCO/INST	—

		DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
53		Verify Assignment of Growth MF or DTMF DIU Service Circuits and Test:		
		1. Check Growth DIU Receiver Service Circuits; Look for Traffic Numbers Associated With Growth DIU (OP:TRKSTAT,CIN a SVC b;SUM:NUM 16,STAT CAD.DSA! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits)	TELCO/INST	DLP-614
		2. Set Trunk Status for 16 Receivers in Newly Grown DIU to Maint Lockout State (SET:TRKSTAT MTC.LKO,CIN a SVC b;SUM:NUM 16! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits)	TELCO/INST	—
		3. Verify That Transmitter Is Active for Testing Receivers	TELCO/INST	DLP-617
		4. Enter Message To Idle a Tone Detector for Testing Receivers (SCHED:TRKTEST,OPR:TIMEON 0000,TIMEOFF 0001!)	TELCO	—
		NOTE: A tone detector must be idle active before receiver testing can be performed.		
		5. Test Growth DIU Receiver Service Circuits (TEST:TRK,CIN a SVC b;SVC:TSG,STAT MTC.LKO,PALL! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits)	TELCO/INST	DLP-615
		6. Check Growth DIU Transmitter Service Circuits; Look for Traffic Numbers Associated With Growth DIU (OP:TRKSTAT,CIN a SVC b;SUM:NUM 16,STAT CAD.DSA! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO/INST	DLP-614
		7. Set Trunk Status for 16 Transmitters in Newly Grown DIU to Maint Lockout State (SET:TRKSTAT MTC.LKO,CIN a SVC b;SUM:NUM 16! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO/INST	—
		8. Verify That Receiver Is Active for Testing Transmitters	TELCO/INST	DLP-617
		9. Test Growth DIU Transmitter Service Circuits (TEST:TRK,CIN a SVC b;SVC:TSG,STAT MTC.LKO,PALL! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO/INST	DLP-615
54		Bring Newly Grown MF or DTMF DIU Service Circuits to Active State:		
		1. For Receivers, Input SET:TRKSTAT ACT,CIN a SVC b;SUM:NUM 16! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits	TELCO/INST	—
		2. For Transmitters, Input SET:TRKSTAT ACT,CIN a SVC b;SUM:NUM 16! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits	TELCO/INST	—

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
55	If DIU 18, 9, or 26 Was Grown, Repeat From Item 53 for Each DIU Equipped	TELCO/INST	—

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
1	Assure That the Following Prerequisites Have Been Met: • Verify That Digital Interface (DIF) Considered for Degrowth Contains only Message Trunk Assignments • All DIUs and Associated TSI Ports and ESUs Have Been Degrown From Degrowth DIF per NTP-026	TELCO	—
2	Degrow Spare DIUs (DIU 32 and 33) as Follows:		
	1. Recent Change Submember Equipage From OPER to SGRO Using RC Form 701 (Degrow) (Degrowth DIU 32)	TELCO	DLP-527
	2. Recent Change Submember Equipage From SGRO to GROW Using RC Form 701 (Degrow) (Degrowth DIU 32)	TELCO	DLP-527
	3. Recent Change Submember Equipage From GROW to UNEQ Using RC Form 701 (Degrow) (Degrowth DIU 32)	TELCO	DLP-527
	4. Repeat Item 2 for DIU 33	TELCO	—
3	Recent Change and Verify Member Equipage of Degrowth DIF From OPER to SGRO (Degrow) Using RC Form 701	TELCO	DLP-526
4	Run Peripheral Unit Status Audit (**AUD:PUSTAT!**)	TELCO	—
5	Recent Change and Verify Member Equipage of Degrowth DIF From SGRO to GROW (Degrow) Using RC Form 701	TELCO	DLP-526
6	Remove Power From Degrowth DIF Controllers, IPUBS and Spare DIUs Using Power Switches	TELCO	—
	NOTE: Do not remove +140V and +24V power from degrowth DIF at the power distribution frame at this time.		
7	Remove Degrowth DIF From Peripheral Unit Bus Using Selected Option A or B in TOP 234-153-045; Then Continue This Procedure at Item 8 Upon Completion:		
	A. When Degrowth Frame Is Last Frame on PUB Branch	TELCO/INST	—
	B. When Degrowth Frame Is Between Two Operational Frames on PUB Branch	TELCO/INST	—
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DEGROW DIGITAL INTERFACE (DIF) FRAME — SUPPORT TO INSTALLER (INST)

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
8	Recent Change and Verify Member Equipage of Degrowth DIF From GROW to UNEQ (Degrow) Using RC Form 701	TELCO	DLP-526
	CAUTION: Assure that clock cables are removed per Installation Handbook Section 208 to prevent possible service interruption.		
9	Remove Clock Cables Between Degrowth DIF and Associated EST/TSI	INST	—
10	Install Looping Devices for Transmission Facilities at DSX, LT-1, or Repeater Bays	INST	—
11	Remove Transmission Cables Between Degrowth DIF Frame and Toll Terminal Frame(s)	INST	—
12	Remove Alarm Cables in Degrowth DIF; If DIF Is in Middle of Lineup, Place New Cable Between Remaining Frames to Bridge Open	INST	—
13	Remove Private Signal Leads (MSD, PP, MSN)	INST	—
14	Remove +140V and +24V Power From Degrowth DIF at Power Distribution Frame	INST	—
15	Remove Degrowth DIF Common Circuits (Telephone Jacks, TTY Jacks, Appliance Outlets)	INST	—
16	Remove Degrown DIF Frame From Lineup	INST	—

DEGROW DIGITAL INTERFACE (DIF) FRAME — SUPPORT TO INSTALLER (INST)

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Assure That Associated DIF, DT and/or VIF Have Been Degrown; Degrowth of DIF, DT and/or VIF Are Contained in NTP-030, NTP-028, and/or NTP-029, Respectively	TELCO	—
2	Degrow Submember Equipage of Degrowth EST, (Spare ESU 14) to UNEQ Using RC Form 701:		
	1. Recent Change and Verify Submember Equipage of ESU 14 From OPER to SGRO (Degrow) Using RC Form 701	TELCO	DLP-527
	2. Recent Change and Verify Submember Equipage of ESU 14 From SGRO to GROW (Degrow) Using RC Form 701	TELCO	DLP-527
	3. Recent Change and Verify Submember Equipage of ESU 14 From GROW to UNEQ (Degrow) Using RC Form 701	TELCO	DLP-527
3	Recent Change and Verify Member Equipage of Degrowth EST From OPER to SGRO (Degrow) Using RC Form 701	TELCO	DLP-526
4	Run Peripheral Unit Status Audit (AUD:PUSTAT!)	TELCO	—
5	Recent Change and Verify Member Equipage of Degrowth EST From SGRO to GROW (Degrow) Using RC Form 701	TELCO	DLP-526
6	Remove Power From Degrowth EST Controllers, IPUBS and Spare ESU (ESU 14) Using Power Switches	TELCO	—
	NOTE: Do not remove +140V and +24V power from degrowth EST at the power distribution frame at this time.		
7	Remove Degrowth EST From Peripheral Unit Bus Using Selected Option A or B in TOP 234-153-045; Then Continue This Procedure at Item 8 Upon Completion:		
	A. When Degrowth Frame Is Last Frame on PUB Branch	TELCO/INST	—
	B. When Degrowth Frame Is Between Two Operational Frames on PUB Branch	TELCO/INST	—
8	Recent Change and Verify Member Equipage of Degrowth EST From GROW to UNEQ (Degrow) Using RC Form 701	TELCO	DLP-526
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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
	CAUTION: *Assure that clock cables are removed per Installation Handbook Section 204 to prevent possible service interruption.*		
9	Remove Clock Cables Between Degrowth EST and Associated TSI	INST	—
10	Remove Alarm Cables in Degrowth EST; If EST Is in Middle of Lineup, Place New Cable Between Remaining Frames to Bridge Open	INST	—
11	Remove Private Signal Leads (MSD, PP, MSN)	INST	—
12	Remove +140V and +24V Power From Degrowth EST at Power Distribution Frame	INST	—
13	Remove Degrowth EST Common Circuits (Telephone Jacks, TTY Jacks, Appliance Outlets)	INST	—
14	Remove Degrown EST Frame From Lineup	INST	—

DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
		RESPONSIBILITY	
	WARNING: An antistatic wrist strap must be worn to prevent electrostatic discharge and possible damage to circuit packs while handling.		
	NOTES: 1. Assure that DCS 5X400-6 on J5X059B for WA wiring options to the growth DIF-E1 frame have been completed. 2. ODA associated with the retrofit must have updated the trunk translations to define the growth service circuit DIUs or PECC will have to be contacted through proper channels for overwrites to define the growth service circuit DIUs. 3. If 1, 9, 18, 26 DIUs are equipped and being converted, DIUs must be degrown to SGRO state. 4. If frame type is to be converted from MF to MF 4 State, DIU degrowth is NOT required. 5. A DIF-E1 can contain up to 4 MF DIUs or 4 DTMF DIUs (1, 18, 9, and 26) but not a combination of both. DIUs 1, 18, 9, and 26 should be grown in sequence. 6. If **SM9** or **SM10** DIU is being added, it may be added only to DIF-E1 with an MTHG of 4 or 5.		
1	If DIUs Must Be Degrown to SGRO State, Perform Items 2 Through 20; Otherwise, Go to Item 21 [NOTES 3 and 4 Above].	TELCO	–
2	Determine From Company Order the DIU Number To Be Degrown and Associated DIF, TSI, and ESU, if Required	TELCO	–
3	Obtain From Appropriate Administration Center the Base Trunk Assignment Number (TAN) Served by DIU To Be Degrown	TELCO	–
4	Verify TAN to DIU Assignment (**VER:TRKNAME,TAN** a**;DETL!**)	TELCO	DLP-564
5	Change Degrowth DIU Trunks to Circuit Administration Disabled (**CAD.DSA**) State and Verify	TELCO	DLP-565
	NOTE: All TANs assigned to the degrowth DIU must be in **CAD.DSA** state in output message of Item 5 before continuing with this procedure.		
6	If RMS-D2 Is Associated With Degrowth DIU, Perform Items 7 and 8; Otherwise, Go to Item 9	TELCO	–
7	Request TOC To Set All Resources to Out-of-Service	TELCO	–
8	Request Appropriate Administration Center To Update DS-1 Interface to Reflect Changed DIU	TELCO	–

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CONVERT DIU AND DIF-E1 DOMESTIC FRAME IF REQUIRED			**PAGE 1 of 7**	**032**

DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
9	If Service Circuit Trunks Are Associated With Degrowth DIU, Request Appropriate Administration Center to Delete Service Circuit Trunks Served by DIU To Be Degrown Using RC Form 202	TELCO	—
10	Request Appropriate Administration Center To Determine If Any TANTOTANs and/or Nailup Connections Are Assigned to SPC in Associated TSI	TELCO	—
11	If TANTOTANs Are Assigned, Obtain CIN Assignments of TANTOTANs on SPC To Be Degrown for Later Use	TELCO	—
12	If Nailup Connections Are Assigned, Obtain TAN Assignments of Nailup Connections on SPC To Be Degrown for Later Use	TELCO	—
13	If TANTOTANs Are Assigned to SPC Being Degrown (Item 10), Using CIN Assignments Obtained in Item 8, Take Down Each TANTOTAN (**ORD:TANTOTAN;RLS,CIN a:CIN b!**)	TELCO	DLP-619
14	If Nailup Connections Are Assigned to SPC Being Degrown (Item 10), Request Appropriate Administration Center To Delete Each Nailup Connection on List Obtained in Item 12 Using Recent Change Form 206	TELCO	—
15	Verify That Spare DIU in Degrowth DIF Is Available (**OP:OOSUNITS:DIF!**)	TELCO	DLP-566
16	Remove Degrowth DIU From Service (**RMV:DIF a,DIU b!**)	TELCO	DLP-567
	CAUTION: Assure that power is on at degrowth DIU before proceeding. Power must remain on until the DIU and TSI port are degrown to SGRO and the TSI port is pested.		
17	Recent Change Submember Equipage From OPER to SGRO Using RC Form 701 (Degrow) [Degrowth DIU]	TELCO	DLP-527
18	Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT!**); Wait for Message Complete (**MSG COMPL**)	TELCO	—
19	Diagnose Degrowth DIU (**DGN:DIF a,DIU b!**)	TELCO	—
20	At 1B Procesor MCC Terminal, On 108 Page, Enter **857** and Assure That No DIU Is Listed for Degrowth Associated Half of DIF (0-15 or 16-31)	TELCO	—
21	If EST Exists Between Degrowth DIU and Associated TSI Port and EST Is Equipped With Operational ESU That Is Associated With Degrowth DIU/TSI Port, Perform the Following:		
	1. Remove Associated ESU From Service (**RMV:EST a,ESU b!**)	TELCO	DLP-569

	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
21 (Contd)	2. Recent Change Submember Equipage From OPER to SGRO Using RC Form 701 (Degrow) [ESU Associated With Degrowth DIU]	TELCO	DLP-527
	3. Diagnose Degrowth Associated ESU (**DGN:EST a,ESU b!**)	TELCO	—
	4. At 1B Processor MCC Terminal, On 108 Page, Enter **859** and Assure That No ESU Is Listed for Degrowth Associated EST	TELCO	—
22	Recent Change Submember Equipage From OPER to SGRO Using RC Form 701 (Degrow) [TSI Port Associated With Degrowth DIU]	TELCO	DLP-527
23	Enter Message To Apply TSI Port Pest Control to Degrowth Associated TSI Port (**INH:TSI a,SPC b,PORT c!**)	TELCO	—
	NOTE: This is a safe point to temporarily stop this procedure.		
24	Determine From Company Order if DIF-E1 Domestic Frame Is To Be Converted to MF, DTMF, or 4 State	TELCO	—
25	If Frame Is Not To Be Converted, Go to Item 40	TELCO	—
26	Diagnose DIF-E1 Controllers 0 and 1 Using Restore Message (**RST:DIF a,CONTR b!**)	TELCO	DLP-521
27	Assure Availability of Equipment Required To Convert DIF-E1	TELCO	DLP-606
28	Enter **RMV:DIF a,CONTR 0!** To Remove DIF-E1 Controller 0 From Service	TELCO	—
29	At DIF-E1 Using **CONTR0** Power Switch, Rotate **OFF** Switch to **ROS**; After Observing **ACK** Response, Power Down Controller 0	TELCO	—
30	Replace DIF-E1 Controller 0 Circuit Packs With New Circuit Packs To Convert Controller 0	TELCO	DLP-607
31	Perform Functional Word Change of DIF-E1 Controller 0 Firmware Version Data (MP and SP)	TELCO	DLP-604
32	Perform Functional Word Change of DIF-E1 MTHG Value	TELCO	DLP-605
33	Restore Power to DIF-E1 Controller 0 Using **CONTR0** Power Switch and Rotate **OFF** Switch to Normal Position	TELCO	DLP-507
	NOTE: A diagnostic of controller 0 should occur with ATP results. Controller 0 should be left out of service due to input message of Item 28.		
	(Continued on Page 4)		

DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
34	Configure DIF-E1 Controller 0 as the Active Controller:		
	NOTE: Items 34.1 through 34.4 must not be performed on the hour or half hour.		
	1. Enter **OP:MACLI,CLASS MTCE!** and Ensure MACLI Is Clear (NONE). Do Not Continue Until MACLI Is Clear	TELCO	—
	2. Enter **SW:DIF a!**	TELCO	—
	3. Verify That Controller 0 Is Active Using Dump Message (**DUMP:DIF a,CREG!**)	TELCO	DLP-613
	4. At 1B Processor MCC Terminal, On 108 Page, Enter **857** and Assure That Controller 1 for Degrowth Associated DIF Is Listed	TELCO	—
35	Remove Power From Controller 1 of DIF-E1 Being Converted Using **CONTR1** Power Switch; Rotate **OFF** Switch to **ROS**; After Observing **ACK** Response, Power Down Controller 1	TELCO	—
36	Replace DIF-E1 Controller 1 Circuit Packs With New Circuit Packs To Convert Controller 1	TELCO	DLP-608
37	Perform Functional Word Change of DIF-E1 Controller 1 Firmware Version Data (MP and SP)	TELCO	DLP-609
38	Verify DIF Type Table	TELCO	DLP-616
39	Restore Power to DIF-E1 Controller 1 Using **CONTR1** Power Switch and Rotate **OFF** Switch to Normal Position (Restore Complete Required)	TELCO	DLP-507
40	If DIU Was Degrown in This Procedure, Continue; Otherwise, End of Procedure	TELCO	—
41	Determine Frame Location of DIU Equipment To Be Grown and Select Circuit Packs	TELCO	DLP-540
42	Determine Functional Assignment for Digroup(s) in DIU Being Grown	TELCO	DLP-637
43	Obtain Printout of Current Entry Data for DIU Being Converted and Save for Later Use (**VER:UTYPE:DIF a,SME b!**)	TELCO	DLP-641
44	Using Printout (Item 43), Determine if THW and THW5 Are Set Properly. If THW and THW5 Are Not Set Properly, Record Correct Value for Later Use	TELCO	DLP-642
45	Using RC Form 702, Recent Change Digroup(s) to Appropriate Functional Assignment for DIU Being Grown	TELCO	DLP-646
46	If **SM9** Circuit Pack or **SM10** Circuit Pack Is Being Added in DIU Being Converted, Verify Circuit Pack in Associated Spare DIU 32 or 33 Is Equal to or Greater Than DIU Being Converted	TELCO	—

47	If DIU 32 or 33 (Spare DIU) Is To Be Changed:		
	1. Diagnose Spare DIU (DGN:DIF a,DIU b!); ATP Required	TELCO	—
	2. Remove Power From Spare DIU Using Unit Power Switch	TELCO	—
	3. Replace Spare DIU Circuit Packs With Required Circuit Packs	TELCO	—
	4. Perform Functional Word Change of Spare DIU Type Hardware	TELCO	DLP-618
	5. Restore Power to Spare DIU Using Unit Power Switch	TELCO	—
	6. Restore Spare DIU to Service (RST:DIF a,DIU b!); ATP Required	TELCO	—
48	Remove Power to Growth DIU Using Unit Power Switch	TELCO	—
49	If Facility Alarm Occurs, Reset Alarm	TELCO	—
50	Install Growth DIU Circuit Packs and Power Converters; Place Power Converter Switches to ON	TELCO	DLP-541
51	Apply Power to Growth DIU Using Unit Power Switch	TELCO	—
52	Diagnose Growth DIU; ATP Required (DGN:DIF a,DIU b:GROWTH!)	TELCO	DLP-502
53	Recent Change and Verify Submember Equipage SGRO to OPER (TSI Port Associated With Added DIU)	TELCO	DLP-501
54	If ESU Is Associated With Added DIU, Recent Change and Verify ESU Submember Equipage SGRO to OPER	TELCO	DLP-501
55	Recent Change and Verify Submember Equipage SGRO to OPER (Connecting DIU)	TELCO	DLP-501
	Note: An indicated service-degrading condition will occur after AUD:PUSTAT message is entered.		
56	Enter Message To Run Peripheral Unit Status Audit (AUD:PUSTAT!); Wait for Message Complete (MSG COMPL)	TELCO	—
57	If ESU Is Associated With Added DIU, Restore ESU (RST:EST a,ESU b!)	TELCO	DLP-542
58	Restore Growth Associated DIU (RST:DIF a,DIU b!)	TELCO	DLP-512
59	Enter Message To Allow Growth Associated TSI Port (ALW:TSI a,SPC b,PORT c!)	TELCO	—
	(Continued on Page 6)		

	DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
60	If RMS-D2 Is Associated With Changed DIU, Perform Items 61 and 62; Otherwise, Go to Item 63	TELCO	—
61	Request TOC To Do Complete Download From CMS	TELCO	—
62	Request TOC To Activate DS-1 Interface	TELCO	—
63	If TANTOTANs Were Released in Item 12, Connect Each TANTOTAN (ORD:TANTOTAN;CONN,CIN a:CIN b!)	TELCO	DLP-619
64	If Nailup Connections Were Deleted in Item 13, Request Appropriate Administration Center To Connect Each Nailup Using RC Form 205	TELCO	—
65	If MF or DTMF DIU Being Grown, Continue; Otherwise, End of Procedure	TELCO	—
66	If Any Service Circuit Trunks Are Required, Request Appropriate Administration Center To Add Trunks Using RC Form 200	TELCO	—
67	Verify Assignment of Growth MF or DTMF DIU Service Circuits and Test:		
	1. Check Growth DIU Receiver Service Circuits, Look for Traffic Numbers Associated With Growth DIU (OP:TRKSTAT,CIN a SVC b;SUM:NUM 16,STAT CAD.DSA! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits)	TELCO	DLP-614
	2. Set Trunk Status for 16 Receivers in Newly Grown DIU to Maint Lockout State (SET:TRKSTAT MTC.LKO,CIN a SVC b;SUM:NUM 16! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits)	TELCO	—
	3. Verify That Transmitter Is Active for Testing Receivers	TELCO	DLP-617
	4. Enter Message To Idle a Tone Detector for Testing Receivers (SCHED:TRKTEST,OPR:TIMEON 0000,TIMEOFF 0001!)	TELCO	—
	Note: A tone detector must be idle active before receiver testing can be performed.		
	5. Test Growth DIU Receiver Service Circuits (TEST:TRK,CIN a SVC b;SVC:TSG,STAT MTC.LKO,PALL! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits)	TELCO	DLP-615
	6. Check Growth DIU Transmitter Service Circuits, Look for Traffic Numbers Associated With Growth DIU (OP:TRKSTAT,CIN a SVC b;SUM:NUM 16,STAT CAD.DSA! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO	DLP-614
	(Continued on Page 7)		

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DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS, GO TO	
67 (Contd)	7. Set Trunk Status for 16 Transmitters in Newly Grown DIU to Maint Lockout State (SET:TRKSTAT MTC.LKO,CIN a SVC b;SUM:NUM 16! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO	—
	8. Verify That Receiver Is Active for Testing Transmitters	TELCO	DLP-617
	9. Test Growth DIU Transmitter Service Circuits (TEST:TRK,CIN a SVC b;SVC:TSG,STAT MTC.LKO,PALL!) b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO	DLP-615
68	Bring Newly Grown MF or DTMF DIU Service Circuits to Active State:		
	1. For Receivers, Input SET:TRKSTAT ACT,CIN a SVC b;SUM:NUM 16! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits	TELCO	—
	2. For Transmitters, Input SET:TRKSTAT ACT,CIN a SVC b;SUM:NUM 16! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits	TELCO	—

	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
	NOTES: 1. In the following procedure, DIF refers to either DIF-E1 Domestic or DIF unless DIF-E1 specified. 2. A DIF-E1 can contain up to 4 MF DIUs or 4 DTMF DIUs (1, 18, 9, and 26), but not a combination of both. DIUs 1, 18, 9, and 26 should be grown in sequence. 3. **SM10** DIU can only be grown in 4E14 or later generic office. 4. If **SM9** or **SM10** DIU is being added, it may be added only to DIF-E1 with an MTHG of 4 or 5. 5. A DIF (J68960A) can only contain voice DIUs. 6. All operational DIUs must be in-service.		
1	Determine DIF Member Number and DIU To Be Added	TELCO/INST	—
2	Determine Frame Locations for DIU To Be Added and Select Circuit Packs	INST	—
3	Verify DIF and EST (if Applicable) Unit Type (UT) Translator and Compare Translations Data Against Wiring Records:		
	1. Verify DIF UT Data Associated With Growth DIU (**VER:UTYPE:DIF** a!)	TELCO/INST	DLP-610
	2. If ESU Is Associated With Growth DIU, Verify ESU to Growth DIU Assignment and ESU Equipage Status in EST UT Translator (**VER:UTYPE:EST** a!) Strap Through EST	TELCO/INST	DLP-546
	3. Compare Translations Data Against Wiring Records	INST	—
4	Verify DIF Type Table	TELCO/INST	DLP-616
5	If LIST 14 (**SM9** Pack) or LIST 15 (**SM10** Pack) DIU Being Added, Verify That DIUs 32 and 33 Are Equal to or Greater Than LIST Number of Associated Growth Unit	INST	—
6	Verify Time Slot Interchange (TSI) UT Translator and Compare Translations Data Against Wiring Records:		
	1. Determine Which TSI Member Number Has Port Connecting to Growth DIU	TELCO	—
	2. Verify TSI Port to DIU Assignment and TSI-SPC Port Equipage Data of TSI UT Translator (**VER:UTYPE:TSI** a!)	TELCO/INST	DLP-548
	3. Compare Translations Data Against Wiring Records	INST	—
	(Continued on Page 2)		

ADD DIGITAL INTERFACE UNIT (DIU) TO OPERATIONAL DIGITAL INTERFACE (DIF-E1) DOMESTIC OR DIF (J68960A) — SUPPORT TO INSTALLER (INST)

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
7	Diagnose DIF Controllers 0 and 1 Using Restore Message (RST:DIF a,CONTR b!)	TELCO	DLP-521
8	If DIU 32 or 33 (Spare DIU) Is To Be Changed:		
	1. Diagnose Spare DIU (DGN:DIF a,DIU b!); ATP Required	TELCO	—
	2. Remove Power From Spare DIU Using Unit Power Switch	TELCO	—
	3. Replace Spare DIU Circuit Packs With Required Circuit Packs	INST	—
	4. Perform Functional Word Change of Spare DIU Type	TELCO	DLP-618
	5. Restore Power to Spare DIU Using Unit Power Switch	TELCO/INST	—
	6. Restore Spare DIU to Service (RST:DIF a,DIU b!); ATP Required	TELCO/INST	—
9	Assure That Power to Growth DIU Is Off Using Unit Power Switch	INST	—
10	Install Growth DIU Circuit Packs and Power Converters and Verify Fuses	INST	—
11	Verify That Input/Output Looping Devices Are in Place for Growth DIU Output (T, R) and at DSX1 or Directly Connecting LT1 Bays	INST	—
12	Recent Change and Verify Submember Equipage From UNEQ to GROW (Growth DIU)	TELCO	DLP-501
13	Apply Power to Growth DIU Using Unit Power Switch	TELCO/INST	—
14	Diagnose Growth DIU, Specifying Growth and Appropriate Phases (CATP Expected); INST Clear Equipment Troubles:		
	A. Specify Phases 1 Through 4 for MF or DTMF DIU (NTR on Phases 3 and 4)	TELCO/INST	DLP-611
	B. Specify Phases 1 Through 3 All Other DIUs	TELCO	DLP-611
15	Recent Change and Verify Submember Equipage From GROW to SGRO (Growth DIU)	TELCO	DLP-501
16	Diagnose Growth DIU, Specifying Growth and Appropriate Phases (ATP Required); INST Clear Equipment Troubles:		
	A. Specify Phases 1 Through 4 for MF or DTMF DIU	TELCO/INST	DLP-612
	B. Specify Phases 1 Through 3 for All Other DIUs	TELCO/INST	DLP-612
	NOTE: Items 17 through 23 must be performed without interruption		
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		DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
17	Enter Messages To Apply Pests on TSI Port Connecting to Growth DIU, Growth DIF, and if Associated, EST:			
	1. INH:TSI a,SPC b,PORT c!	TELCO	—	
	2. INH:DIF a,APUF!	TELCO	—	
	3. INH:DIF a,APUT!	TELCO	—	
	4. If EST Associated: INH:EST a,APUF!	TELCO	—	
	5. If EST Associated: INH:EST a,APUT!	TELCO	—	
18	Connect TSI Port Cables:			
	A. If No EST Exists Between Growth DIU and Associated TSI, Remove TSI Looping Terminators and DIU Output Loop Cables; Connect Signal Cables at Growth DIU and TSI Port	INST	—	
	NOTE: If an EST exists between growth DIF-E1 and associated TSI, ESU must be in strap through condition and marked unequipped in translations.			
	B. If EST Exists Between Growth DIF-E1 and Associated TSI, Remove Looping Terminators at TSI Port and Associated DIU; Connect Signal Cables at **FB619** Strap Pack of ESU at DIU and at TSI Ports	INST	—	
19	Recent Change and Verify Submember Equipage UNEQ to GROW (TSI Port Connecting to Growth DIU)	TELCO	DLP-501	
20	Recent Change and Verify Submember Equipage GROW to SGRO (TSI Port Connecting to Growth DIU)	TELCO	DLP-501	
21	Diagnose and Restore Connecting TSI Controllers 0 and 1 (Specifying Appropriate Phase and Growth)	TELCO/INST	DLP-522	
22	Enter Message To Diagnose Growth DIU (**DGN:DIF** a,**DIU** b:**GROWTH!**) ATP Required; INST Clear Equipment Troubles	TELCO/INST	DLP-520	
23	Enter Messages To Allow Pests on Growth DIF and If Associated, EST:			
	1. ALW:DIF a,APUF!	TELCO	—	
	2. ALW:DIF a,APUT!	TELCO	—	
	(Continued on Page 4)			

ADD DIGITAL INTERFACE UNIT (DIU) TO OPERATIONAL DIGITAL INTERFACE (DIF-E1) DOMESTIC OR DIF (J68960A) — SUPPORT TO INSTALLER (INST)

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DO THE ITEMS BELOW IN THE ORDER LISTED		FOR DETAILS, GO TO	
23 (Contd)	3. If EST Associated: **ALW:EST** a,**APUF**!	TELCO	—
	4. If EST Associated: **ALW:EST** a,**APUT**!	TELCO	—
24	Activate DIU Equipment:		
	A. For DIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface to TSI Via Equipped ESU, Complete DIU/ESU/TSI Interface Using NTP-011 (Echo Suppressor Unit Growth)	TELCO/INST	—
	B. For DIU With Trunks Connected or Transmission Equipment Ready for Test That Is To Interface Directly to TSI or Via Strap Through **FB619** Pack in EST (Unequipped ESU Position), Perform the Following:		
	1. Recent Change and Verify Submember Equipage From SGRO to OPER:		
	1. TSI Port Associated With DIU	TELCO	DLP-501
	2. Associated DIU	TELCO	DLP-501
	NOTE: An indicated service degrading condition will occur after **AUD:PUSTAT** message is entered.		
	2. Enter Message To Run Peripheral Unit Status Audit (**AUD:PUSTAT**!); Wait for Message Complete (**MSG COMPL**)	TELCO	—
	3. Enter Message To Restore DIU (**RST:DIF** a,**DIU** b!) ATP and Restore COMPLETE Required; INST Clear Equipment Troubles	TELCO/INST	DLP-512
	4. Enter Message To Allow Growth Associated TSI Port (**ALW:TSI** a,**SPC** b,**PORT** c!)	TELCO	—
25	If MF or DTMF DIU Being Grown, Continue; Otherwise, End of Procedure	TELCO/INST	—
26	Verify Assignment of Growth MF or DTMF DIU Service Circuits and Test:		
	1. Check Growth DIU Receiver Service Circuits, Look for Traffic Numbers Associated With Growth DIU (**OP:TRKSTAT,CIN** a **SVC** b;**SUM:NUM 16,STAT CAD.DSA**! b = ***MFR****** for MF Service Circuits or ***DMRV***** for DTMF Service Circuits)	TELCO	DLP-614
	2. Set Trunk Status for 16 Receivers in Newly Grown DIU to Maint Lockout State (**SET:TRKSTAT MTC.LKO,CIN** a **SVC** b;**SUM:NUM 16**! b = ***MFR****** for MF Service Circuits or ***DMRV***** for DTMF Service Circuits)	TELCO/INST	—
	(Continued on Page 5)		

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26 (Contd)	3. Verify That Transmitter Is Active for Testing Receivers	TELCO/INST	DLP-617
	4. Enter Message To Idle a Tone Detector for Testing Receivers (SCHED:TRKTEST,OPR:TIMEON 0000,TIMEOFF 0001!)	TELCO	—
	NOTE: A tone detector must be idle active before receiver testing can be performed.		
	5. Test Growth DIU Receiver Service Circuits (TEST:TRK,CIN a SVC b;SVC:TSG,STAT MTC.LKO,PALL! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits)	TELCO/INST	DLP-615
	6. Check Growth DIU Transmitter Service Circuits, Look for Traffic Numbers Associated With Growth DIU (OP:TRKSTAT,CIN a SVC b;SUM:NUM 16,STAT CAD.DSA! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO/INST	DLP-614
	7. Set Trunk Status for 16 Transmitters in Newly Grown DIU to Maint Lockout State (SET:TRKSTAT MTC.LKO,CIN a SVC b;SUM:NUM 16! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO/INST	—
	8. Verify That Receiver Is Active for Testing Transmitters	TELCO/INST	DLP-617
	9. Test Growth DIU Transmitter Service Circuits (TEST:TRK,CIN a SVC b;SVC:TSG,STAT MTC.LKO,PALL!) b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits)	TELCO/INST	DLP-615
27	Bring Newly Grown MF or DTMF DIU Service Circuits to Active State:		
	1. For Receivers, Input SET:TRKSTAT ACT,CIN a SVC b;SUM:NUM 16! b = *MFR**** for MF Service Circuits or *DMRV*** for DTMF Service Circuits	TELCO/INST	—
	2. For Transmitters, Input SET:TRKSTAT ACT,CIN a SVC b;SUM:NUM 16! b = *MFX**** for MF Service Circuits or *DMXM*** for DTMF Service Circuits	TELCO/INST	—

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		RESPONSIBILITY	
	Notes: 1. The terms first and second terminal units refer to primary (first) and backup (second) terminals of a domestic terminal unit pair. These terminals are also referred to as mates. 2. This procedure is to be used to remove the first TGR frame, it's mate and if an Enhanced Terminal, the associated Data Set frame.		
1	Verify Physical TGR Terminal Unit Equipment Supplied at Degrowth TGR Frame, the Mate Terminal TGR Frame, and Data Set Frame, as Required	TELCO/INST	—
2	Request TOC to Verify That All VFLs, Assigned to Degrowth First TGR Frame Terminal Units Are Deactivated and That Interoffice Signaling Links Are Out-of-Service	TELCO	—
3	Determine From Company Order, TGR Frame Number To Be Degrown and Associated SP and DIF, DT, or VIF Unit, if Required	TELCO/INST	—
4	Enter **INH:AUD:NUM 49!** To Inhibit Audit 49	TELCO	—
5	Enter **RMV:SIGLK ab!** (a = TGR Number, b = TER Number) To Remove Signaling Link for One Degrowth Terminal Unit in First TGR Frame	TELCO	—
6	Enter **OP:SLKSTAT;SLK ab!** (a = TGR Number, b = TER Number). Verify From Printout That SLK STAT Is OOS	TELCO	—
7	Enter **RMV:TGR a,TER b!** (a = TGR Number, b = TER Number) To Remove One Terminal Unit in First TGR Frame	TELCO	—
8	Perform Functional Word Change of Removed Terminal Unit for Loop Data for Self-Synchronization	TELCO	DLP-532
9	Disable Direct Signaling Traffic Configuration for Removed Terminal Unit	TELCO	DLP-620
10	Enter **RST:TGR a,TER b!** (a = TGR Number, b = TER Number) To Restore Removed Terminal Unit	TELCO	—
11	Enter **RST:SIGLK ab!** (a = TGR Number, b = TER Number) To Restore Signaling Link	TELCO	—
12	Repeat From Step 5 for Each Terminal Unit Supplied With First TGR Frame	TELCO	—
13	Enter **ALW:AUD:NUM 49!** To Allow Audit 49	TELCO	—
14	Enter **AUD:NUM 49!** To Run Audit 49; Wait for **AUD:NUM 49 COMPLETE O ERRORS DETECTED** Output Message	TELCO	—

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
15	Enter **AUD:PUSTAT!** To Run Peripheral Unit Status Audit	TELCO	—
16	Enter **OP:SLKSTAT;ALL!**. Verify From Printout That SLK STAT Is INS and VFL Is SELF LOOPED for Each Terminal Unit in First TGR Frame	TELCO	—
17	Enter **INH:AUD:NUM 49!** To Inhibit Audit 49	TELCO	—
18	Remove One Terminal Unit, Supplied With First TGR Frame, From Service (**RMV:TGR a,TER b!**)	TELCO	—
19	Repeat Item 18 for Each Terminal Unit Supplied With First TGR Frame	TELCO	—
20	Recent Change Submember Equipage From OPER to SGRO Using RC Form 701 (Degrow) (All Terminal Units Supplied With First TGR Frame)	TELCO	DLP-527
21	Recent Change and Verify First TGR Frame Member Equipage From OPER to SGRO Using RC Form 701 (Degrow)	TELCO	DLP-526
22	Enter **AUD:PUSTAT!** To Run Peripheral Unit Status Audit	TELCO	—
23	Recent Change Submember Equipage From SGRO to GROW Using RC Form 701 (Degrow) (All Terminal Units Supplied With First TGR Frame)	TELCO	DLP-527
24	Recent Change and Verify First TGR Frame Member Equipage From SGRO to GROW Using RC Form 701 (Degrow)	TELCO	DLP-526
25	Repeat Items 20 Through 25 for the Mate TGR Frame	TELCO	—
26	Enter **INH:AUDMSG:NUM 49!** To Inhibit Audit Messages	TELCO	—
27	Enter **ALW:AUD:NUM 49!** To Allow Audit 49	TELCO	—
28	Enter **AUD:NUM 49!** To Run Audit 49; Wait for **AUD:NUM 49 COMPLETE O ERRORS DETECTED** Output Message	TELCO/INST	—
29	Enter **ALW:AUDMSG:NUM 49!** To Allow Audit Messages	TELCO	—
30	Recent Change Submember Equipage From GROW to UNEQ Using RC Form 701 (Degrow) (All Terminal Units Supplied With Mate TGR Frame)	TELCO	DLP-527
31	Remove Power From Each Terminal Unit Supplied With Mate TGR Frame Using Unit Power Switch	TELCO	—
32	Recent Change Submember Equipage From GROW to UNEQ Using RC Form 701 (Degrow) (All Terminal Units Supplied With First TGR Frame)	TELCO	DLP-527
33	Remove Power From Each Terminal Unit Supplied With First TGR Frame Using Unit Power Switch	TELCO	—

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DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
34	Remove Power From First TGR Frame Controllers and IPUBs Using Power Switches	TELCO	—
35	Remove Power From Mate TGR Frame Controllers and IPUBs Using Power Switches	TELCO	—
36	Remove First Degrowth TGR Frame From Peripheral Unit Bus Using Selected Option A or B in TOP 234-153-045. Continue This Procedure at Item 37 Upon Completion:		
	A. When Degrowth Frame Is Last Frame on PUB Branch	TELCO/INST	—
	B. When Degrowth Frame Is Between Two Operational Frames on PUB Branch	TELCO/INST	—
37	Remove Mate Degrowth TGR Frame From Peripheral Unit Bus Using Selected Option A or B in TOP 234-153-045. Continue This Procedure at Item 38 Upon Completion:		
	A. When Degrowth Frame Is Last Frame on PUB Branch	TELCO/INST	—
	B. When Degrowth Frame Is Between Two Operational Frames on PUB Branch	TELCO/INST	—
38	Recent Change and Verify First TGR Frame Member Equipage From GROW to UNEQ Using RC Form 701 (Degrow)	TELCO	DLP-526
39	Recent Change and Verify Mate TGR Frame Member Equipage From GROW to UNEQ Using RC Form 701 (Degrow)	TELCO	DLP-526
40	If Degrowth TGR Circuits Connect to DIF or DT Via D4 Channel Bank: Remove Transmission Cables and Install Looping Devices for Transmission Facilities at DSX	INST	—
41	If Data Set Frame Is To Be Removed: Perform Functional Word Change To Degrow Data Set Frame Member Equipage From OPER (11) to UNEQ (00); Bits 23 and 22 in Word 0	TELCO	DLP-525
42	Remove Alarm Cables for Degrowth Frames; If Degrowth Frames Are in Middle of Lineup, Connect New Alarm Cable Between Remaining Frames to Bridge Open	INST	—
43	Remove Private Signal Leads (MSN, MSD, PP) From Degrowth TGR Frames	INST/TELCO	—
44	Remove +140V and +24V Power for Degrowth TGR Frames at Power Distribution Frame	INST	—
45	Remove Common Circuits (Telephone Jacks, TTY Jacks, AC Outlets) From Degrowth TGR Frames	INST	—
46	If Data Set Frame Is To Be Removed, Remove Cables and Common Circuits As Required	INST	—
47	Remove Degrowth TGR Frames From Lineup	INST	—
48	If Data Set Frame Is To Be Removed, Remove Data Set Frame From Lineup	INST	—

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	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Remove Associated Signal Link From Service	TELCO	DLP-622
2	At TTY, Enter **RMV:TGR** a,**TER** b! (a = Terminal Group, b = Terminal Number)	TELCO	—
	NOTE: Power switch associated with **TERMINAL 01** is associated with amplifier and pad unit 01.		
3	Determine Power Switch Associated With Amplifier and Pad Unit To Be Adjusted	TELCO	DLP-623
4	At Appropriate Power Switch, Rotate **ROS/OFF** Switch to **ROS** *Response:* **ACK** Lamp Flashes; Then **OS** and **OFF NORM** Lamps Light	TELCO	—
5	At Appropriate Power Switch, Depress **ROS/OFF** Switch *Response:* **PWR OFF** Lamp Lights	TELCO	—
6	Adjust Amplifier and Pads Using RMS-D2	TELCO	DLP-624
	NOTE: If **OS** lamp flashes off and on and remains lighted, diagnostic failed.		
7	At Power Switch, Rotate **ROS/OFF** Switch 1/4-Turn Counterclockwise to Normal Position *Response:* **OS** and **OFF NORM** Lamps Go Off	TELCO	—
8	At TTY, Enter **RST:TGR** a,**TER** b! (a = Terminal Group, b = Terminal Number)	TELCO	—
9	Enter **RST:SIGLK** a! (a = Signal Link Number Removed in Item 1)	TELCO	—
10	Inform STP Office That Signal Link Is Restored to Service	TELCO	—

		DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
			RESPONSIBILITY	
		NOTES: 1. The terms first and second terminal unit refer to primary (first) and backup (second) terminal of a domestic terminal unit pair, or primary (first) and secondary (second) terminal of an international terminal unit group. These terminal units are also referred to as mates. 2. Terminal units of a domestic pair or international group must not reside in the same terminal group (TGR) frame. 3. Only one terminal unit is to be changed at a time.		
1		Verify That 201D-L1 Data Set Is Available	TELCO	—
2		Determine Member Number of TGR Frame and Terminal Unit To Be Converted From Enhanced To Standard (2400 bps) Operation From Company Order	TELCO	—
3		At MTC Channel, Enter **OP:SLKSTAT;SLK** ab! (a = TGR Number, b = TER Number). Determine From Printout if **VFL** Is **SELF LOOPED** for Terminal Unit Being Converted	TELCO	DLP-625
4		If Terminal Unit Is NOT Self Looped, Perform Items 5 Through 18; Otherwise, Go to Item 19	TELCO	—
5		Coordinate With Far End of Terminal Unit (Item 2) Schedule for Turn-Down of VFL	TELCO	—
6		Request TOC To Verify That VFL Assigned To Terminal Unit Being Converted Is Deactivated and That Interoffice Signaling Link Is Out-Of-Service	TELCO	—
7		At MTC Channel, Enter **INH:AUD:NUM 49!** To Inhibit Audit 49	TELCO	—
8		Enter **RMV:SIGLK** ab! (a = TGR Number, b = TER Number) To Remove Signaling Link for Terminal Unit Being Converted	TELCO	—
9		Enter **OP:SLKSTAT;SLK** ab! (a = TGR Number, b = TER Number). Verify From Printout That **SLK STAT** Is **OOS**	TELCO	—
10		Enter **RMV:TGR a,TER** b! (a = TGR Number, b = TER Number) To Remove Terminal Unit Being Converted	TELCO	—
11		Perform Functional Word Change of Removed Terminal Unit for Loop Data for Self-Synchronization	TELCO	DLP-532
12		Disable Direct Signaling Traffic Configuration for Removed Terminal Unit	TELCO	DLP-620
13		Enter **RST:TGR a,TER** b! (a = TGR Number, b = TER Number) To Restore Removed Terminal Unit	TELCO	—

DO THE ITEMS BELOW IN THE ORDER LISTED	FOR DETAILS,	GO TO
14	Enter **RST:SIGLK** ab! (a = TGR Number, b = TER Number) To Restore Signaling Link	TELCO	—
15	Enter **ALW:AUD:NUM 49!** To Allow Audit 49	TELCO	—
16	Enter **AUD:NUM 49!** To Run Audit 49; Wait for **AUD:NUM 49 COMPLETE 0 ERRORS DETECTED** Output Message	TELCO	—
17	Enter **AUD:PUSTAT!** To Run Peripheral Unit Status Audit	TELCO	—
18	Enter **OP:SLKSTAT;SLK** ab! (a = TGR Number, b = TER Number). Verify From Printout That **SLK STAT** Is **INS** and **VFL** Is **SELF LOOPED** for Terminal Unit Being Converted	TELCO	—
	NOTE: If data is changed in Item 19, data must be changed to test state only		
19	Verify Unit Type Data for Terminal Unit Being Converted and Perform Functional Word Change(s), as Required (Record Order Number(s) for Later Use)	TELCO	DLP-626
20	Enter **RMV:TGR a,TER b!** (a = TGR Number, b = TER Number) To Remove Terminal Unit Being Converted	TELCO	—
21	Remove Power From Terminal Unit Being Converted Using Terminal Power Switch	TELCO	—
22	If **C-MT** Is Not Flashing in Data Set Alphanumeric Display on 2048A Data Set Associated With Terminal Unit Being Converted, Set Execution of CONTINUOUS MODEM TEST	TELCO	DLP-632
23	Disconnect Cables Between 2048A Data Set (Item 22) and Associated Terminal Modem Interface (TMI) Unit	TELCO	—
24	At Terminal Unit Being Converted, Replace TMI Unit With 201D-L1 Data Set	TELCO	DLP-633
25	Activate Recent Change(s) Performed in Item 19	TELCO	DLP-634
26	Restore Power To Terminal Unit Being Converted and Restore To Service; ATP Results Required	TELCO	DLP-593
27	Verify Associated Signaling Link Was Put in Service	TELCO	DLP-594
28	Leave Associated Signaling Link in Local Loop Mode Until Associated Network Services Complex Is Installed	TELCO	—
29	Repeat Items 1 Through 28 for Mate Terminal Unit	TELCO	—

	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
1	Determine DIF Frame Member Number That Is Changing DIF Firmware State	TELCO	—
2	Request Firmware Version Data (MP and SP) To Be Entered From Support Organization	TELCO	—
3	Diagnose DIF Controllers 0 and 1 Using Restore Message (**RST:DIF** a,**CONTR** b!)	TELCO	DLP-521
4	At 1B Processor MCC Terminal, On 108 Page, Enter 857 and Ensure CONTR 0 and CONTR 1 Are Not Listed for DIF Being Changed	TELCO	—
5	At MTCE Channel, Enter Message **RMV:DIF** a,**CONTR 0!** (a = DIF Member Number [Item 1]). Ensure **RMV:DIF** a **CONTR 0 COMPL** Message Is Received	TELCO	—
6	Perform Functional Word Change of DIF Controller 0 Firmware Version Data (MP and SP) Using Data Determined in Item 2	TELCO	DLP-604
	NOTE: Controller 0 will be left out of service after diagnostic is run due to earlier RMV message		
7	Diagnose DIF Controller 0; ATP Required (**DGN:DIF** a,**CONTR 0:PH (14,17)!**)	TELCO	DLP-635
8	Configure DIF Controller 0 as the Active Controller:		
	NOTE Items 8.1 through 8.4 must not be performed on the hour or half hour		
	1. Enter **OP:MACLI,CLASS MTCE!** and Ensure MACLI Is Clear (NONE). Do Not Continue Until MACLI Is Clear	TELCO	—
	2. Enter **SW:DIF** a! (a = DIF Member Number)	TELCO	—
	3. Verify That Controller 0 Is Active Using Dump Message (**DUMP:DIF** a,**CREG!**)	TELCO	DLP-613
	4. At 1B Processor MCC Terminal, On 108 Page, Enter 857 and Ensure CONTR 1 for DIF Is Listed	TELCO	—
9	Perform Functional Word Change of DIF Controller 1 Firmware Version Data (MP and SP) Using Data Determined in Item 2	TELCO	DLP-609
10	Restore DIF Controller 1 to Service (**RST:DIF** a,**CONTR 1!**)	TELCO	DLP-636

	DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO		
		RESPONSIBILITY	
	WARNING: 1. An antistatic wrist strap must be worn to prevent electrostatic discharge and possible damage to circuit packs while handling. 2. No other growth or maintenance activity is allowed during this procedure		
	NOTES: 1. Appropriate provisioning group or machine administration center will be notified during this procedure to delete trunks (if assigned) to digroup(s) being changed 2. Any digroup set to 6 or 7 cannot be changed using this procedure. An ODA update must be used to change these values 3. Appropriate Input/Output Manuals must be used if clarification of input message or output message is necessary 4. This procedure must be performed during light traffic periods 5. *4ESS™* Switch operation must be closely monitored while performing this procedure 6. Corrective action must be taken immediately on any activity that may cause any unit to go out of service (OOS) 7. Stability of office must be maintained throughout this procedure		
1	Determine From Company Order Frame, Unit, and Digroup Numbers Associated With Functional Assignments To Be Changed	TELCO	—
2	Determine New Functional Assignment for Each Digroup To Be Changed in One DIU	TELCO	DLP-637
3	Determine if Proper Circuit Pack (SM1B, SM9 or SM10) Is Equipped for Each Digroup To Be Changed in One DIU	TELCO	DLP-638
4	Determine if Proper Circuit Pack(s) (SM1B, SM9 or SM10) That Will Support New Functional Assignments Is Equipped in Spare DIU (DIU 32 for DIUs 0 Through 16 or DIU 33 for DIUs 17 Through 31) Associated With Digroup Being Changed	TELCO	DLP-638
5	If Proper Circuit Packs Are Not Installed (Items 3 and 4), Procedure Must Be Stopped. Use Appropriate Procedure in This Document To Convert DIU Containing Digroup(s) Being Changed and/or Associated Spare DIU	TELCO	—
6	Notify Next Higher Technical Support Group That Functional Assignment for DIU Digroup Change Is Going To Be Performed. Obtain Information for Items 7 and 8 From Next Higher Technical Support Group	TELCO	—
7	Ensure 1B Processor Routine Exerciser (REX) Successfully Diagnosed 1B Processor Equipment Within 24 Hours of Performing This Procedure	TELCO	—
8	Ensure *4ESS* Switch Is in Stable Condition	TELCO	DLP-639

DO THE ITEMS BELOW IN THE ORDER LISTED . . . . FOR DETAILS, GO TO			
9	At MTC Terminal, Enter Message **INH:MACLI,CLASS MTCE;REX!** To Inhibit REX	TELCO	—
10	Ensure 1B Processor and Peripheral Units Are Operating in Normal Duplex Mode	TELCO	DLP-640
11	Obtain Printout of Current Entry Data for DIU Containing Digroup(s) Being Changed and Save for Later Use (**VER:UTYPE:DIF a,SME b!**)	TELCO	DLP-641
12	Using Printout (Item 11), Determine if THW and THW5 Are Set Properly. If THW and THW5 Are Not Set Properly, Stop This Procedure and Perform NTP-032	TELCO	DLP-642
13	Determine if Trunks Are Assigned to Digroup(s) Being Changed. If Trunks Are Assigned, Record OTAN, CIN, and Decimal TSGN Fields for Later Use (**VER:TRKNAME,DIF a,DIU b,DG c;DETL!**)	TELCO	DLP-643
14	If Trunks Are Assigned (Item 13), Perform Items 15 Through 17; Otherwise, Go to Item 18	TELCO	—
15	Obtain Trunk Status for Each Digroup Being Changed and Save Printout for Later Use (**OP:TRKSTAT,OTAN a:NUM 24!**)	TELCO	DLP-644
16	Set Trunks to CAD.DSA State for Each Digroup Being Changed (**SET:TRKSTAT CAD.DSA,OTAN a:NUM 24!**)	TELCO	DLP-645
17	Request Appropriate Provisioning Group or Machine Administration Center To Delete Trunks Assigned to Digroup(s) Being Changed. Furnish Work Center With Data Recorded in Item 13	TELCO	—
18	Using RC Form 702, Recent Change Digroup(s) to New Functional Assignment for One DIU	TELCO	DLP-646
19	At MTC Terminal, Enter Message **AUD:PUSTAT!** To Audit Peripheral Hardware and Software Status; Ensure **AUD:PUSTAT DIF a MSG COMPL** Message Is Received	TELCO	—
20	Enter Message **OP:OOSUNIT:DIF!**; Ensure DIU Associated With Changed Digroup(s) Is Not Listed (DIU Is in Service)	TELCO	—
21	Request Appropriate Provisioning Group or Machine Administration Center To Assign Trunks Associated With Digroup(s) Being Changed	TELCO	—
22	Set Trunks (Item 15) Back to ACT State for Each Changed Digroup (**SET:TRKSTAT ACT,OTAN a:NUM b!**)	TELCO	DLP-647
23	At MTC Terminal, Enter Message **ALW:MACLI,CLASS MTCE!** To Allow REX	TELCO	—

SUMMARY
Call up recent change (RC) Form 700 on CRT. Using terminal,
fill in blanks on RC Form 700 to change submember equipage
to grow. Using the assigned order number, activate the
recent change; then verify current translations.

[1] See CAUTION 1. Enter
    OP:RCFORM 700!

CRT displays
RC Form 700

RC Form 700
filled in
and entered

AND

[2] Fill in blanks on
    RC Form 700 per
    TABLE A and enter
    message

TABLE B

RC ORNU b, SUCCESSFULLY TESTED

RC ORNU b, SUCCESSFULLY BUFFERED

RC:UTYPE;CHG;OPT(EQP,GROW),BUF: UTYN a,

ORNU b,

                         OLD NEW
MEMN c,   ME (d , d),
                         OLD NEW
SUBMEM ----,   SME (----, ----),

REMARKS----------------------------!

a = Unit type = VIF, DT, TGR, EST, or DIF
b = RC order number
c = Member number of growth frame
d = Entered member equipage

TABLE A

RC:UTYPE;CHG;OPT(EQP,GROW),TST: UTYN a,

ORNU b,

                         OLD NEW
MEMN c,   ME (d , d),
                         OLD NEW
SUBMEM ----,   SME (----, ----),

REMARKS----------------------------!

a = Unit type = DIF, DT, EST, TGR, or VIF
b = RC order number
c = Member number of growth frame
d = UNEQ, GROW or GROW, SGRO or SGRO, OPER

[3] Was recent change
SUCCESSFULLY TESTED
and **SUCCESSFULLY**
BUFFERED [TABLE B]

Yes

Page 2

No

[4] Analyze output
message for error;
repeat from Step 1
with corrected
input data

CAUTION 1
Calling up RC
form will cause
all CRT data to
be cleared

Revised

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RECENT CHANGE AND VERIFY MEMBER EQUIPAGE

[5] Enter
RCACT:ORNU a!
a = RC order
number

[6] Was recent
change **ACTIVATED**
[TABLE C]

Yes →

[8] Does output
message indicate all
input entries are
correct for this
recent change

Yes ──┤

No ↓

[7] Determine
cause for reject;
repeat from
Step 5 with
correct input
message

No ↓

[9] If input entries
are in error and
require correcting,
remove recent change
from system using RC
Form 701

[10] Repeat
from Step 1,
Page 1, using
corrected message
format

TABLE C
RC ORNU b ACTIVATED
RC:UTYPE;CHG;OPT(EQP,GROW),BUF: UTYN a,
ORNU b,
OLD NEW
MEMN c,   ME (d , d),
OLD NEW
SUBMEM ----,   SME (----, ----),
REMARKS----------------------------!
a = Unit type = VIF, DT, TGR, EST or DIF b = RC order number c = Member number of growth frame d = Entered member equipage

RECENT CHANGE AND VERIFY MEMBER EQUIPAGE

SUMMARY

Call up recent change (RC) Form 700 on CRT. Using TTY, fill
in blanks on RC Form 700 to change submember equipage.
Using the assigned order number, activate the recent
change; then verify current translations.

TABLE A

```
RC:UTYPE;CHG;OPT(EQP,GROW),TST:      UTYN a,

ORNU b,
                          OLD  NEW
MEMN c,          ME    (----, ----),
                          OLD  NEW
SUBMEM d,        SME ( e  ,  e  ),

REMARKS---------------------------!
```

a = Unit type = VIF, DT, TGR, EST, TSI, DIF,
              or SP

b = RC order number

c = Member number of growth associated frame

d = Submember name
    = VIUEQ(0 to 6) (for VIU 0-6)
    = DTUEQ(0 to 7) (for DTU 0-7)
    = TMGRP(0 to 15) (for TGR 0-15)
    = ESEQ(0 to 14) (for ESU 0-14)
    = T0PRTEQ(0 to 6) (for SPC 0,
      Ports 0-6)
    = T1PRTEQ(0 to 6) (for SPC 1,
      Ports 0-6)
    = SP2EQ1 (for DT Interface Unit 1)
    = DIUEQ(0 to 31) (for DIU 0-31)
    = DIUSPQA (for Spare DIU 32)
    = DIUSPQB (for Spare DIU 33)

e = UNEQ, GROW or
  = GROW, SGRO or
  = SGRO, OPER

[1] See CAUTION 2. Enter
    OP:RCFORM 700!

CRT displays
RC Form 700

RC Form 700
filled in
and entered

AND

Page 2

[2] Fill in blanks on
    RC Form 700 per
    TABLE A and enter
    message

*CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared*

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RECENT CHANGE AND VERIFY SUBMEMBER EQUIPAGE

[3] Was recent change **SUCCESSFULLY TESTED**, and **SUCCESSFULLY BUFFERED** [TABLE B] — Yes → Page 3

No ↓

[4] Analyze output message for error; repeat from Step 1, Page 1, with corrected input data

TABLE B
RC ORNU b SUCCESSFULLY TESTED
RC ORNU b SUCCESSFULLY BUFFERED
RC:UTYPE;CHG;OPT(EQP,GROW),BUF: UTYN a,
ORNU b,
OLD NEW
MEMN c,   ME (----,----),
OLD NEW
SUBMEM d,   SME (e , e),
REMARKS ---------------------------- !

```
 a = Unit type = VIF, DT, TGR, EST, TSI,
                 DIF, or SP

 b = RC order number

 c = Member number of growth associated
     frame

 d = Submember name
     = VIUEQ(0 to 6) (for VIU 0-6)
     = DTUEQ(0 to 7) (for DTU 0-7)
     = TMGRP(0 to 15) (for TGR 0-15)
     = ESEQ(0 to 14) (for ESU 0-14)
     = T0PRTEQ(0 to 6) (for SPC 0,
       Ports 0-6)
     = T1PRTEQ(0 to 6) (for SPC 1,
       Ports 0-6)
     = SP2EQ1 (for DT Interface Unit 1)
     = DIUEQ(0 to 31) (for DIU 0-31)
     = DIUSPQA (for Spare DIU 32)
     = DIUSPQB (for Spare DIU 33)
 e = Entered submember equipage
```

RECENT CHANGE AND VERIFY SUBMEMBER EQUIPAGE

```
┌─────────────────┐          ╱───────────────╲          ┌─────────────────┐
│ [5] Enter       │         ╱  [6] Was recent  ╲   No    │ [7] Determine   │
│ RCACT:ORNU a!   │────────▶│  change ACTIVATED  ├───────▶│ cause for       │
│ a = RC order    │         ╲  [TABLE C]        ╱         │ rejection;      │
│     number      │          ╲───────────────╱           │ repeat from Step│
└─────────────────┘                 │                     │ 5 with correct  │
                                    │ Yes                 │ input message   │
                                    ▼                     └─────────────────┘
                             ╱───────────────╲
                            ╱  [8] Does output ╲   Yes     ╭──────────────╮
                           │  message indicate  ├────────▶│   Page 4     │
                           │  all input entries ╱         ╰──────────────╯
                            ╲ are correct for  ╱
                             ╲ this recent    ╱
                              ╲ change       ╱
                               ╲───────────╱
                                    │ No
                                    ▼
                           ┌─────────────────┐         ┌─────────────────┐
                           │ [9] If input    │         │ [10] Repeat from│
                           │ entries are in  │         │ Step 1, Page 1, │
                           │ error and require│───────▶│ using corrected │
                           │ correcting,     │         │ message format  │
                           │ remove recent   │         └─────────────────┘
                           │ change from     │
                           │ system using    │
                           │ RC Form 701     │
                           └─────────────────┘
```

TABLE C

RC ORNU b ACTIVATED

RC:UTYPE;CHG;OPT(EQP,GROW),BUF: UTYN a,

ORNU b,

                          OLD NEW
MEMN c,   ME   (----, ----),
                          OLD NEW
SUBMEM d,   SME (e , e),

REMARKS----------------------------!

a = Unit type = VIF, DT, TGR, EST, TSI,
              or DIF

b = RC order number

c = Member number of growth associated
    frame

d = Submember name
  = VIUEQ(0 to 6) (for VIU 0-6)
  = DTUEQ(0 to 7) (for DTU 0-7)
  = TMGRP(0 to 15) (for TGR 0-15)
  = ESEQ(0 to 14) (for ESU 0-14)
  = TOPRTEQ(0 to 6) (for SPC 0,
    Ports 0-6)
  = T1PRTEQ(0 to 6) (for SPC 1,
    Ports 0-6)
  = SP2EQ1 (for DT Interface Unit 1)
  = DIUEQ(0 to 31) (for DIU 0-31)
  = DIUSPQA (for Spare DIU 32)
  = DIUSPQB (for Spare DIU 33)
  = Entered submember equipage

e = Entered submember equipage

RECENT CHANGE AND VERIFY SUBMEMBER EQUIPAGE

	TABLE D	
INPUT MESSAGE	**OUTPUT MESSAGE**	
VER:UTYPE:b c,SME f!	VER:UTMN;OPT(SME),CUR: FLN a, UTYN b, MEMN c, ME d, SUBMEM f, SME e,	

a = Floor location number
b = Unit Type = VIF, DT, TGR, TSI, EST, DIF, or SP
c = Member number of growth associated frame
d = GROW, SGRO, or OPER
e = Entered submember equipage
f = SME index number =

VIF/DT UNIT	INDEX NO.	TGR TERMINAL UNIT	INDEX NO.	TSI PORT	INDEX NO.	EST UNIT	INDEX NO.	DIF UNIT	INDEX NO.	DIF UNIT	INDEX NO.
VIU-0	09	0	32	SPC 0-0	56	0	128	0	143	17	160
1	10	1	33	1	57	1	129	1	144	18	161
2	11	2	34	2	58	2	130	2	145	19	162
3	12	3	35	3	59	3	131	3	146	20	163
4	13	4	36	4	60	4	132	4	147	21	164
5	14	5	37	5	61	5	133	5	148	22	165
6	15	6	38	6	62	6	134	6	149	23	166
DTU-0	110	7	39	SPC 1-0	63	7	135	7	150	24	167
1	111	8	40	1	64	8	136	8	151	25	168
2	112	9	41	2	65	9	137	9	152	26	169
3	113	10	42	3	66	10	138	10	153	27	170
4	114	11	43	4	67	11	139	11	154	28	171
5	115	12	44	5	68	12	140	12	155	29	172
6	116	13	45	6	69	13	141	13	156	30	173
7	117	14	46	**SP2 DT INTERFACE UNIT**		14	142	14	157	31	174
		15	47	0	120			15	158	32	175
				1	121			16	159	33	176

RECENT CHANGE AND VERIFY SUBMEMBER EQUIPAGE

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```
┌─────────────┐          ╱────────────╲                    ╱────────────╲
│ [1] Enter   │         ╱  [2] Was message ╲      Yes      ╱ [4] Does output ╲      Yes
│ message per │────────▶   accepted and did  ─────────────▶  message indicate  ──────────┐
│ TABLE A     │         ╲  diagnostic run   ╱               ╲ ATP on phases   ╱           │
└─────────────┘          ╲────────────╱                    ╲    run      ╱               │
                              │ No                               │ No                     │
                              ▼                                  ▼                        │
                    ┌─────────────────┐              ┌──────────────────────────┐         │
                    │ [3] Analyze     │              │ [5] Clear VIU/DTU/DIU    │         ▼
                    │ output message; │              │ diagnostic failure,      │        ─┴─
                    │ repeat from Step 1             │ ATP required.            │
                    │ with corrected  │              │ VIU= TOP 234-151-025     │
                    │ data            │              │ DTU= TOP 234-151-045     │
                    └─────────────────┘              │ DIU= TOP 234-151-055     │
                                                     └──────────────────────────┘
```

TABLE A
DGN:a b,c d:GROWTH!

a = Unit type-VIF or DT or DIF
b = Member number of growth
    associated frame
c = Subunit type-VIU or DTU or DIU
d = Submember number of
    growth associated unit

DIAGNOSE VIU/DTU/DIU

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[1] Read NOTE 1.
Enter
RST:PUB a!
a = Bus member
    number
    (0 or 1)

[2] Does output
message indicate
ATP and RESTORE
COMPLETED

Yes

No

[3] Output
message
indicates
trouble is in

Peripheral
growth
equipment

Nongrowth
PUB equipment

[5] Refer trouble
to installer for
resolution; ATP
required

[4] Clear PUB
diagnostic
failure; ATP
required
[TOP 234-151-015]

NOTE 1
Restore message
will cause PUB
diagnostic to be
run. PUB will be
restored if ATP

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RESTORE PERIPHERAL UNIT BUS TO SERVICE

[1] Note word in output message
    containing trunk scan point
    to be verified

[2] Convert six rightmost digits of
    word to be verified to decimal SP
    member, row, and column numbers
    using FIG. 1. Record results

[3] Get office record T-nnnn-Hn-460-xx
    or equivalent.
    xx = SP member number determined
    in Step 2

[4] Add decimal number per TABLE A
    to SP row number determined in
    Step 2. Record new result

[5] Search ROW and COL listing in
    office record and locate row and
    column previously recorded

AND → Page 2

TABLE A	
FOURTH RIGHTMOST OCTAL DIGIT IN ENTRY WORD EQUALS	DECIMAL NUMBER TO BE ADDED
0 or 1	0
2 or 3	64
4 or 5	128
6 or 7	192

entry data
octal output →

| | Y | | Y | | Y | | Y | | Y | | Y |

bit position →

| 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

binary values →

| X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

| SP MEMBER NUMBER | MATRIX | SP ROW NUMBER | SP COLUMN NUMBER |

FIG. 1 — Entry Data Word Layout

VERIFY TRUNK SCAN POINT ASSIGNMENT(S) FOR GROWTH FRAME

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[6] Does associated UNIT TYPE and FRM NO agree with growth frame

Yes

No

[7] Record discrepancy for later use

[8] Have all trunk scan assignments been verified for growth frame

Yes

No

[9] Repeat from Step 1, Page 1, for each additional scan point to be verified

VERIFY TRUNK SCAN POINT ASSIGNMENT(S) FOR GROWTH FRAME

SUMMARY

Frame controller 1 power switch is restored to normal. If
controller 1 diagnostics are ATP, the controller is
restored and initialized.

[1] Is **OFF** switch on frame control power switch 1 in **ROS** position

Yes →

[2] Read NOTE 1. Rotate **OFF** switch to normal position

No ↓

[3] Do power switch lamps indicate diagnostic request acknowledged

Yes →

No ↓

[4] Read NOTE 1. Rotate **OFF** switch to **ROS** and back to normal position

[5] Does output message indicate ATP and RESTORE COMPLETED

Yes →

No ↓

[6] Refer trouble to installer for resolution; ATP required

NOTE 1
Operation of
OFF switch should
cause diagnostic
to be run.
Controller will be
restored and
initialized if ATP

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RESTORE AND INITIALIZE CONTROLLER 1

SUMMARY
Using verify entry input message, call up VIF UT translator associated with growth VIU and verify that resulting TTY octal output data, when converted, agrees with office

records. Refer to entry word explanations in TABLE B, Page 4, as required, for assistance in interpreting specific data field. If it is determined that UT entry data is in error, word change(s) may be required.

[1] Enter
VER:UTYPE:VIF a!
a = Member number
of growth
associated VIF

[2] Are message format and member identification correct per TABLE A

No → [3] Determine cause and resolve; repeat from Step 1

Yes ↓

[4] Using TTY output, verify unequipped status of growth VIU per octal word 0, TABLE B, Page 4 [DLP-531]

[5] Is equipage state of growth VIU set to 00

Yes → Page 2, Step 7

No ↓

Page 2

TABLE A
VER:UTMN;OPT(),CUR: FLN a,   UTYN VIF,

VER:UTMN;OPT(),CUR: FLN a,   UTYN VIF,

MEMN b,   ME OPER,
ENTRY ADDRESS c,   ENTRY SIZE 16,

CUR
WORD 0   ___ ___ ___ ___
           ___ ___ ___ ___
WORD 10 ___ ___ ___ ___
           ___ ___ ___ ___

a = Floor location number
b = Member number of growth associated VIF
c = Starting octal address for unit
    type entry

VERIFY VIU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH VIU EQUIPAGE STATUS

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```
┌─────────────────────┐
│ [6] See CAUTION 1.  │
│ Using RC Form 701,  │
│ degrow submember    │
│ equipage to         │
│ unequipped [DLP-527]│
└─────────────────────┘
           │
           ▼
┌─────────────────────┐              ╱─────────────────╲
│ [7] Using TTY output│             ╱ [8] Does UT       ╲          Yes
│ and office records, │────────────▶  translator data    ───────────────┐
│ verify growth VIU   │             ╲ agree with office  ╱              │
│ version number per  │              ╲ records          ╱               │
│ octal word 10, TABLE B,            ╲─────────────────╱                │
│ Page 4 [DLP-513]    │                      │                          │
└─────────────────────┘                      │ No                       │
                                             ▼                          │
                              ┌─────────────────────┐                   │
                              │ [9] See CAUTION 1.  │                   │
                              │ Using RC Form 801,  │                   │
                              │ perform functional  │              ╭──────────╮
                              │ word change to      │─────────────▶│ Page 3   │
                              │ correct UT          │              ╰──────────╯
                              │ translator word 10  │
                              │ data [DLP-525]      │
                              └─────────────────────┘
```

CAUTION 1
Depending on local procedures, supervisory or TELCO engineering approval must be obtained prior to performing any data change

VERIFY VIU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH VIU EQUIPAGE STATUS

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[10] Using TABLE C, identify octal word associated with growth VIU ─────

[11] Using TTY output and office records, verify growth VIU to TSI port assignment per octal word identified in Step 10 and located in TABLE B, Page 4 [DLP-533]

```
         AND
```

[12] Does UT translator data agree with office records   Yes

No

[13] Refer problem to office supervisor/ installer to determine error and decide on corrective action

[14] Error was found to be in   Office records

UT entry data

[15] Take appropriate corrective action as determined by TELCO engineering/regional engineering and as approved by office supervisor

TABLE C	
VIU	OCTAL WORD
0, 1	14
2, 3	15
4, 5	16
6	17

VERIFY VIU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH VIU EQUIPAGE STATUS

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	TABLE B
ENTRY WORD (OCTAL)	**UT ENTRY DATA AND WORD CONFIGURATION**

Entry word 0

entry data octal output →

1	0	6	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	1	0	0	0	1	1	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X

VIU NO.: 6 5 4 3 2 1 0

VIU SUBMEMBER EQUIPAGE

XX = 2-digit code giving status of VIUs
  = 00 = unequipped
  = 11 = operational

Y...Y = Variable octal numbers

Entry word 10

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	V	V	V	V	V	V

VIU NO.: 7 6 5 4 3 2 1 0

VIU VERSION NUMBER

XX = Version numbers of VIUs as reflected in appropriate office record drawings and shipping information

Y...Y = Variable octal numbers

VERIFY VIU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH VIU EQUIPAGE STATUS

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION
14	entry data octal output →

Entry Word 14:

entry data octal output →	0	Y	Y	Y	Y	Y	Y	Y

bit position →	23 22 21 20	19 18 17 16 15 14	13	12 11 10	9 8 7 6 5 4	3	2 1 0
binary values →	0 0 0 0	X X X X X X	X	X X X	X X X X X X	X	X X X
		TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.	TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.
		VIU 1 TO TSI PORT ASSIGNMENT			VIU 0 TO TSI PORT ASSIGNMENT		

X...X = Converts to decimal VIU-TSI port assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

Entry Word 15:

entry data octal output →	0	Y	Y	Y	Y	Y	Y	Y

bit position →	23 22 21 20	19 18 17 16 15 14	13	12 11 10	9 8 7 6 5 4	3	2 1 0
binary values →	0 0 0 0	X X X X X X	X	X X X	X X X X X X	X	X X X
		TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.	TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.
		VIU 3 TO TSI PORT ASSIGNMENT			VIU 2 TO TSI PORT ASSIGNMENT		

X...X = Converts to decimal VIU-TSI port assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

VERIFY VIU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH VIU EQUIPAGE STATUS

	TABLE B (Contd)
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 16:

entry data octal output →

0	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.	TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.

VIU 5 TO TSI PORT ASSIGNMENT	VIU 4 TO TSI PORT ASSIGNMENT

X...X = Converts to decimal VIU-TSI port assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

Entry Word 17:

entry data octal output →

0	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	V	V	V	V	V	V	V	0	0	0	X	X	X	X	X	X	X	X	X	X

TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.

VIU 6 TO TSI PORT ASSIGNMENT

X...X = Converts to decimal VIU-TSI port assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

VERIFY VIU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH VIU EQUIPAGE STATUS

[1] At power switch,
    depress **ON** switch

[2] Read NOTE 1.
    Rotate **OFF** switch
    to normal position

AND

[3] Does output
message indicate
ATP or CATP and
RESTORE COMPLETED

Yes

No

[4] Output
message indicates
trouble is in

Peripheral
growth
equipment

[6] Refer trouble
to installer for
resolution; ATP
required

Nongrowth
equipment

[5] Clear
diagnostic failure;
ATP required

RESTORE FRAME POWER WITH POWER SWITCH

Refer to entry word explanations in TABLE B, Page 5, as required, for assistance in interpreting specific data fields. If it is determined that UT entry data is in error, word change(s) may be required.

[1] Enter
VER:UTYPE:VIF a!
a = Member number
    of growth VIF

[2] Are message format and member identification correct per TABLE A

No

[3] Determine cause and resolve; repeat from Step 1

Yes

[4] Using TTY output, check that member and submember equipage bits are set to 0 per word 0, TABLE B, Page 5

[5] Were equipage bits found in a state other than zero

No → Page 2, Step 7

Yes → Page 2

TABLE A

VER:UTMN;OPT(),CUR: FLN a,   UTYN VIF,

MEMN b,   ME UNEQ,
ENTRY ADDRESS c,   ENTRY SIZE 16,

CUR
WORD 0 _____ _____ _____ _____
        _____ _____ _____ _____
WORD 10 _____ _____ _____ _____
        _____ _____ _____ _____

a = Floor location number
b = Member number of growth VIF
c = Starting octal address for unit type entry

VERIFY VOICEBAND INTERFACE UT TR

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```
┌─────────────────────────────┐          ┌─────────────────────────────┐
│                             │          │ [7] Using TTY output        │
│ [6] Read CAUTION 1 and      │          │ and office records,         │
│ NOTE 1. Using RC Form 701,  │          │ verify VIF and VIU          │
│ degrow submember equipage   │─────────▶│ version numbers per         │
│  [DLP-527] and/or member    │          │ word 10 in TABLE B,         │
│ equipage to unequipped      │          │ Page 8 [DLP-513]            │
│  [DLP-526]                  │          │                             │
└─────────────────────────────┘          └─────────────────────────────┘
```

```
                        ╱──────────────────╲           No
                       ╱  [8] Were version   ╲─────────────┐
                       ╲  errors noted       ╱             │
                        ╲──────────────────╱               │
                               Yes                         │
```

```
┌─────────────────────────────┐          ╭──────────────╮
│ [9] See CAUTION 1.          │          │              │
│ Using RC Form 801,          │          │   Page 3     │
│ perform functional          │─────────▶│              │
│ word change to              │          ╰──────────────╯
│ correct data error          │
│  [DLP-525]                  │
└─────────────────────────────┘
```

NOTE 1
Submember equipage
must be degrown
first, if required,
followed by degrowth
of member equipage,
if required

CAUTION 1
Depending on local
procedures,
supervisory or
TELCO engineering
approval must be
obtained prior to
performing any
data change

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VERIFY VOICEBAND INTERFACE UT TRANSLATOR

Using TTY output, TABLE B, Page 5, and office records:

    [10] Verify miscellaneous member type data
         of word 0, bits 18 through 23

    [11] Verify alarm grid, lineup, and frame assignment
         for growth frame per word 1 [DLP-523]

    [12] Verify PUB branch assignment for growth frame
         per word 3 [DLP-524]

    [13] Verify scan point assignments for growth VIF
         per words 3 and 4 [DLP-529]

        [14] Verify member version for growth
            frame per word 11

        [15] Verify SD and pulse point assignments
            for growth VIF per words 2, 5, 6, 7,
            12, and 13 [DLP-528]

AND → Page 4

        [16] Verify VIU to TSI port assignment for
            growth VIF per words 14, 15, 16, and
            17 [DLP-533]

        [17] Verify TSI supplying clock to growth
            VIF per word 17 [DLP-582]

VERIFY VOICEBAND INTERFACE UT TRANSLATOR

```
    ┌──────────────┐
   ╱                ╲
  ╱  [18] Were       ╲          No
 ╱   discrepancies    ╲──────────────────────────────────────┐
 ╲   noted in Steps 10 ╱                                       │
  ╲  through 17, Page 3╱                                       │
   ╲                  ╱                                        │
    └──────┬─────────┘                                        │
           │ Yes                                              │
           ▼                                                  │
   ┌──────────────────┐                                       │
   │ [19] Refer        │       ╱─────────────╲   Office       │
   │ problem(s)        │      ╱  [20] Error    ╲  records      │
   │ to installer to   │─────▶│  was found to   │────────────▶│
   │ determine error   │      ╲  be in         ╱              │
   │ and decide on     │       ╲───────┬──────╱               │
   │ corrective action │               │                      │
   └──────────────────┘               │ UT                   │
                                       │ entry                │
                                       │ data                 │
           ┌───────────────────────────┤                      │
           │                           ▼                      │
           │         ┌───────────────────────────┐            │
           │         │ [21] Assist installer      │            │
           │         │ in taking appropriate      │            │
           │         │ corrective action as       │            │
           │         │ determined by              │            │
           │         │ regional engineering       │            │
           │         │ and as approved by         │            │
           │         │ office supervisor          │            │
           │         └─────────────┬─────────────┘            │
           │                       │                          │
           │                       ▼                          │
           │          ╱────────────────────╲   Yes            │
           │    No   ╱  [22] Have all UT     ╲                ▼
           └────────│  data errors now        │─────────────▶ ┃
                     ╲  been corrected        ╱
                      ╲────────────────────╱
```

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ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 0

entry data octal output →	1	0	0	0	0	0	0	0
bit position →	23 22 21	20 19 18	17 16	15 14	13 12	11 10 9	8 7 6	5 4 3 2 1 0
binary values →	0 0 1	0 0 0	0 0	0 0	0 0	0 0 0	0 0 0	0 0 0 0 0 0

MEMBER TYPE	MEMBER TYPE HARDWARE GENERATION	MEMBER EQUIPAGE		6 5 4 3 2 1 0 VIU NO.
				VIU SUBMEMBER EQUIPAGE

Entry Word 1

entry data octal output →	Y	Y	Y	Y	Y	Y	Y	Y
bit position →	23 22 21	20	19 18 17 16	15 14 13 12	11 10	9 8 7 6	5 4 3	2 1 0
binary values →	Z Z Z	Z	X X X X	X X X X	X X	X X X X	X X X	X X X

ASSIGNED ALARM GRID NUMBER	FRAME LINEUP NUMBER	FRAME NUMBER

X...X = Converts to decimal frame info as reflected in office floor plan drawing

ZZZZ = Converts to decimal alarm grid number as reflected in office record drawings T-nnnn-Hn-400, 401, or 402 or equivalent

Y = Variable octal numbers

VERIFY VOICEBAND INTERFACE UT TRANSLATOR

TABLE B (Contd)

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 2

entry data octal output	0	0	Y	Y	Y	Y	Y	Y
bit position	23 22 21	20 19 18	17 16 15	14 13 12	11 10 9	8 7 6	5 4 3	2 1 0
binary values	0 0 0	0 0 0	0 X X	X X X	0 X X	X X X	X X X	X X X

		SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER
		BASE SP PULSE POINT			

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

Entry Word 3

entry data octal output	Y	Y	Y	Y	Y	Y	Y	Y
bit position	23 22 21	20 19 18	17 16 15	14 13 12	11 10 9	8 7 6	5 4 3	2 1 0
binary values	0 1 Z	Z Z 0	0 X X	X X X	0 X X	X X X	X X X	X X X

	PUB BRANCH NUMBER ASSIGNMENT		SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER
			MEMBER BASE MISCELLANEOUS SCAN NUMBER			

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

ZZZ = 3-digit code corresponding to lettered PUB branch as reflected in office record drawing T-nnnn-Hn-3840 or equivalent

000 - branch A&B	100 - branch K&L
001 - branch C&D	101 - branch M&R
010 - branch E&F	110 - branch T&V
011 - branch G&H	111 - branch W&X

VERIFY VOICEBAND INTERFACE UT TRANSLATOR

TABLE B (Contd)

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 4

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER
	BUS BASE MISCELLANEOUS SCAN NUMBER			

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

Entry Word 5

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER
	DUPLICATE BASE SP PULSE POINT			

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

Entry Word 6

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER
	MEMBER BASE MISCELLANEOUS SD NUMBER			

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

VERIFY VOICEBAND INTERFACE UT TRANSLATOR

TABLE B (Contd)

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 7

entry data octal output	0	0	Y	Y	Y	Y	Y	Y
bit position	23 22 21	20 19 18	17 16 15	14 13	12 11 10	9 8 7	6 5 4	3 2 1 0

binary values: 0 0 0 0 0 0 0 | X X X X X | 0 X | X X X X X | X X X X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

BUS BASE MISCELLANEOUS SD NUMBER

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

Entry Word 10

entry data octal output	Y	Y	Y	Y	Y	Y	Y	Y
bit position	23 22	21 20	19 18	17 16	15 14	13 12	11 10	9 8 7 6 5 4 3 2 1 0

binary values: 0 0 | X X X X X X X X X X X X X X X X X X X X X X

7	6	5	4	3	2	1	0	CONTR 1	CONTR 0
(SPARE VIU)	VIU NO.							VIF CONTROLLER NO.	

VERSION NUMBER

XX = Version numbers of VIF equipment as reflected in appropriate office records and shipping information

Y = Variable octal numbers

VERIFY VOICEBAND INTERFACE UT TRANSLATOR

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TABLE B (Contd)	
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

11

entry data octal output →

	Y			Y			Y			Y			Y			Y			Y			Y	

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

MEMBER VERSION CLASS AC

Y...Y = Values as determined from PA-4A000 or Functional ODA Listing

12

entry data octal output →

	0			0			Y			Y			Y			Y			Y			Y	

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

MTCE ISOLATION BASE PULSE POINT

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

VERIFY VOICEBAND INTERFACE UT TRANSLATOR

	TABLE B (Contd)
ENTRY WORD (OCTAL)	**UT ENTRY DATA AND WORD CONFIGURATION**

Entry Word 13:

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

	DUPLICATE MTCE ISOLATION BASE PULSE POINT

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y...Y = Variable octal numbers

Entry Word 14:

entry data octal output →

0	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.	TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.

	VIU 1 TO TSI LEVEL ASSIGNMENT	VIU 0 TO TSI LEVEL ASSIGNMENT

X...X = Converts to decimal VIU-TSI level assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

VERIFY VOICEBAND INTERFACE UT TRANSLATOR

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION
15	entry data octal output →

| 0 | Y | Y | Y | Y | Y | Y | Y |

bit position → 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

binary values → 0 0 0 0 X X X X X X X X X X X X X X X X X X X X

| | TSI MEMBER NUMBER | SPC 0/1 | TSI PORT NO. | TSI MEMBER NUMBER | SPC 0/1 | TSI PORT NO. |

VIU 3 TO TSI LEVEL ASSIGNMENT / VIU 2 TO TSI LEVEL ASSIGNMENT

X...X = Converts to decimal VIU-TSI level assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent   Y...Y = Variable octal numbers |
| **16** | entry data octal output →

| 0 | Y | Y | Y | Y | Y | Y | Y |

bit position → 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

binary values → 0 0 0 0 X X X X X X X X X X X X X X X X X X X X

| | TSI MEMBER NUMBER | SPC 0/1 | TSI PORT NO. | TSI MEMBER NUMBER | SPC 0/1 | TSI PORT NO. |

VIU 5 TO TSI LEVEL ASSIGNMENT / VIU 4 TO TSI LEVEL ASSIGNMENT

X...X = Converts to decimal VIU-TSI level assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent   Y...Y = Variable octal numbers |

VERIFY VOICEBAND INTERFACE UT TRANSLATOR

TABLE B (Contd)	
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

| 17 | entry data octal output → |

octal output	0	Y	Y	Y	Y	Y	Y	Y
bit position →	23 22 21 20	19 18 17 16 15 14	13	12 11 10	9 8 7 6 5 4	3	2 1 0
binary values →	0 0 0 0	U U U U U U	Z	0 0 0	X X X X X X	X	X X X

TSI MEMBER DELIVERING CLOCK TO THIS VIF   SPC 0/1

TSI MEMBER NUMBER   SPC 0/1   TSI PORT NO.

VIU 6 TO TSI LEVEL ASSIGNMENT

X...X = Converts to decimal VIU-TSI level assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

Z = TSI SPC number (0/1) which connects to growth VIF

```
                          SUMMARY
          Diagnose SP controller 0 specifying growth. After ATP,
          restore controller to service.
```

```
[1] Enter
DGN:SP a,CONTR 0:GROWTH!
a = Member number of
    connecting SP2
```

[2] Was message accepted and controller 0 removed and did diagnostic run

— Yes → [4] Does output message indicate ATP on phases run

— No → [3] Analyze output message; repeat from Step 1 with corrected data

[4] Does output message indicate ATP on phases run

— Yes → Page 2

— No → [5] Output message indicates trouble is in

[5] Output message indicates trouble is in

— Nongrowth equipment → [7] Clear SP diagnostic failure; ATP required [TOP 234-151-031] → Page 2

— Peripheral growth equipment → [6] Refer trouble to installer for resolution; ATP required → Page 2

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DIAGNOSE AND RESTORE CONNECTING SP2 CONTROLLER 0

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```
[8] Read NOTE 1.          [9] Does output              Yes
Enter                     message indicate
RST:SP a,CONTR 0!         ATP and RESTORE
a = Member number         COMPLETED
    of connecting
    SP2                          │ No
                                 ▼
                          [10] Clear SP
                          diagnostic
                          failure; ATP
                          required
                          [TOP 234-151-031]
```

DIAGNOSE AND RESTORE CONNECTING SP2 CONTROLLER 0

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SUMMARY
Diagnose TSI frame controllers 0 and 1 specifying GROWTH
and phase 13 for J4A001A TSI or phase 20 for J4A001B TSI.
After ATP, restore controllers to service.

[1] Enter TSI controller diagnostic message per TABLE A

[2] Was message accepted and controller 0 removed and did diagnostic run

No → [3] Analyze output message; repeat from Step 1 using corrected data

Yes ↓

[4] Does output message indicate ATP on phase run

Yes → Page 2, Step 9

No ↓

Page 2

TABLE A
DGN:TSI a,CONTR 0:PH b,GROWTH!

a = Member number of connecting TSI
b = Phase:
    13 (for J4A001A TSI) or
    20 (for J4A001B TSI)

**DIAGNOSE SPECIFYING APPROPRIATE PHASE AND GROWTH AND RESTORE
CONNECTING TSI CONTROLLERS 0 AND 1**

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```
         ┌─────────────┐
         │ [5] Is this │
         │ growth job  │           No
         │ assisted by │──────────────────────┐
         │ installer   │                       │
         └─────────────┘                       │
               │ Yes                           │
               ▼                               ▼
         ┌─────────────┐  Nongrowth    ┌──────────────────┐
         │ [6] Output  │  equipment    │ [8] Clear TSI    │
         │ message     │──────────────▶│ diagnostic       │
         │ indicates   │               │ failure; ATP     │
         │ trouble is in│              │ required         │
         └─────────────┘               │   [TOP 234-151-012]│
               │ Peripheral            └──────────────────┘
               │ growth                        │
               │ equipment                     ▼
               ▼                       ┌──────────────────┐      ┌───────────────┐
      ┌──────────────┐                 │ [9] Read NOTE 1. │      │[10] Does output│  Yes
      │ [7] Refer    │                 │ Enter            │      │message indicate│──────┐
      │ trouble to   │                 │ RST:TSI a,CONTR 0!│────▶│ATP and RESTORE │      │
      │ installer for│────────────────▶│ a = Member number│      │COMPLETED       │      │
      │ resolution;  │                 │   of connecting  │      └───────────────┘      │
      │ ATP required │                 │   TSI            │             │ No            │
      └──────────────┘                 └──────────────────┘             ▼               │
                                                              ┌──────────────────┐      │
                                                              │ [11] Clear TSI   │      │
                                                              │ diagnostic       │      ▼
                                                              │ failure; ATP     │  ┌────────┐
                                                              │ required         │─▶│ Page 3 │
                                                              │  [TOP 234-151-012]│  └────────┘
                                                              └──────────────────┘
```

NOTE 1
Restore input message will cause diagnostic to be run and controller to be restored if ATP

DIAGNOSE SPECIFYING APPROPRIATE PHASE AND GROWTH AND RESTORE CONNECTING TSI CONTROLLERS 0 AND 1

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```
┌─────────────┐        ╱────────────╲        ┌─────────────┐
│ [12] Enter  │       ╱ [13] Was     ╲       │ [14] Analyze│
│ TSI         │      ╱ message        ╲  No  │ output      │
│ controller  ├─────▶  accepted and    ───── │ message;    │
│ diagnostic  │      ╲ controller 1   ╱   ──▶│ repeat from │
│ message per │       ╲ removed and did╱     │ Step 12 using│
│ TABLE B     │        ╲ diagnostic run      │ corrected data│
└─────────────┘         ╲────────────╱       └─────────────┘
                            │ Yes
                            ▼
                     ╱────────────╲
                    ╱ [15] Does    ╲   Yes    ╭──────────╮
                   ╱ output message ╲ ──────  │ Page 4,  │
                   ╲ indicate ATP   ╱ ──────▶ │ Step 20  │
                    ╲ on phases run ╱         ╰──────────╯
                     ╲────────────╱
                            │ No
                            ▼
                     ╭──────────╮
                     │  Page 4  │
                     ╰──────────╯
```

TABLE B
DGN:TSI a,CONTR 1:PH b,GROWTH!
a = Member number of connecting TSI b = Phase: 　　13 (for J4A001A TSI) or 　　20 (for J4A001B TSI)

DIAGNOSE SPECIFYING APPROPRIATE PHASE AND GROWTH AND RESTORE
CONNECTING TSI CONTROLLERS 0 AND 1

[16] Is this growth job assisted by installer

No

Yes

[17] Output message indicates trouble is in

Nongrowth equipment

[19] Clear TSI diagnostic failure; ATP required
  [TOP 234-151-012]

Peripheral growth equipment

[18] Refer trouble to installer for resolution; ATP required

[20] Read NOTE 2. Enter
RST:TSI a,**CONTR 1!**
a = Member number of connecting TSI

[21] Does output message indicate ATP and RESTORE COMPLETED

Yes

No

[22] Clear TSI diagnostic failure; ATP required
  [TOP 234-151-012]

NOTE 2
Restore input message will cause diagnostic to be run and controller to be restored if ATP

DIAGNOSE SPECIFYING APPROPRIATE PHASE AND GROWTH AND RESTORE CONNECTING TSI CONTROLLERS 0 AND 1

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```
┌─────────────────────────────────────────┐
│                SUMMARY                   │
│  Diagnose TSI frame controllers 0 and 1  │
│  specifying GROWTH. After ATP, restore   │
│  controllers to service.                 │
└─────────────────────────────────────────┘
```

```
┌─────────────────────────┐         ╱──────────────╲                    ┌──────────────────┐
│ [1] Enter               │        ╱ [2] Was message ╲       No          │ [3] Analyze      │
│ DGN:TSI a,CONTR 0:GROWTH!│───────▶  accepted and     ────────────────▶ │ output message;  │
│ a = Member number of    │        ╲ controller 0     ╱                  │ repeat from      │
│     connecting TSI      │         ╲ removed and did╱                   │ Step 1 using     │
└─────────────────────────┘          ╲ diagnostic run╱                   │ corrected data   │
                                      ╲──────┬───────╱                    └──────────────────┘
                                             │ Yes
                                             ▼
                                      ╱──────────────╲
                                     ╱ [4] Does output╲         Yes         ╭──────────────╮
                                      message indicate  ──────────────────▶ │  Page 2,     │
                                     ╲ ATP on phases   ╱                     │  Step 9      │
                                      ╲ run           ╱                      ╰──────────────╯
                                       ╲──────┬──────╱
                                              │ No
                                              ▼
                                       ╭──────────────╮
                                       │   Page 2     │
                                       ╰──────────────╯
```

DIAGNOSE AND RESTORE CONNECTING TSI CONTROLLERS 0 AND 1

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[5] Is this growth job assisted by installer

No

Yes

[6] Output message indicates trouble is in

Nongrowth equipment

Peripheral growth equipment

[8] Clear TSI diagnostic failure; ATP required [TOP 234-151-012]

[7] Refer trouble to installer for resolution; ATP required

[9] Read NOTE 1. Enter **RST:TSI** a**,CONTR 0!** a = Member number of connecting TSI

[10] Does output message indicate ATP and RESTORE COMPLETED

Yes

No

[11] Clear TSI diagnostic failure; ATP required [TOP 234-151-012]

Page 3

NOTE 1
Restore input message will cause diagnostic to be run and controller to be restored if ATP

DIAGNOSE AND RESTORE CONNECTING TSI CONTROLLERS 0 AND 1

```
┌─────────────────────┐                                    ┌──────────────────┐
│ [12] Enter          │        ╱────────────╲              │ [14] Analyze     │
│ DGN:TSI a,CONTR 1:GROWTH!   ╱ [13] Was message ╲    No   │ output message;  │
│ a = Member number of │──▷ ⟨ accepted and       ⟩────────▷│ repeat from      │
│     connecting TSI  │     ⟨ controller 1        ⟩        │ Step 12 using    │
│                     │      ╲ removed and did  ╱          │ corrected data   │
└─────────────────────┘       ╲ diagnostic run ╱           └──────────────────┘
                               ╲────────────╱
                                     │ Yes
                                     ▽
                               ╱────────────╲              ╭──────────────╮
                              ╱ [15] Does     ╲    Yes      │ Page 4,      │
                             ⟨ output message   ⟩──────────▷│ Step 20      │
                             ⟨ indicate ATP     ⟩           ╰──────────────╯
                              ╲ on phases run  ╱
                               ╲────────────╱
                                     │ No
                                     ▽
                               ╭──────────────╮
                               │ Page 4       │
                               ╰──────────────╯
```

Flowchart

[16] Is this growth job assisted by installer
- Yes → [17]
- No → [19]

[17] Output message indicates trouble is in
- Nongrowth equipment → [19]
- Peripheral growth equipment → [18]

[18] Refer trouble to installer for resolution; ATP required → [20]

[19] Clear TSI diagnostic failure; ATP required [TOP 234-151-012] → [20]

[20] Read NOTE 2. Enter RST:TSI a,CONTR 1! a = Member number of connecting TSI → [21]

[21] Does output message indicate ATP and RESTORE COMPLETED
- Yes → (end)
- No → [22]

[22] Clear TSI diagnostic failure; ATP required [TOP 234-151-012] → (end)

NOTE 2
Restore input message will cause diagnostic to be run and controller to be restored if ATP

DIAGNOSE AND RESTORE CONNECTING TSI CONTROLLERS 0 AND 1

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[1] Read NOTE 1.
Enter message
per TABLE A

[2] Was message
accepted and did
diagnostic run

Yes

No

[3] Analyze
output message;
repeat from
Step 1 with
corrected data

[4] Does output
message indicate
ATP and RESTORE
COMPLETED

Yes

No

[5] Is this
growth job
assisted by
installer

Yes

No

[7] Refer
trouble to
installer;
ATP required

[6] Clear diagnostic
failures, ATP required
VIU — TOP 234-151-025
DTU — TOP 234-151-045
DIU — TOP 234-151-055

TABLE A
RST:a b,c d!
a = Unit type = VIF or DT or DIF b = Member number of growth   associated frame c = Submember type = VIU or DTU or DIU d = Submember number of growth unit

NOTE 1
Restore input
message will cause
diagnostic to be
run and VIU/DTU/DIU
to be restored,
if ATP

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RESTORE VIU/DTU/DIU

[1] Note contents of word(s) in entry
output message containing version
data to be verified

[2] For each controller and/or submember
convert octal digits to version number
per FIG. 1 and record

[3] Obtain from shipping information
or installer, issue number(s) for
each growth frame controller and/or
submember

AND

Page 2

entry data octal output →	Y	Y	Y	Y	Y	Y	Y	Y

FIG. 1 — Typical Word Layout for Version Number Data

VERIFY CONTROLLER AND/OR SUBMEMBER VERSION NUMBERS

[4] Using TABLE A, select version
numbers associated with LDI
issues of Step 3. See NOTE 1 ⎯⎯⎯⎯⎯

[5] Compare version numbers in
Step 4 with version numbers
calculated in Step 2 ⎯⎯⎯⎯⎯

AND

[6] Record
discrepancies
found in Step 5

TABLE A					
UNIT	**SD NUMBER**	**MEMBER VERSION NUMBER**			
		0	**1**	**2**	**3**
VIF Controller	5G156-01	*1A	1A	4C	5G
	5G158-01	1A	4A	5A	6F
VIF Unit	5G156-01	1A	5B	—	—
	5G157-01	1A	5A	—	—
TGR Controller	4A054-01	1A	—	—	—
DT Controller	6G114-01	1A	—	—	—
DT Unit	6G114-01	1A	—	—	—
EST Controller	5G168-01	1A	—	—	—
EST Unit	5G168-01	1A	—	—	—
* LDI Issue Numbers					

NOTE 1
PECC diagnostic
center may be
consulted for
current version
information if
not listed in
TABLE A

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VERIFY CONTROLLER AND/OR SUBMEMBER VERSION NUMBERS

SUMMARY

Using verify entry input message, call up TGR UT translator and verify that resulting TTY octal output data, when converted, agrees with office records. Refer to entry word explanations in TABLE B, Page 5, as required, for assistance in interpreting specific data fields. If it is determined that UT entry data is in error, word change(s) may be required.

[1] Enter
VER:UTYPE:TGR a!
a = Member number
    of growth TGR

[2] Are message format and member identification correct per TABLE A

Yes → Page 2

No

[3] Determine cause and resolve; repeat from Step 1

TABLE A

VER:UTMN,OPT(),CUR: FLN a,   UTYN TGR,

MEMN b,   ME UNEQ,
ENTRY ADDRESS c,   ENTRY SIZE 81,

CUR
WORD 0   _____ _____ _____ _____
          _____ _____ _____ _____
WORD 10   _____ _____ _____ _____
          _____ _____ _____ _____
WORD 20   _____ _____ _____ _____
          _____ _____ _____ _____
                    •
                    •
                    •
                    •
          _____ _____ _____ _____
WORD 110 _____ _____ _____ _____
          _____ _____ _____ _____
WORD 120 _____

a = Floor location number
b = Member number of growth TGR
c = Starting address (Word 0)

VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR

[4] Using TTY output, verify UNEQ status of TGR member and submembers per octal words 0 and 12 in TABLE B, Page 5

[5] Is equipage status of member and submembers set to 00

No →

[6] Read NOTE 1 and CAUTION 1. Using RC Form 701, degrow submember equipage [DLP-527] and/or member equipage to unequipped [DLP-526]

Yes

[7] Using TTY output and office records, verify TGR controller version number per word 10 in TABLE B [DLP-513]

[8] Were version errors noted

Yes →

[9] See CAUTION 1. Using RC Form 801, perform functional word change to correct data error [DLP-525]

No

Page 3

NOTE 1
Submember equipage must be degrown first, if required, followed by degrowth of member equipage, if required

CAUTION 1
Depending on local procedures, supervisory or TELCO engineering approval must be obtained prior to performing any data changes

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VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR

Using TTY output, TABLE B, Page 5; and
office records:

    [10] Verify miscellaneous member
         type data of bits 18 through 23
         per word 0

    [11] Verify alarm grid, lineup, and
         frame assignment for growth frame
         per word 1 [DLP-523]

    [12] Verify PUB branch assignment
         for growth frame per word 3
         [DLP-524]

    [13] Verify SD and pulse point
         assignments for growth TGR
         per words 2, 5, 6, 7, and 14
         [DLP-528]

    [14] Verify member version data
         per word 11

    [15] Verify scan point assignments
         for growth frame per words 3, 4,
         13, 15, 16, 17, and 20 [DLP-529]

AND → Page 4

VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR

TABLE B

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 0:

entry data octal output	1	0	0	0	0	0	0	0
bit position	23 22 21	20 19 18	17 16	15 14 13 12	11 10 9 8	7 6 5 4	3 2	1 0
binary values	0 0 1	0 0 0	0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0	0 0

MEMBER TYPE	MEMBER TYPE HARDWARE GENERATION	MEMBER EQUIPAGE	7	6	5	4	3	2	1	0
			TERMINAL UNIT NUMBER							
			TERMINAL UNIT SUBMEMBER EQUIPAGE							

Entry Word 1:

entry data octal output	Y	Y	Y	Y	Y	Y	Y	Y
bit position	23 22 21	20 19 18	17 16	15 14 13 12	11 10 9 8	7 6 5 4	3 2	1 0
binary values	Z Z Z	Z X X X	X X	X X X X	X X X X	X X X X	X X	X X

ASSIGNED ALARM GRID NUMBER	FRAME LINEUP NUMBER	FRAME NUMBER

X...X = Converts to decimal frame info as reflected in office floor plan drawing

Y= Variable octal numbers

ZZZZ = Converts to decimal alarm grid number as reflected in office record drawings T-nnnn-Hn-400, 401, or 402 or equivalent

VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR

TABLE B (Contd)	
ENTRY WORD (OCTAL)	**UT ENTRY DATA AND WORD CONFIGURATION**

Entry Word 2

entry data octal output	0	0	Y	Y	Y	Y	Y	Y
bit position	23 22 21	20 19 18	17 16 15	14 13 12	11 10 9	8 7 6	5 4 3	2 1 0

entry data octal output → | 0 | 0 | Y | Y | Y | Y | Y | Y |

bit position → 23 22 21 20 19 18 17 | 16 15 14 13 12 | 11 10 | 9 8 7 6 5 4 | 3 2 1 0

binary values → 0 0 0 0 0 0 0 | X X X X X | 0 X | X X X X X X | X X X X

- (16–12) SP MEMBER NUMBER
- (11–10) L OR R MATRIX
- (9–4) SP ROW NUMBER
- (3–0) SP COLUMN NUMBER
- (16–0) BASE SP PULSE POINT

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

Entry Word 3

entry data octal output → | Y | Y | Y | Y | Y | Y | Y | Y |

bit position → 23 22 21 20 19 18 17 | 16 15 14 13 12 | 11 10 | 9 8 7 6 5 4 | 3 2 1 0

binary values → 0 1 Z Z Z 0 0 | X X X X X | 0 X | X X X X X X | X X X X

- (21–19 ZZZ) PUB BRANCH NUMBER ASSIGNMENT
- (16–12) SP MEMBER NUMBER
- (11–10) L OR R MATRIX
- (9–4) SP ROW NUMBER
- (3–0) SP COLUMN NUMBER
- (16–0) MEMBER BASE MISCELLANEOUS SCAN NUMBER

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

ZZZ = 3-digit code corresponding to lettered PUB branch as reflected in office record drawing T-nnnn-Hn-3840 or equivalent

ZZZ	branch	ZZZ	branch
000	branch A&B	100	branch K&L
001	branch C&D	101	branch M&R
010	branch E&F	110	branch T&V
011	branch G&H	111	branch W&X

VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION
4	(see diagram below)

octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER
	BUS BASE MISCELLANEOUS SCAN NUMBER			

```
X...X = Converts to decimal SP info
        as reflected in office record
        drawing T-nnnn-Hn-461 or equivalent

  Y = Variable octal numbers
```

VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR

	TABLE B (Contd)
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 5:

entry data octal output →	0	0	Y	Y	Y	Y	Y	Y

bit position →	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values →	0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

SP MEMBER NUMBER (bits 16–12), L OR R MATRIX (bits 11–10), SP ROW NUMBER (bits 9–4), SP COLUMN NUMBER (bits 3–0)

DUPLICATE BASE SP PULSE POINT

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

Entry Word 6:

entry data octal output →	0	0	Y	Y	Y	Y	Y	Y

bit position →	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values →	0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

SP MEMBER NUMBER (bits 16–12), L OR R MATRIX (bits 11–10), SP ROW NUMBER (bits 9–4), SP COLUMN NUMBER (bits 3–0)

MEMBER BASE MISCELLANEOUS SD NUMBER

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR

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	TABLE B (Contd)
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION
7	entry data octal output → bit position → binary values → | 0	0	Y	Y	Y	Y	Y	Y | bit positions: 23 22 21 20 19 18 17	16 15 14 13 12	11 10 9	8 7 6 5 4	3 2 1 0 binary: 0 0 0 0 0 0 0	X X X X X	0 X	X X X X X X	X X X X SP MEMBER NUMBER / L OR R MATRIX / SP ROW NUMBER / SP COLUMN NUMBER BUS BASE MISCELLANEOUS SD NUMBER X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent Y = Variable octal numbers
10	entry data octal output → bit position → binary values → 	0	0	0	0	0	0	Y	Y	 bit positions: 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6	5 4 3	2 1 0 binary: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	X X X	X X X CONTROLLER 1 / CONTROLLER 0 TGR CONTROLLER VERSION NUMBER X...X = Version numbers of TGR equipment as reflected in appropriate office record drawings and shipping info Y = Variable octal numbers

VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR
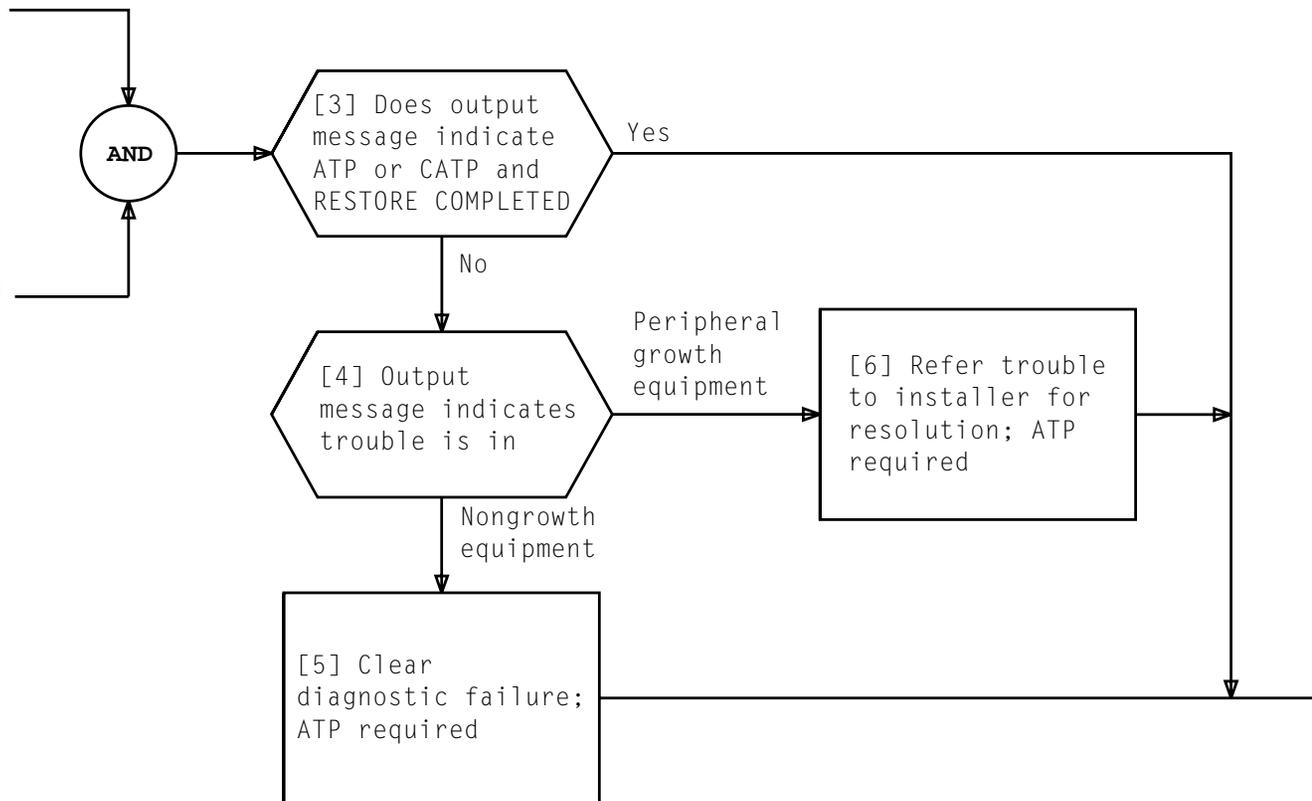
	TABLE B (Contd)
ENTRY WORD (OCTAL)	**UT ENTRY DATA AND WORD CONFIGURATION**
11	entry data octal output → Y Y Y Y Y Y Y Y bit position → 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 binary values → X X X X X X X X X X X X X X X X X X X X X X X X MEMBER VERSION Y...Y = Values as determined from PA-4A000 or functional ODA listing
12	entry data octal output → 0 0 0 0 0 0 0 0 bit position → 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 binary values → 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 15 14 13 12 11 10 9 8 TERMINAL UNIT NUMBER TERMINAL UNIT SUBMEMBER EQUIPAGE

VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR

TABLE B (Contd)

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

13

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X

- bits 16–12: SP MEMBER NUMBER
- bits 11–10: L OR R MATRIX
- bits 9–4: SP ROW NUMBER
- bits 3–0: SP COLUMN NUMBER
- TERMINAL UNIT BASE MISCELLANEOUS SCAN NUMBER

X...X = Converts to decimal SP info
as reflected in office record
drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

14

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X

- bits 16–12: SP MEMBER NUMBER
- bits 11–10: L OR R MATRIX
- bits 9–4: SP ROW NUMBER
- bits 3–0: SP COLUMN NUMBER
- TERMINAL UNIT BASE MISCELLANEOUS SD NUMBER

X...X = Converts to decimal SP info
as reflected in office record
drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

	TABLE B (Contd)
ENTRY WORD (OCTAL)	**UT ENTRY DATA AND WORD CONFIGURATION**

15

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

CONTROL 0 LOW PRIORITY MISCELLANEOUS SCAN NUMBER

X...X = Converts to decimal SP info
    as reflected in office record
    drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

16

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

CONTROL 0 HIGH PRIORITY MISCELLANEOUS SCAN NUMBER

X...X = Converts to decimal SP info
    as reflected in office record
    drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR

	TABLE B (Contd)
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 17:

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

CONTROL 1 LOW PRIORITY MISCELLANEOUS SCAN NUMBER

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

Entry Word 20:

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

CONTROL 1 HIGH PRIORITY MISCELLANEOUS SCAN NUMBER

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

VERIFY WORDS 0 TO 20 OF TGR UT TRANSLATOR

SUMMARY
Diagnose TGR controller 0. After ATP, restore controller 0
to service. Repeat diagnostic and restoral for controller 1.

[1] Enter

DGN:TGR a,CONTR 0!

a = Member number
    of growth TGR

[2] Was message
accepted and did
diagnostic run

Yes

[4] Does output
message indicate
ATP on phases
run

Yes

No

No

[3] Analyze output
message; repeat
from Step 1 using
corrected data

[5] Clear TGR
diagnostic failure.
[TOP 234-151-033].
ATP required

[6] Read NOTE 1.
Enter

RST:TGR a,CONTR 0!

a = Member number
    of growth TGR

Page 2

NOTE 1
Restore input
message will cause
TGR diagnostic to
be run and controller
to be restored, if
ATP

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DIAGNOSE AND RESTORE OPERATIONAL TGR FRAME CONTROLLERS

```
   ┌─────────────────┐
  ╱ [7] Does output   ╲         Yes
 ╱  message indicate   ╲─────────────────┐
 ╲  ATP and RESTORE    ╱                 │
  ╲ COMPLETED         ╱                  │
   └────────┬────────┘                   │
           No                            │
            │                            │
            ▼                            ▼
┌──────────────────┐  ┌──────────────────┐        ┌─────────────────┐         ┌──────────────────┐
│ [8] Clear TGR    │  │ [9] Enter        │       ╱ [10] Was message ╲    No   │ [11] Analyze output│
│ diagnostic       │  │                  │──────╱  accepted and did  ╲───────▶│ message; repeat   │
│ failure.         │─▶│ DGN:TGR a,CONTR 1!│      ╲  diagnostic run    ╱        │ from Step 9 using │
│ [TOP 234-151-033]│  │                  │       ╲                   ╱         │ corrected data    │
│ ATP required     │  │ a = Member number│        └────────┬────────┘         └──────────────────┘
└──────────────────┘  │     of growth TGR│                Yes
                      └──────────────────┘                 │
                                                           ▼
                                              ┌─────────────────┐
                                             ╱ [12] Does output  ╲       Yes
                                            ╱  message indicate   ╲───────────┐
                                            ╲  ATP on phases      ╱           │
                                             ╲ run               ╱            │
                                              └────────┬────────┘             │
                                                      No                      │
                                                       │                      │
                                                       ▼                      │
                                           ┌──────────────────┐               │
                                           │ [13] Clear TGR   │               ▼
                                           │ diagnostic       │         ╭───────────╮
                                           │ failure.         │────────▶│  Page 3   │
                                           │ [TOP 234-151-033]│         ╰───────────╯
                                           │ ATP required     │
                                           └──────────────────┘
```

DIAGNOSE AND RESTORE OPERATIONAL TGR FRAME CONTROLLERS

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```
┌─────────────────────┐                                        Yes
│ [14] Read NOTE 2.   │        ╱────────────────╲  ───────────────────┐
│ Enter               │       ╱  [15] Does output ╲                    │
│ RST:TGR a,CONTR 1!  │──────▶   message indicate  ╲                   │
│ a = Member number   │       ╲  ATP and RESTORE   ╱                   │
│     of growth TGR   │        ╲ COMPLETED        ╱                    │
└─────────────────────┘         ╲────────────────╱                    │
                                        │                             │
                                        │ No                          │
                                        ▼                             │
                         ┌───────────────────────┐                    │
                         │ [16] Clear TGR         │                    ▼
                         │ diagnostic failure.    │──────────────────┤
                         │ [TOP 234-151-033]      │
                         │ ATP required           │
                         └───────────────────────┘
```

DIAGNOSE AND RESTORE OPERATIONAL TGR FRAME CONTROLLERS

[1] Read NOTE 1. At terminal group basic frame power switch, rotate **OFF** switch to normal position

[2] Read NOTE 2. Was diagnostic test completed and did TTY output message indicate ATP

Yes

No

[3] Output message indicates trouble is in

Peripheral growth equipment

Nongrowth equipment

[5] Refer trouble to installer for resolution; ATP required

[4] Clear TGR diagnostic failure; ATP required [TOP 234-151-033]

NOTES
1. An automatic diagnostic will occur on frame controller
2. If diagnostic indicated ATP, **OFF NORM** and **OS** lamps will go off. If diagnostic fails, **OS** lamp will remain lighted and **OFF NORM** lamp will go off

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DIAGNOSE TGR FRAME CONTROLLER USING POWER SWITCH

SUMMARY
Using verify entry input message, verify current state
of member and subtype equipage of connecting SP2 and port
assignment data. Compare entry data output of WORD 0 and
port assignment with expected data in TABLE B, Page 3.

```
TABLE A

VER:UTMN;OPT,CUR:  FLN a,              UTYN SP,

MEMN b,          ME OPER,
ENTRY ADDRESS c,              ENTRY SIZE 16,

CUR
WORD 0   ____ ____ ____ ____
         ____ ____ ____ ____
WORD 10  ____ ____ ____ ____
         ____ ____ ____ ____
```

a = Floor location number
b = Member number of connecting SP
c = Starting octal address for
    unit type entry

[1] Enter
VER:UTYPE:SP a!
a = Member number of
    connecting SP

[2] Are message
format and member
identification
correct per
TABLE A

Yes

No

[3] Determine
cause and
resolve; repeat
from Step 1

[4] Compare WORD 0 of entry output
    and TABLE B to verify member
    equipage and submember equipage
    (SP2EQ) associated with growth
    DT

[5] Note equipage status
    for later use

[6] Compare information at end of
    entry output and TABLE B to
    verify connecting SP2 port
    assignment of DT being added

AND

Page 2

**VERIFY SP2 PORT ASSIGNMENT AND EQUIPAGE STATUS OF
CONNECTING SP2 EQUIPMENT**

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Flowchart:

[7] Were discrepancies noted (decision hexagon)
- No → (proceeds right and down to end terminator)
- Yes → **[8] Refer problem(s) to installer to determine error and decide on corrective action** → **[9] Assist installer in taking appropriate corrective action as determined by regional engineering and as approved by office supervisor** → (end terminator)

VERIFY SP2 PORT ASSIGNMENT AND EQUIPAGE STATUS OF CONNECTING SP2 EQUIPMENT

ENTRY WORD (OCTAL)	TABLE B								
	UT ENTRY DATA AND WORD CONFIGURATION								

	entry data octal output →	2	0	6	0	0	Y	Y	Y
	bit position →	23 22 21	20 19 18	17 16	15 14 13	12 11 10	9 8	7 6	5 4	3 2	1 0
	binary values →	0 1 0	0 0 0	1 1	0 0 0	0 0 0	0 0	X X	X X	X X	X X
0				MEMBER EQUIP				3	2	1	0
								SP2EQ			
								SUBTYPE SUBMEMBER EQUIPAGE			

XX = 01 For SP2EQ in growth state or
   = 11 For SP2EQ in operational state.
 Y = Variable octal numbers

```
VER:UTMN;OPT(MISC),CUR:                                  UTYN SP,
MEMN a,

            SP PORT      DIGROUP TERMINAL        SP PORT  DIGROUP TERMINAL
                  ⎧ 1           b                     ⎧ 9          c
                  │ 2           b                     │ 10         c
  * SP2EQ0        │ 3           b        * SP2EQ2     │ 11         c
                  ⎩ 4           b                     ⎩ 12         c
                  ⎧ 5           c                     ⎧ 13         c
                  │ 6           c                     │ 14         c
  * SP2EQ1        │ 7           c        * SP2EQ3     │ 15         c
                  ⎩ 8           c                     ⎩ 16         c



  a = Member number of SP2 associated with growth DT
  b = Member number of E & M type digroup terminal frame assigned to associated SP port
  c = Member number of CCIS type digroup terminal frame assigned to associated SP port

  * = For information only — not part of VER:UTMN output message
```

VERIFY SP2 PORT ASSIGNMENT AND EQUIPAGE STATUS OF CONNECTING SP2 EQUIPMENT

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Refer to entry word explanations of in TABLE B, Page 5, as required, for assistance in interpreting specific data fields. If it is determined that UT entry data is in error, word change(s) may be required.

TABLE A

```
VER:UTMN;OPT(),CUR:  FLN a,              UTYN DT,


MEMN b,          ME UNEQ,

ENTRY ADDRESS c,            ENTRY SIZE 10,


CUR
WORD 0   ____ ____ ____ ____
         ____ ____ ____ ____
WORD 10  ____ ____
```

a = Floor location number
b = Member number of growth DT
c = Starting octal address for unit type entry

[1] Enter
VER:UTYPE:DT a!
a = Member number
    of growth DT

[2] Are message format and member identification correct per TABLE A — No → [3] Determine cause and resolve; repeat from Step 1

Yes

[4] Using TTY output, check that member and submember equipage bits are set to 0 per word 0, TABLE B, Page 5

[5] Were equipage bits found in a state other than zero — No → Page 2, Step 7

Yes → Page 2

VERIFY DT UT TRANSLATOR

```
┌─────────────────────┐      ┌─────────────────────┐
│ [6] Read CAUTION 1  │      │ [7] Using TTY output│
│ and NOTE 1. Using RC│      │ and office records, │
│ Form 701, degrow    │─────▶│ verify DT and DTU   │
│ submember equipage  │      │ version numbers     │
│ [DLP-527] and/or    │      │ per word 11 in      │
│ member equipage to  │      │ TABLE B, Page 9     │
│ unequipped          │      │  [DLP-513]          │
│ [DLP-526]           │      │                     │
└─────────────────────┘      └─────────────────────┘
```

[8] Were version errors noted — No ─▶ Page 3

Yes

┌─────────────────────┐
│ [9] See CAUTION 1. │
│ Using RC Form 801, │
│ perform functional │──▶ Page 3
│ word change to   │
│ correct data error │
│ [DLP-525]   │
└─────────────────────┘

NOTE 1
Submember equipage must be degrown first, if required, followed by degrowth of member equipage, if required

CAUTION 1
Depending on local procedures, supervisory or TELCO engineering approval must be obtained prior to performing any data change

VERIFY DT UT TRANSLATOR

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Using TTY output, TABLE B, Page 5, and office records:

[10] Verify miscellaneous member type data of
     word 0, bits 16 through 21

[11] Verify alarm grid, lineup, and
     frame assignment for growth frame
     per word 1 [DLP-523]

[12] Verify TSI supplying clock to
     growth DT frame per word 2
     [DLP-545]

[13] Verify scan point assignment
     for growth DT per word 2
     [DLP-529]

[14] Verify SD point assignments for
     growth DT per words 3 and 4
     [DLP-528]

[15] Verify DTU to TSI port assignment
     per words 5, 6, 7, and 10
     [DLP-555]

AND → Page 4

VERIFY DT UT TRANSLATOR

```
      ┌─────────────────┐
     ╱ [16] Were         ╲                                                          No
    ╱  discrepancies      ╲ ─────────────────────────────────────────────────────────────────┐
    ╲  noted in Steps     ╱                                                                    │
     ╲ 10 through 15,    ╱                                                                     │
      ╲ Page 3          ╱                                                                      │
       └───────┬───────┘                                                                       │
               │ Yes                                                                           │
               ▼                                                                               │
┌──────────────────────┐                                                                       │
│ [17] Refer problem(s) │           ╱╲                      Office                             │
│ to installer          │          ╱  ╲ [18] Error          records                            │
│ to determine error    │─────────▶╲  ╱ was found  ─────────────────────────────────────────▶ │
│ and decide on         │           ╲╱  to be use                                             │
│ corrective action     │            │                                                        │
└──────────────────────┘            │ UT                                                      │
                                     │ entry                                                   │
                                     │ data                                                    │
                          ┌──────────┼────────┐                                               │
                          │          ▼          │                                              │
                          │  ┌──────────────────────┐                                         │
                          │  │ [19] Assist installer │                                         │
                          │  │ in taking appropriate │                                         │
                          │  │ corrective action as  │                                         │
                          │  │ determined by         │                                         │
                          │  │ regional engineering  │                                         │
                          │  │ and as approved by    │                                         │
                          │  │ office supervisor     │                                         │
                          │  └──────────┬───────────┘                                         │
                          │             │                                                      │
                          │             ▼                                                      │
                          │            ╱╲                                                      │
                    No    │           ╱  ╲ [20] Have all          Yes                          │
                          └──────────╱    ╲ UT data errors  ───────────────────┐              │
                                     ╲    ╱ now been                            │              │
                                      ╲  ╱ corrected                            ▼              ▼
                                       ╲╱                                      ─────────────────┤
```

VERIFY DT UT TRANSLATOR

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ENTRY WORD (OCTAL)	TABLE B								
	UT ENTRY DATA AND WORD CONFIGURATION								

Entry Word 0:

entry data octal output →

0	Y	0	0	0	0	0	0

bit position →

23 22 21 20	19 18 17 16	15 14 13 12	11 10 9 8	7 6	5 4	3 2	1 0

binary values →

0 0 0 0	X 0 0 0	0 0 0 0	0 0 0 0	0 0	0 0	0 0	0 0

MEMBER EQUIPAGE	MEMBER TYPE	MEMBER TYPE HARDWARE GENERATION	7	6	5	4	3	2	1	0
			DTU NO.							
			DTU SUBMEMBER EQUIPAGE							

Y = 0 for DT per SD-6G114-01 (J68952A)
 = 2 for DT per SD-6G114-02 (J68952B)

Entry Word 1:

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23 22 21 20	19 18 17 16	15 14 13 12	11 10 9 8	7 6 5 4	3 2 1 0

binary values →

Z Z Z Z	X X X X	X X X X	X X X X	X X X X	X X X X

ASSIGNED ALARM GRID NUMBER	FRAME LINEUP NUMBER	FRAME NUMBER

X...X = Converts to decimal frame info as reflected in office floor plan drawing

ZZZZ = Converts to decimal alarm grid number as reflected in office record drawings T-nnnn-Hn-400, 401, or 402 or equivalent

Y = Variable octal numbers

TABLE B (Contd)	
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 2:

entry data octal output	Y	Y	Y	Y	Y	Y	Y	Y
bit position	23 22 21	20 19 18	17	16 15 14	13 12	11 10 9	8 7 6	5 4 3	2 1 0
binary values	U U U	U U U	Z	X X X	X X	0 X	X X X	X X X	X X X

TSI MEMBER DELIVERING CLOCK TO THIS DT | SPC 0/1 | SP MEMBER NUMBER | L OR R MATRIX | SP ROW NUMBER | SP COLUMN NUMBER

BASE MISCELLANEOUS SCAN POINT

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

Z = TSI SPC number (0/1) which connects to growth DT

Entry Word 3:

entry data octal output	0	0	Y	Y	Y	Y	Y	Y
bit position	23 22 21	20 19 18	17	16 15 14	13 12	11 10 9	8 7 6	5 4 3	2 1 0
binary values	0 0 0	0 0 0	0	X X X	X X	0 X	X X X	X X X	X X X

SP MEMBER NUMBER | L OR R MATRIX | SP ROW NUMBER | SP COLUMN NUMBER

BASE MISCELLANEOUS DISTRIBUTOR NUMBER 1

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

VERIFY DT UT TRANSLATOR

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

TABLE B (Contd)

Entry Word 4:

entry data octal output →

| 0 | 0 | Y | Y | Y | Y | Y | Y |

bit position →

| 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

binary values →

| 0 | 0 | 0 | 0 | 0 | 0 | 0 | X | X | X | X | X | 0 | X | X | X | X | X | X | X | X | X | X | X |

| | SP MEMBER NUMBER | L OR R MATRIX | SP ROW NUMBER | SP COLUMN NUMBER |

| BASE MISCELLANEOUS DISTRIBUTOR NUMBER 2 |

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

Entry Word 5:

entry data octal output →

| 0 | Y | Y | Y | Y | Y | Y | Y |

bit position →

| 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

binary values →

| 0 | 0 | 0 | 0 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

| | TSI MEMBER NUMBER | SPC | TSI PORT NO. | TSI MEMBER NUMBER | SPC | TSI PORT NO. |

| DTU 1 TO TSI LEVEL ASSIGNMENT | DTU 0 TO TSI LEVEL ASSIGNMENT |

X...X = Converts to decimal DTU-TSI level assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

VERIFY DT UT TRANSLATOR

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 6

entry data octal output →

0	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	TSI MEMBER NUMBER	SPC	TSI PORT NO.	TSI MEMBER NUMBER	SPC	TSI PORT NO.
	DTU 3 TO TSI LEVEL ASSIGNMENT			DTU 2 TO TSI LEVEL ASSIGNMENT		

X...X = Converts to decimal DTU-TSI level assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

Entry Word 7

entry data octal output →

0	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	TSI MEMBER NUMBER	SPC	TSI PORT NO.	TSI MEMBER NUMBER	SPC	TSI PORT NO.
	DTU 5 TO TSI LEVEL ASSIGNMENT			DTU 4 TO TSI LEVEL ASSIGNMENT		

X...X = Converts to decimal DTU-TSI level assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

VERIFY DT UT TRANSLATOR

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 10

entry data octal output →

0	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	TSI MEMBER NUMBER	SPC	TSI PORT NO.	TSI MEMBER NUMBER	SPC	TSI PORT NO.
	DTU 7 TO TSI LEVEL ASSIGNMENT			DTU 6 TO TSI LEVEL ASSIGNMENT		

X...X = Converts to decimal DTU-TSI level assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

Entry Word 11

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

8	7	6	5	4	3	2	1	0	1	0
			DTU NO.						CONTROLLER NO.	
VERSION NUMBER										

XX = Version numbers of DT equipment as reflected in appropriate office record drawings and shipping information

Y...Y = Variable octal numbers

VER:UTMN;OPT(MISC),CUR: UTYN DT,   a = Member number of this DT

MEMN a, $\frac{SP}{b}$ $\frac{PORT}{c}$ b = SP2 member number associated with this DT

c = SP2 port assignment for this DT

VERIFY DT UT TRANSLATOR

records. Refer to entry word explanations in TABLE B,
Page 4, as required, for assistance in interpreting
specific data field. If it is determined that UT entry
data is in error, word change(s) may be required.

[1] Enter
VER:UTYPE:DT a!
a = Member number
    of growth
    associated DT

[2] Are message
format and member
identification
correct per
TABLE A

No →

[3] Determine
cause and
resolve; repeat
from Step 1

Yes ↓

[4] Using TTY
output, verify
unequipped status
of growth DTU per
octal word 0,
TABLE B [DLP-544]

[5] Is
equipage state
of growth DTU
set to 00

Yes → Page 2, Step 7

No ↓ Page 2

TABLE A

VER:UTMN;OPT(),CUR: FLN a,   UTYN DT,

MEMN b,   ME OPER,

ENTRY ADDRESS c,   ENTRY SIZE 10,

CUR
WORD 0 ___ ___ ___ ___
        ___ ___ ___ ___
WORD 10 ___ ___

a = Floor location number
b = Member number of growth associated DT
c = Starting octal address for unit
    type entry

VERIFY DTU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH DTU EQUIPAGE STATUS

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```
┌─────────────────────┐
│ [6] See CAUTION 1.  │
│ Using RC Form 701,  │
│ degrow submember    │
│ equipage to         │
│ unequipped [DLP-527]│
└─────────────────────┘
           │
           ▼
┌─────────────────────┐        ╱─────────────────╲
│ [7] Using TTY output│       ╱  [8] Does UT       ╲      Yes
│ and office records, │──────▶│  translator data    │────────┐
│ verify growth DTU   │       │  agree with office  │        │
│ version number per  │       ╲  records           ╱         │
│ octal word 11, TABLE│        ╲─────────────────╱          │
│ B, Page 6 [DLP-513] │              │                       │
└─────────────────────┘              │ No                    │
                                     ▼                       │
                          ┌─────────────────────┐            │
                          │ [9] See CAUTION 1.  │            │
                          │ Using RC Form 801,  │            │
                          │ perform functional  │            │
                          │ word change to      │───▶(  Page 3  )
                          │ correct UT          │
                          │ translator word 11  │
                          │ data [DLP-525]      │
                          └─────────────────────┘
```

CAUTION 1
Depending on local procedures, supervisory or TELCO engineering approval must be obtained prior to performing any data change

VERIFY DTU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH DTU EQUIPAGE STATUS

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[10] Using TABLE C, identify octal word
     associated with growth DTU

[11] Using TTY output and office records,
     verify growth DTU to TSI port
     assignment per octal word
     identified in Step 10 and located
     in TABLE B, Page 4 [DLP-555]

AND

[12] Does UT translator data agree with office record — Yes

No

[13] Refer problem to office supervisor/ installer to determine error and decide on corrective action

TABLE C	
DTU	OCTAL WORD
0, 1	5
2, 3	6
4, 5	7
6, 7	10

[14] Error was found to be in — Office record

UT entry data

[15] Take appropriate corrective action as determined by TELCO engineering/ regional engineering and as approved by office supervisor

VERIFY DTU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH DTU EQUIPAGE STATUS

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION
0	entry data octal output →
	bit position → 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
	binary values → (bits 15–0) X X X X X X X X X X X X X X X X
	7 6 5 4 3 2 1 0
	DTU NO.
	DTU SUBMEMBER EQUIPAGE

Entry word 0 octal output: Y Y Y Y Y Y Y Y

XX = 2-digit code giving status of DTUs
    00 = unequipped
    11 = operational

Y...Y = Variable octal numbers

5	entry data octal output → 0 Y Y Y Y Y Y Y
	bit position → 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
	binary values → 0 0 0 0 X X X X X X X X X X X X X X X X X X X X
	TSI MEMBER NUMBER	SPC	TSI PORT NO.	TSI MEMBER NUMBER	SPC	TSI PORT NO.
	DTU 1 TO TSI PORT ASSIGNMENT	DTU 0 TO TSI PORT ASSIGNMENT

X...X = Converts to decimal DTU-TSI port assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers

VERIFY DTU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH DTU EQUIPAGE STATUS

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TABLE B (Contd)

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION
6	entry data octal output →

| 0 | Y | Y | Y | Y | Y | Y | Y |

bit position → 23 22 21 20 | 19 18 17 16 15 14 | 13 | 12 11 10 | 9 8 7 6 5 4 | 3 | 2 1 0

binary values → 0 0 0 0 | X X X X X X | X | X X X | X X X X X X | X | X X X

| | TSI MEMBER NUMBER | SPC | TSI PORT NO. | TSI MEMBER NUMBER | SPC | TSI PORT NO. |

DTU 3 TO TSI PORT ASSIGNMENT | DTU 2 TO TSI PORT ASSIGNMENT

X...X = Converts to decimal DTU-TSI port assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers |
| 7 | entry data octal output →

| 0 | Y | Y | Y | Y | Y | Y | Y |

bit position → 23 22 21 20 | 19 18 17 16 15 14 | 13 | 12 11 10 | 9 8 7 6 5 4 | 3 | 2 1 0

binary values → 0 0 0 0 | X X X X X X | X | X X X | X X X X X X | X | X X X

| | TSI MEMBER NUMBER | SPC | TSI PORT NO. | TSI MEMBER NUMBER | SPC | TSI PORT NO. |

DTU 5 TO TSI PORT ASSIGNMENT | DTU 4 TO TSI PORT ASSIGNMENT

X...X = Converts to decimal DTU-TSI port assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y...Y = Variable octal numbers |

VERIFY DTU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH DTU EQUIPAGE STATUS

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

10

entry data octal output →

0	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	TSI MEMBER NUMBER	SPC	TSI PORT NO.	TSI MEMBER NUMBER	SPC	TSI PORT NO.

DTU 7 TO TSI PORT ASSIGNMENT	DTU 6 TO TSI PORT ASSIGNMENT

X...X = Converts to decimal DTU-TSI port   Y...Y = Variable octal numbers
assignment as reflected in office
record drawing T-nnnn-Hn-467 or
equivalent

11

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	V	V	V	V	V	V

8	7	6	5	4	3	2	1	0	
				DTU NO.					

VERSION NUMBER	

XX = Version numbers of DTUs as   Y...Y = Variable octal numbers
reflected in appropriate
office record drawings and
shipping information

VERIFY DTU TO TSI PORT ASSIGNMENT, VERSION NUMBER, AND GROWTH DTU EQUIPAGE STATUS

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```
┌─────────────┐      ╱────────────╲            ╱────────────╲
│ [1] Enter   │     ╱ [2] Was      ╲   Yes    ╱ [4] Does     ╲   Yes
│ message     │───▶ ╲ message       ╱────────▶ ╲ output       ╱──────────────────┐
│ per TABLE A │     ╱ accepted and  ╲          ╱ message indicate╲               │
└─────────────┘     ╲ diagnostic run╱          ╲ ATP on phases ╱                 │
                     ╲────────────╱             ╲ run          ╱                 │
                          │ No                    ╲──────────╱                   │
                          │                            │ No                      │
                          ▼                            ▼                         │
                  ┌──────────────┐            ╱──────────────╲                   │
                  │ [3] Analyze  │           ╱ [5] Is this    ╲   Yes   ┌──────────────┐
                  │ output message;│         ╲ growth job      ╱───────▶│ [7] Refer    │
                  │ repeat from   │          ╱ assisted by     ╲        │ trouble to   │
                  │ Step 1 with   │          ╲ installer       ╱        │ installer for│
                  │ corrected data│           ╲──────────────╱         │ resolution; ATP│──┐
                  └──────────────┘                  │ No               │ required     │  │
                                                    │                  └──────────────┘  │
                                                    ▼                                    │
                                          ┌──────────────────┐                           │
                                          │ [6] Clear VIF/DT/DIF│                         ▼
                                          │ diagnostic failure; │
                                          │ ATP required        │────────────────────────┤
                                          │ VIU — TOP 234-151-025│
                                          │ DTU — TOP 234-151-045│
                                          │ DIU — TOP 234-151-055│
                                          └──────────────────┘
```

TABLE A
DGN:a b,c d:GROWTH!
a = Unit type = VIF or DT or DIF b = Member number of growth   associated frame c = Submember type = VIU or DTU or DIU d = Submember number of growth unit

DIAGNOSE GROWTH VIU/DTU/DIU

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SUMMARY
Diagnose VIF/DT/DIF using controller 0. When ATP, repeat
diagnostic using controller 1.

[1] Enter
RST:a b,CONTR 0!
a = Unit type = VIF
    or DT or DIF
b = Member number
    of growth frame

[2] Was message
accepted and
did diagnostic
run

No →

[3] Analyze output
message; repeat
from Step 1 with
corrected data

Yes ↓

[4] Does output
message indicate
ATP and RESTORE
COMPLETED

Yes →

No ↓

[5] Clear DT/VIF/DIF
diagnostic failure;
ATP required
VIF = TOP 234-151-025
DT = TOP 234-151-045
DIF = TOP 234-151-055

Page 2

DIAGNOSE VIF/DT/DIF USING RESTORE MESSAGE

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```
┌─────────────────────┐
│ [6] Enter           │        ╱────────────╲              ╱────────────╲
│ RST:a b,CONTR 1!    │       ╱  [7] Was      ╲     Yes    ╱  [9] Does output╲     Yes
│ a = Unit type = VIF │──────▷   message       ──────────▷   message indicate  ──────────┐
│     or DT or DIF    │       ╲  accepted and  ╱            ╲  ATP and RESTORE ╱           │
│ b = Member number   │        ╲ did diagnostic╱             ╲ COMPLETED      ╱            │
│     of growth frame │         ╲   run       ╱               ╲             ╱             │
└─────────────────────┘          ╲──────────╱                 ╲──────────╱               │
                                      │ No                          │ No                  │
                                      ▽                             ▽                     │
                            ┌──────────────────┐         ┌──────────────────────┐         │
                            │ [8] Analyze       │         │ [10] Clear DT/VIF/DIF │         │
                            │ output message;   │         │ diagnostic failure;   │         ▽
                            │ repeat from       │         │ ATP required          │──────────┤
                            │ Step 6 with       │         │ VIF = TOP 234-151-025 │         │
                            │ corrected data    │         │ DT = TOP 234-151-045  │
                            └──────────────────┘         │ DIF = TOP 234-151-055 │
                                                         └──────────────────────┘
```

DIAGNOSE VIF/DT/DIF USING RESTORE MESSAGE

```
                             SUMMARY
          Diagnose TSI frame(s) controllers 0 and 1 specifying
          PHASE 20 and GROWTH. After ATP, restore controller
          to service.
```
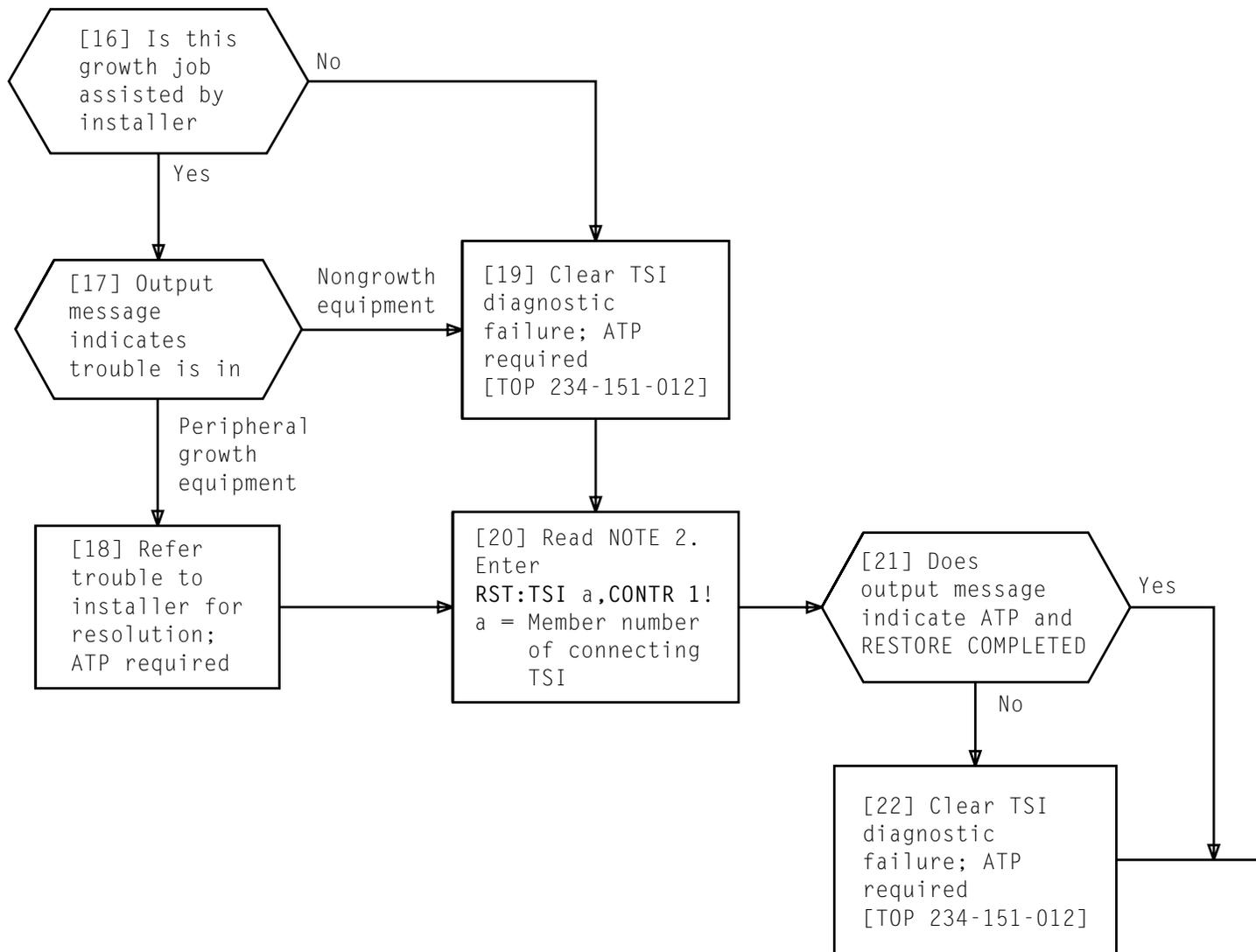
```
[1] Enter
DGN:TSI a,CONTR 0:PH b,GROWTH!
a = Member number of
    connecting TSI
b = 13 (for J4A001A) or
    20 (for J4A001B)
```

[2] Was message accepted and did diagnostic run

No → [3] Analyze output message; repeat from Step 1 using corrected data

Yes ↓

[4] Does output message indicate ATP on phases run

Yes → Page 2, Step 9

No ↓

Page 2

DIAGNOSE AND RESTORE CONNECTING TSI CONTROLLERS 0 AND 1

```
                                            No
  ┌─────────────────┐                    ┌──────────────────┐
 ╱  [5] Is this       ╲──────────────────┐│ [8] Clear TSI    │
│   growth job        │                  ││ diagnostic       │
│   assisted by       │                  ││ failure; ATP     │
 ╲  installer        ╱                   ││ required         │
  └────────┬────────┘                    ││  [TOP 234-151-012]│
           │ Yes                         │└──────────────────┘
```

[5] Is this growth job assisted by installer — No

[6] Output message indicates trouble is in — Nongrowth equipment → [8] Clear TSI diagnostic failure; ATP required [TOP 234-151-012]

Yes

Peripheral growth equipment

[7] Refer trouble to installer for resolution; ATP required

[9] Read NOTE 1. Enter
RST:TSI a,**CONTR 0!**
a = Member number of connecting TSI

[10] Does output message indicate ATP and RESTORE COMPLETED — Yes

No

[11] Clear TSI diagnostic failure; ATP required [TOP 234-151-012]

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NOTE 1
Restore input message will cause diagnostic to be run and controller to be restored if ATP

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DIAGNOSE AND RESTORE CONNECTING TSI CONTROLLERS 0 AND 1

```
┌─────────────────────────────┐
│ [12] Enter                  │
│ DGN:TSI a,CONTR 1:PH b,GROWTH! │          ⬡ [13] Was message        No      ┌──────────────────┐
│ a = Member number of        │─────────▶  accepted and did  ────────────▶ │ [14] Analyze     │
│     connecting TSI          │            diagnostic run               │ output message;  │
│ b = 13 (for J4A001A) or     │                   │                     │ repeat from      │
│     20 (for J4A001B)        │                   │                     │ Step 12 using    │
└─────────────────────────────┘                   │ Yes                 │ corrected data   │
                                                  │                     └──────────────────┘
                                                  ▼
                                         ⬡ [15] Does          Yes      ╭──────────────╮
                                          output message  ───────────▶ │ Page 4,      │
                                          indicate ATP              │ Step 20      │
                                          on phases run             ╰──────────────╯
                                                  │
                                                  │ No
                                                  ▼
                                           ╭──────────────╮
                                           │   Page 4     │
                                           ╰──────────────╯
```

DIAGNOSE AND RESTORE CONNECTING TSI CONTROLLERS 0 AND 1

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DIAGNOSE AND RESTORE CONNECTING TSI CONTROLLERS 0 AND 1

NOTE 2
Restore input
message will cause
diagnostic to be
run and controller
to be restored if
ATP

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SUMMARY
Convert octal digits of entry output data word 1 to binary.
Determine decimal number of grid, lineup and frame using
FIG. 1. Compare calculated data with office records and
floor plan drawing as required. If UT data does not agree
with office records, record discrepancies for later reference.

[1] See word 1 in entry output message

[2] See FIG. 1 for word 1 layout

[3] Convert all octal digits of word 1
in entry output to binary digits
and record

[4] Convert bits 20 through 23 to decimal
alarm grid number. See FIG. 1

[5] Convert bits 10 through 19 to
decimal frame lineup number.
See FIG. 1

[6] Convert bits 0 through 9 to
decimal frame number. See FIG. 1

Word 1 binary and
decimal conversions
completed

(AND)

[7] Get office floor plan
drawing for floor
containing growth frame

[8] Compare growth frame
and lineup information
on floor plan drawing
with decimal data determined
in Steps 5 and 6

(AND)

(Page 2)

entry data octal output →	Y	Y	Y	Y	Y	Y	Y	Y

bit position →	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →	Z	Z	Z	Z	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

ASSIGNED ALARM GRID NUMBER | LINEUP NUMBER | FRAME NUMBER

FRAME LINEUP NUMBER AND FRAME NUMBER INFORMATION

FIG. 1 — Entry Data Word 1 Layout

VERIFY ALARM GRID, LINEUP AND FRAME ASSIGNMENT FOR GROWTH FRAME

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[9] Obtain and record aisle number
    associated with growth frame
    from floor plan drawing

[10] Get office record
    T-nnnn-Hn-400, 401, 402,
    or equivalent. See
    NOTE 1 and TABLE A

[11] Locate alarm grid number
    determined on Page 1, Step 4,
    on office record

[12] Verify that aisle number
    recorded in Step 9 is
    identified with grid
    data in Step 11

AND

[13] Do grid, frame
and lineup numbers on
Page 1, Steps 4, 5,
and 6 agree with
office records

Yes

No

[14] For later
reference, record
any discrepancy
noted in Step 8,
Page 1; and Step 12

TABLE A	
ALARM GRIDS	DRAWING NUMBER
1 through 5	T-nnnn-Hn-400
6 through 10	T-nnnn-Hn-401
11 through 15	T-nnnn-Hn-402

NOTE 1
n = Office unique
    drawing
    identification
    number

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VERIFY ALARM GRID, LINEUP AND FRAME ASSIGNMENT FOR GROWTH FRAME

SUMMARY
Convert two leftmost octal digits of entry output data word 3 to binary. Determine PUB branch binary code for growth frame from TABLE A, Page 2, and office record T—nnnn—Hn—3840 or equivalent. If binary code does not agree with UT entry data, record discrepancy for later reference.

[1] See word 3 in entry
    output message

[2] See FIG. 1 for word 3
    layout

[3] Convert 2 leftmost octal
    digits of word 3 in entry
    output to binary digits

[4] Record bits 19 through 21

AND

Octal to
binary
conversion
completed

Page 2

entry data octal output	Y	Y	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	1	Z	Z	Z	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

PUB BRANCH NUMBER ASSIGNMENT — bits 21, 20, 19

SP MEMBER NUMBER — bits 16-12

L OR R MATRIX — bits 11, 10

SP ROW NUMBER — bits 9-4

SP COLUMN NUMBER — bits 3-0

MEMBER BASE MISCELLANEOUS SCAN NUMBER

FIG. 1 — Entry Data Word 3 Layout

VERIFY PUB BRANCH ASSIGNMENT FOR GROWTH FRAME

[5] Get office record drawing T-nnnn-Hn-3840 or equivalent. See NOTE 1

[6] Locate TABLE C on drawing. See FIG. 2

[7] Locate line on TABLE C containing growth frame

[8] Read left to **BUS 0 & 1** column and note PUB branch letter

AND

[9] See TABLE A. Note 3-digit code associated with PUB branch letter in Step 8

TABLE C							
LINE NO.	BUS 0&1	FROM	THROUGH	TO	TOTAL LENGTH	TOTAL LOAD	NOTE OR TABLE
1	A	PUBB		1/0 1		1	
2	B	PUBB	TS1 00,01,02,03,04,05,06,13,12,11,10,09,08,07,	TS1 28		44	1
3	C	PUBB	VIF 020,019;SP 03;VIF 018,017,016,014,015;SP	VIF 013		12	2
4	D	PUBB	VIF 010,009; VIF 008,007,006,004,005;	VIF 003		13	2
5	E	PUBB		TG1935.1		1	
6	F	PUBB	SP II 7,8,9,10	SPII 11		6	
7	G	PUBB	SP 01	SP 00		2	
8	H	PUBB	SP 2,12,13	SP 2 14		4	
9	K	PUBB	VIF 023,022,021,SP 04,VIF 025	VIF 024		6	2
10	L	PUBB					
11	M	PUBB					
12	R	PUBB					
13	T	PUBB					
14	V	PUBB					
15	W	PUBB					
16	X	PUBB					
LNN	BS	FROM		TO	TO LG	TO LD	NTTB

FIG. 2 — Typical Table C of 3840 Drawing

TABLE A	
PUB BRANCH LETTER	3-DIGIT CODE
A and B	000
C and D	001
E and F	010
G and H	011
K and L	100
M and R	101
T and V	110
W and X	111

NOTE 1
n = Office Unique drawing identification numbers

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VERIFY PUB BRANCH ASSIGNMENT FOR GROWTH FRAME

```
        ┌─────────────────┐
       ╱  [10] Does binary ╲
      ╱   code in Step 4,   ╲        Yes
     ╱    Page 1, agree      ╲──────────────┐
     ╲    with binary code   ╱              │
      ╲   noted on Page 2,  ╱               │
       ╲  Step 9          ╱                 │
        └────────┬────────┘                 │
                 │ No                        │
                 ▼                           │
        ┌─────────────────┐                 │
        │ [11] Record     │                 ▼
        │ discrepancy     │────────────────┤│
        │ for later       │                 │
        │ reference       │
        └─────────────────┘
```

SUMMARY
Call up RC Form 801 on CRT. Using TTY, fill in blank fields on form to identify and to correct selected digit(s) within a selected word of UT translator. Enter message, then verify inactive translations. Using assigned order number, activate the recent change then verify current translations.

[1] See CAUTION 1.
Enter
OP:RCFORM 801!

CRT displays RC
Form 801 per
FIG. 1, Page 2

Using TTY and CRT display of RC Form 801:
[2] Type **TST** in field following (**TRANS**)

[3] See TABLE A, Page 2. Determine translator
identifier for growth member requiring
UT translator change

[4] In field following **TRANSID**, type
unit type identifier determined
in Step 3

[5] Type recent change order number assigned to
this word change in field following **ORNU**

[6] In field following **ENTRY**, type
member number of growth member
requiring UT translator change

AND → Page 2

PERFORM FUNCTIONAL WORD CHANGE TO CORRECT

UT TRANSLATOR WORD THEN VERIFY

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Using TTY and CRT display of RC Form 801:

[7] In field following WORDNO, type decimal number of UT translator word to be changed

[8] Determine quantity of consecutive bits which span all bits requiring change in this UT translator word

[9] In field following SIZE, type decimal number of bits determined in Step 8. See example in FIG. 2, Page 3

[10] Determine bit position number (range of 0 to 23) identifying rightmost of the consecutive bits determined in Step 8

[11] In field following DISP, type decimal number determined in Step 10. See example in FIG. 2

AND → Page 4

```
RC:FUNC;CHG;OPT(TRANS),_ _ _:        TRANSID _ _ _ _,
ORNU _ _ _ _ _ _ _,
ENTRY _ _ _ _ _ _ _, WORDNO _ _ _ _,
SIZE _ _,              DISP _ _ _,
BINOCT _ _,
NEWDATA _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _,
OLDDATA _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _,
REMARKS _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _!
```

FIG. 1 — Blank RC Form 801

TABLE A	
GROWTH MEMBER REQUIRING UT TRANSLATOR CHANGE	TRANSLATOR IDENTIFIER (TRANSID)
Digroup Terminal	UTDT
Terminal Group	UTTGR
Voiceband Interface	UTVIF
Echo Suppressor Terminal	UTEST
Digital Interface	UTDIF
CCIS Data Set Frame	UTCCDS

PERFORM FUNCTIONAL WORD CHANGE TO CORRECT UT TRANSLATOR WORD THEN VERIFY

FIG. 2 — Example of Functional Word Change Considerations

PERFORM FUNCTIONAL WORD CHANGE TO CORRECT
UT TRANSLATOR WORD THEN VERIFY

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Using TTY and CRT display of
RC Form 801:

[12] Type **B** in field following
    BINOCT

[13] Read NOTE 1. Determine
    binary bits to be inserted
    into UT translator word to
    correct that word. See
    example in FIG. 2,
    Page 3

[14] In field following **NEWDATA**,
    type binary bits
    determined in Step 13. See
    example in FIG. 2

[15] Read NOTE 2. In field
    following **OLDDATA**, type
    current binary contents
    of only that portion of
    the UT translator word
    requiring change. See
    example in FIG. 2

[16] Enter form

AND

RC Form 801
filled in
and entered

Page 5

NOTES
1. Quantity of
  binary bits to be
  entered as **NEWDATA**
  must be equal to
  decimal number
  entered as **SIZE**
2. Quantity of
  binary bits to be
  entered as **OLDDATA**
  must be equal to
  quantity of
  bits entered as
  NEWDATA

**PERFORM FUNCTIONAL WORD CHANGE TO CORRECT
UT TRANSLATOR WORD THEN VERIFY**

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```
 _____
/                           \
|  [17] Was recent          |  Yes
|  change SUCCESSFULLY        |------>  ( Page 6 )
|  TESTED and                |
|  SUCCESSFULLY              |
|  BUFFERED [TABLE B]        |
_____/
          |
          | No
          v
 _____
|  [18] Analyze output      |
|  message for error        |
|  and repeat from          |
|  Step 1, Page 1,          |
|  with corrected           |
|  input data               |
|_____|
```

TABLE B
RC ORNU a SUCCESSFULLY TESTED
RC ORNU a SUCCESSFULLY BUFFERED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID b, ORNU a, ENTRY c,   WORDNO d, SIZE e,   DISP f, BINOCT B, NEWDATA g, OLDDATA h, REMARKS _! REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR AFTER THE MESSAGE IS ACTIVATED WORD 0   _____ _____ _____ _____   _____ _____ _____ _____ WORD 10   _____ _____ _____

a = RC order number
b = Translator identifier
c = Member number of growth frame
d = Number of word changed (decimal)
e = Number of bits changed (decimal)
f = Number of rightmost bit position (decimal)
g = New data inserted (binary)
h = Old data (binary)

PERFORM FUNCTIONAL WORD CHANGE TO CORRECT

UT TRANSLATOR WORD THEN VERIFY

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```
[19] Enter
RCACT:ORNU a!
a = RC order
    number
```

```
[20] Was recent
change **ACTIVATED**
[TABLE C]
```
Yes →

```
[22] Does output
message indicate
changed data field(s)
are correct for this
recent change
```
Yes

No ↓

```
[21] Determine
cause for reject;
repeat from
Step 19
```

No ↓

```
[23] If data changes
require corrections:
repeat from Step 1,
Page 1, using
corrected data
entries
```

TABLE C
RC ORNU a ACTIVATED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID b, ORNU a,
ENTRY c,   WORDNO d,
SIZE e,   DISP f,
BINOCT B,
NEWDATA g,
OLDDATA h,
REMARKS_____ !

```
a = RC order number
b = Translator identifier
c = Member number of growth frame
d = Number of word changed (decimal)
e = Number of bits changed (decimal)
f = Number of rightmost bit position (decimal)
g = New data inserted (binary)
h = Old data (binary)
```

PERFORM FUNCTIONAL WORD CHANGE TO CORRECT
UT TRANSLATOR WORD THEN VERIFY

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SUMMARY
Call up RC Form 701 on CRT. Using TTY, fill in blank fields
on form to degrow state of member equipage (ME) from OPER
to SGRO and/or from SGRO to GROW and/or from GROW to UNEQ.
Using assigned order numbers, activate each recent change
then verify completion of each change of state.

TABLE A

RC:UTYPE;CHG;OPT(EQP,DEGROW),TST: UTYN a,

ORNU b,

                       OLD   NEW
MEMN c,   ME (d , d),

                       OLD   NEW
SUBMEM ----,   SME (----, ----),

REMARKS------------------------------!

---

a = Unit type = DIF, DT, EST, TGR, or VIF
b = RC order number
c = Member number of degrowth frame
d = OPER, SGRO

01
(GROW) → (Page 6)

[1] What is
present state
of equipage bits
to be changed

10
(SGRO) → (Page 4)

11
(OPER)

[2] See CAUTION 1. Enter
OP:RCFORM 701! → (○→) → CRT displays RC Form 701 → **AND** → RC Form 701 filled in and entered → (Page 2)

[3] Fill in blanks on RC
Form 701, per TABLE A,
to degrow member to SGRO
state (10); then enter
message

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RECENT CHANGE MEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

```
 ┌─────────────────────┐           ┌─────────────────┐          ┌─────────────────┐         ┌───────────────────┐
 │ [4] Was recent change│          │ [6] Enter       │          │ [7] Was recent  │   No    │ [8] Determine cause│
 │ SUCCESSFULLY TESTED,  │  Yes     │ RCACT:ORNU a!   │          │ change ACTIVATED│────────▶│ for rejection;    │
 │ and SUCCESSFULLY      │ ───────▶ │ a = RC order    │ ───────▶ │ [TABLE C]       │         │ repeat from Step 6│
 │ BUFFERED [TABLE B]    │          │ number          │          │                 │         │ with correct input│
 └─────────────────────┘           └─────────────────┘          └─────────────────┘         │ message           │
         │ No                                                           │ Yes               └───────────────────┘
         ▼                                                              ▼
 ┌─────────────────────┐                                      ┌─────────────────┐
 │ [5] Analyze output  │                                      │    Page 3       │
 │ message for error;  │                                      └─────────────────┘
 │ repeat from         │
 │ Step 1, Page 1,     │
 │ with corrected      │
 │ input message       │
 └─────────────────────┘
```

TABLE B
RC ORNU b SUCCESSFULLY TESTED
RC ORNU b SUCCESSFULLY BUFFERED

RC:UTYPE;CHG;OPT(EQP,DEGROW),BUF: UTYN a,
 	
ORNU b,
               OLD   NEW
MEMN c,   ME   (OPER, SGRO),
 	
              OLD   NEW
SUBMEM ----,   SME (----, ----),
 	
REMARKS--------------------------------!

a = Unit type = DIF, DT, EST, TGR, or VIF b = RC order number c = Member number of degrowth frame

TABLE C
RC ORNU b ACTIVATED

RC:UTYPE;CHG;OPT(EQP,DEGROW),BUF: UTYN a,
 	
ORNU b,
               OLD   NEW
MEMN c,   ME   (OPER, SGRO),
 	
              OLD   NEW
SUBMEM ----,   SME (----, ----),
 	
REMARKS--------------------------------!

a = Unit type = DIF, DT, EST, TGR, or VIF b = RC order number c = Member number of degrowth frame

RECENT CHANGE MEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

[9] Does output message indicate all input entries are correct for this recent change

Yes → **[12] Is it necessary to change equipage state any further to GROW (01) or to UNEQ (00)**

No (from [9]) ↓

No (from [12]) → ⊣

Yes (from [12]) ↓ → (Page 4)

[10] If input entries are in error and require correcting, remove recent change from system using RC Form 700 → **[11] Repeat from Step 1, Page 1, using corrected message format**

RECENT CHANGE MEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

[13] See CAUTION 2. Enter
OP:RCFORM 701!

CRT displays
RC Form 701

AND

RC Form 701
filled in
and entered

[14] Fill in blanks on
RC Form 701 per TABLE D
to degrow member to GROW
(01); then enter message

[15] Was recent change
SUCCESSFULLY TESTED,
and **SUCCESSFULLY
BUFFERED** [TABLE E]

No → [16] Analyze
output message for
error; repeat
from Step 13 with
corrected input
message

Yes → Page 5

TABLE D
RC:UTYPE;CHG;OPT(EQP,DEGROW),TST:⠀⠀⠀⠀⠀UTYN a,
ORNU b,
⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀OLD⠀⠀⠀NEW
MEMN c,⠀⠀⠀⠀⠀⠀ME (d ,⠀⠀d),
⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀OLD⠀⠀⠀NEW
SUBMEM ----,⠀⠀⠀SME (----, ----),
REMARKS-----------------------------!
a = Unit type = DIF, DT, EST, TGR, or VIF b = RC order number c = Member number of degrowth frame d = SGRO, GROW

TABLE E
RC ORNU b SUCCESSFULLY TESTED
RC ORNU b SUCCESSFULLY BUFFERED
RC:UTYPE;CHG;OPT(EQP,DEGROW),BUF:⠀⠀⠀UTYN a,
ORNU b,
⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀OLD⠀⠀⠀NEW
MEMN c,⠀⠀⠀⠀⠀⠀ME⠀⠀(SGRO, GROW),
⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀⠀OLD⠀⠀⠀NEW
SUBMEM ----,⠀⠀⠀SME (----, ----),
REMARKS--------------------------------!
a = Unit type = DIF, DT, EST, TGR, or VIF b = RC order number c = Member number of degrowth frame

*CAUTION 2
Calling up
RC form will
cause all CRT
data to be
cleared*

RECENT CHANGE MEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

```
┌─────────────────┐                                      ┌──────────────────────┐
│ [17] Enter      │         ╱──────────╲        No        │ [19] Determine cause │
│ RCACT:ORNU a!   │───────▶╱ [18] Was    ╲──────────────▶│ for rejection;       │
│ a = RC order    │        ╲ recent change╱               │ repeat from Step 17  │
│    number       │         ╲ ACTIVATED  ╱                │ with correct         │
└─────────────────┘          ╲[TABLE F] ╱                 │ input message        │
                              ╲────────╱                  └──────────────────────┘
                                  │ Yes
                                  ▼
                          ╱──────────────╲        No       ┌──────────────────────┐        ┌──────────────────────┐
                         ╱ [20] Does output╲───────────────▶│ [21] If input entries│───────▶│ [22] Repeat from     │
                         ╲ message indicate ╱                │ are in error and     │        │ Step 13, Page 4,     │
                         ╲ all data fields  ╱                │ require correcting,  │        │ using corrected      │
                         ╱ are correct for  ╲                │ remove recent change │        │ message format       │
                         ╲ this recent change╱               │ from system using    │        └──────────────────────┘
                          ╲────────────────╱                 │ RC Form 700          │
                                  │ Yes                      └──────────────────────┘
                                  ▼
                          ╱──────────────╲       No
                         ╱ [23] Is it      ╲──────────────┤
                         ╲ necessary to     ╱
                         ╲ change equipage  ╱
                         ╱ state any        ╲
                         ╲ further to UNEQ   ╱
                          ╲(00)             ╱
                           ╲──────────────╱
                                  │ Yes
                                  ▼
                          ╭──────────────╮
                          │   Page 6     │
                          ╰──────────────╯
```

TABLE F
RC ORNU b ACTIVATED
RC:UTYPE;CHG;OPT(EQP,DEGROW),BUF: UTYN a,
ORNU b,
OLD   NEW
MEMN c,   ME   (SGRO, GROW),
OLD   NEW
SUBMEM ----,   SME (----, ----),
REMARKS--------------------------------!
a = Unit type = DIF, DT, EST, TGR, or VIF b = RC order number c = Member number of degrowth frame

[24] See CAUTION 3. Enter
OP:RCFORM 701!

CRT displays
RC Form 701

AND

RC Form 701
filled in
and entered

[25] Fill in blanks on
RC Form 701 per TABLE G
to degrow member to UNEQ
state (00); then enter
message

[26] Was recent
change **SUCCESSFULLY
TESTED**, and
**SUCCESSFULLY
BUFFERED** [TABLE H]

No → [27] Analyze
output message for
error; repeat
from Step 24 with
corrected input
message

Yes
↓
Page 7

TABLE G
RC:UTYPE;CHG;OPT(EQP,DEGROW),TST: UTYN a,
ORNU b,
OLD NEW
MEMN c,   ME (d,   d),
OLD NEW
SUBMEM ----,   SME (----, ----),
REMARKS------------------------------!
a = Unit type = DIF, DT, EST, TGR, or VIF
b = RC order number
c = Member number of degrowth frame
d = GROW, UNEQ

TABLE H
RC ORNU b SUCCESSFULLY TESTED
RC ORNU b SUCCESSFULLY BUFFERED
RC:UTYPE;CHG;OPT(EQP,DEGROW),BUF: UTYN a,
ORNU b,
OLD   NEW
MEMN c,   ME (GROW, UNEQ),
OLD   NEW
SUBMEM ----,   SME (----, ----),
REMARKS--------------------------------!
a = Unit type = DIF, DT, EST, TGR, or VIF
b = RC order number
c = Member number of degrowth frame

---

*CAUTION 3
Calling up
RC form will
cause all CRT
data to be
cleared*

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RECENT CHANGE MEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

```
┌─────────────┐         ┌───────────┐              ┌─────────────────┐      ┌─────────────────────────────────────────────────┐
│ [28] Enter  │        ╱ [29] Was    ╲      No      │ [30] Determine  │      │                    TABLE I                        │
│ RCACT:ORNU a!│──────▶│  recent      │────────────▶│ cause for       │      ├─────────────────────────────────────────────────┤
│ a = RC order│        ╲ change       ╱              │ rejection;      │      │ RC ORNU b ACTIVATED                               │
│   number    │         ╲ ACTIVATED  ╱               │ repeat from     │      │                                                   │
└─────────────┘          ╲[TABLE I] ╱                │ Step 28 with    │      │ RC:UTYPE;CHG;OPT(EQP,DEGROW),BUF:    UTYN a,       │
                          └────┬────┘                 │ corrected       │      │                                                   │
                               │ Yes                  │ input message   │      │ ORNU b,                                           │
                               ▼                      └─────────────────┘      │                            OLD   NEW              │
                          ╱─────────╲                                          │ MEMN c,          ME   (GROW, UNEQ),               │
                         ╱ [31] Does  ╲      Yes                               │                                                   │
                        │  output      │───────────┐                          │                            OLD   NEW              │
                        │  message     │           │                          │ SUBMEM ----,     SME  (----, ----),               │
                        │  indicate    │           │                          │                                                   │
                        │  all input   │           █                          │ REMARKS-------------------------------!           │
                        │  entries     │                                      ├─────────────────────────────────────────────────┤
                        │  are correct │                                      │ a = Unit type = DIF, DT, EST, TGR, or VIF         │
                        ╲ for this     ╱                                      │ b = RC order number                               │
                         ╲ recent     ╱                                       │ c = Member number of degrowth frame               │
                          ╲ change   ╱                                        └─────────────────────────────────────────────────┘
                           └────┬───┘
                                │ No
                                ▼
                    ┌───────────────────┐      ┌─────────────────┐
                    │ [32] If input     │      │ [33] Repeat from│
                    │ entries are in    │      │ Step 24, Page 6,│
                    │ error and require │─────▶│ using corrected │
                    │ correcting, remove│      │ message format  │
                    │ recent change from│      └─────────────────┘
                    │ system using      │
                    │ RC Form 700       │
                    └───────────────────┘
```

RECENT CHANGE MEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

SUMMARY
Call up RC Form 701 on CRT. Using TTY, fill in blank fields
on form to degrow state of submember equipage (SME) from
OPER to SGRO and/or from SGRO to GROW and/or from GROW to
UNEQ. Using assigned order numbers, activate each recent
change; then verify completion of each change of state.

TABLE A

RC:UTYPE,CHG;OPT(EQP,DEGROW),TST: UTYN a,

ORNU b,
                          OLD   NEW
MEMN c,   ME   (----, ----),

                          OLD   NEW
SUBMEM d,   SME (e ,   e),

REMARKS---------------------------------!

a = Unit type = VIF, DT, TSI, TGR, EST, or DIF
b = RC order number
c = Member number of degrowth frame
d = Submember name
    = T0PRTEQ(0 to 6) (for SPC 0, Ports 0-6)
    = T1PRTEQ(0 to 6) (for SPC 1, Ports 0-6)
    = VIUEQ(0 to 6) (for VIU 0-6)
    = DTUEQ(0 to 7) (for DTU 0-7)
    = ESEQ(0 to 14) (for ESU 0-14)
    = TMGRP(0 to 15) (for Terminal Units 0-15)
        = DIUEQ(0 to 31) (for DIU 0-31)
        = DIUSPQA (for Spare DIU 32)
        = DIUSPQB (for Spare DIU 33)
    OPER, SGRO

01
(GROW) → Page 7

[1] What is present state of equipage bits to be changed
10
(SGRO) → Page 4

11
(OPER)

RC Form
701 filled
in and
entered

[2] See CAUTION 1. Enter
OP:RCFORM 701!

CRT displays
RC Form 701

AND

[3] Fill in blanks on RC
Form 701 per TABLE A to
degrow submember to SGRO
state (10); then enter
message

Page 2

CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared

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RECENT CHANGE SUBMEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

```
┌─────────────────────────┐        ┌──────────────────────────┐
│  [4] Was recent         │        │  [5] Analyze output      │
│  change SUCCESSFULLY     │  No    │  message for error;      │
│  TESTED and        ─────────────▶ │  repeat from             │
│  SUCCESSFULLY           │         │  Step 2 with             │
│  BUFFERED [TABLE B]     │         │  corrected input         │
└─────────────────────────┘         │  data                    │
            │                       └──────────────────────────┘
            │ Yes
            ▼
┌─────────────────────────┐
│  [6] Enter              │
│  RCACT:ORNU a!          │      ╭──────────────╮
│  a = RC order    ───────────▶ │   Page 3     │
│        number           │     ╰──────────────╯
└─────────────────────────┘
```

┌───┐
| **TABLE B** |
├───┤
| RC ORNU b SUCCESSFULLY TESTED |
| RC ORNU b SUCCESSFULLY BUFFERED |
| RC:UTYPE,CHG;OPT(EQP,DEGROW),BUF: UTYN a, |
| |
| ORNU b, |
| OLD   NEW |
| MEMN c,   ME   (----, ----), |
| |
| OLD   NEW |
| SUBMEM d,   SME   (OPER, SGRO), |
| |
| REMARKS--------------------------------! |
├───┤
| a = Unit type = VIF, DT, TSI, TGR, EST, or DIF |
| b = RC order number |
| c = Member number of degrowth frame |
| d = Submember name |
| = T0PRTEQ(0 to 6) (for SPC 0 Ports 0-6) |
| = T1PRTEQ(0 to 6) (for SPC 1 Ports 0-6) |
| = VIUEQ(0 to 6) (for VIU 0-6) |
| = DTUEQ(0 to 7) (for DTU 0-7) |
| = ESEQ(0 to 14) (for ESU 0-14) |
| = TMGRP(0 to 15) (for Terminal Units 0-15) |
| = DIUEQ(0 to 31) (for DIU 0-31) |
| = DIUSPQA (for Spare DIU 32) |
| = DIUSPQB (for Spare DIU 33) |
└───┘

RECENT CHANGE SUBMEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

```
                                        ┌─────────────────────────────────────────────────────┐
                                        │                     TABLE C                          │
                                        ├─────────────────────────────────────────────────────┤
                                        │ RC ORNU b ACTIVATED                                  │
                                        │                                                      │
                                        │ RC:UTYPE,CHG;OPT(EQP,GROW),BUF:        UTYN a,        │
                                        │                                                      │
                                        │ ORNU b,                                              │
                                        │                            OLD   NEW                 │
                                        │ MEMN c,          ME  (----, ----),                   │
                                        │                                                      │
                                        │                            OLD   NEW                 │
                                        │ SUBMEM d,        SME (OPER, SGRO),                    │
                                        │                                                      │
                                        │ REMARKS-------------------------------!              │
                                        ├─────────────────────────────────────────────────────┤
                                        │ a = Unit type = VIF, DT, TSI, TGR, EST, or DIF       │
                                        │ b = RC order number                                  │
                                        │ c = Member number of degrowth frame                  │
                                        │ d = Submember name                                   │
                                        │     = TOPRTEQ(0 to 6) (for SPC 0, Ports 0-6)         │
                                        │     = T1PRTEQ(0 to 6) (for SPC 1, Ports 0-6)         │
                                        │     = VIUEQ(0 to 6) (for VIU 0-6)                    │
                                        │     = DTUEQ(0 to 7) (for DTU 0-7)                    │
                                        │     = ESEQ(0 to 14) (for ESU 0-14)                   │
                                        │     = TMGRP(0 to 15) (for Terminal Units 0-15)       │
                                        │     = DIUEQ(0 to 31) (for DIU 0-31)                  │
                                        │     = DIUSPQA (for Spare DIU 32)                     │
                                        │     = DIUSPQB (for Spare DIU 33)                     │
                                        └─────────────────────────────────────────────────────┘
```

Flowchart:

[7] Was recent change **ACTIVATED** [TABLE C] → No → [8] Determine cause for rejection; repeat from Step 6, Page 2, with correct input message

[7] → Yes → [9] Does output message indicate all input entries are correct for this recent change

[9] → Yes → [12] Is it necessary to change equipage state any further to GROW (01) or to UNEQ (00)

[12] → No → (terminator)

[12] → Yes → Page 4

[9] → No → [10] If input entries are in error and require correcting, remove recent change from system using RC Form 700 → [11] Repeat from Page 1, Step 2, using corrected message format

[13] See CAUTION 2. Enter
OP:RCFORM 701!

CRT displays
RC Form 701

RC Form 701
filled in
and entered

AND

Page 5

[14] Fill in blanks on RC Form 701
per TABLE D to degrow submember
to GROW state (01); then enter
message

TABLE D
RC:UTYPE;CHG;OPT(EQP,DEGROW),TST: UTYN a,
ORNU b,
OLD   NEW
MEMN c,   ME   (----, ----),
OLD   NEW
SUBMEM d,   SME (e ,   e),
REMARKS--------------------------------!

a = Unit type = VIF, DT, TSI, TGR, EST, or DIF
b = RC order number
c = Member number of degrowth frame
d = Submember name
    = TOPRTEQ(0 to 6) (for SPC 0 Ports 0-6)
    = T1PRTEQ(0 to 6) (for SPC 1 Ports 0-6)
    = VIUEQ(0 to 6) (for VIU 0-6)
    = DTUEQ(0 to 7) (for DTU 0-7)
    = ESEQ(0 to 14) (for ESU 0-14)
    = TMGRP(0 to 15) (for Terminal Units 0-15)
    = DIUEQ(0 to 31) (for DIU 0-31)
    = DIUSPQA (for Spare DIU 32)
    = DIUSPQB (for Spare DIU 33)
e = DGRO, GROW

RECENT CHANGE SUBMEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

```
 _____                _____
/                \              |                |
| [15] Was recent |     No       | [16] Analyze output |
| change SUCCESSFULLY|----------->| message for error; |
| TESTED and       |              | repeat from        |
| SUCCESSFULLY     |              | Step 13, Page 4,   |
\ BUFFERED [TABLE E]/             | with corrected     |
 _____/              | input data         |
        |                        |_____|
        | Yes
        v
 _____
|                |
| [17] Enter     |          _____
| RCACT:ORNU a!  |-------->(  Page 6    )
| a = RC order   |          _____/
|    number      |
|_____|
```

<table>
<tr><td colspan="3" align="center">TABLE E</td></tr>
</table>

RC ORNU b SUCCESSFULLY TESTED

RC ORNU b SUCCESSFULLY BUFFERED

RC:UTYPE,CHG;OPT(EQP,DEGROW),BUF: UTYN a,

ORNU b,

                  OLD   NEW

MEMN c,   ME (----, ----),

                  OLD   NEW

SUBMEM d,   SME (SGRO, GROW),

REMARKS--------------------------------!

a = Unit type = VIF, DT, TSI, TGR, EST, or DIF
b = RC order number
c = Member number of degrowth frame
d = Submember name
     = T0PRTEQ(0 to 6) (for SPC 0 Ports 0-6)
     = T1PRTEQ(0 to 6) (for SPC 1 Ports 0-6)
     = VIUEQ(0 to 6) (for VIU 0-6)
     = DTUEQ(0 to 7) (for DTU 0-7)
     = ESEQ(0 to 14) (for ESU 0-14)
     = TMGRP(0 to 15) (for Terminal Units 0-15)
     = DIUEQ(0 to 31) (for DIU 0-31)
     = DIUSPQA (for Spare DIU 32)
     = DIUSPQB (for Spare DIU 33)

TABLE F

```
RC ORNU b ACTIVATED

RC:UTYPE,CHG;OPT(EQP,GROW),BUF:          UTYN a,

ORNU b,
                         OLD   NEW
MEMN c,          ME   (----, ----),

                         OLD   NEW
SUBMEM d,        SME  (SGRO, GROW),

REMARKS-------------------------------!
```

```
a = Unit type = VIF, DT, TSI, TGR, EST, or DIF
b = RC order number
c = Member number of degrowth frame
d = Submember name
     = TOPRTEQ(0 to 6) (for SPC 0 Ports 0-6)
     = T1PRTEQ(0 to 6) (for SPC 1 Ports 0-6)
     = VIUEQ(0 to 6) (for VIU 0-6)
     = DTUEQ(0 to 7) (for DTU 0-7)
     = ESEQ(0 to 14) (for ESU 0-14)
     = TMGRP(0 to 15) (for Terminal Units 0-15)
     = DIUEQ(0 to 31) (for DIU 0-31)
     = DIUSPQA (for Spare DIU 32)
     = DIUSPQB (for Spare DIU 33)
```

[24] See CAUTION 3. Enter
     OP:RCFORM 701!

CRT
displays
RC Form
701

RC Form 701
filled in
and
entered

AND

Page 8

[25] Fill in blanks on
     RC Form 701 per TABLE G
     to degrow submember to UNEQ
     state (00); then enter
     message

```
                         TABLE G
RC:UTYPE;CHG;OPT(EQP,DEGROW),TST:        UTYN a,

ORNU b,
                              OLD  NEW
MEMN c,          ME   (----, ----),


                              OLD  NEW
SUBMEM d,        SME ( e ,   e ),

REMARKS-------------------------------!

a = Unit type = VIF, DT, TSI, TGR, EST, or DIF
b = RC order number
c = Member number of degrowth frame
d = Submember name
        = TOPRTEQ(0 to 6) (for SPC 0, Ports 0-6)
        = T1PRTEQ(0 to 6) (for SPC 1, Ports 0-6)
        = VIUEQ(0 to 6) (for VIU 0-6)
        = DTUEQ(0 to 7) (for DTU 0-7)
        = ESEQ(0 to 14) (for ESU 0-14)
        = TMGRP(0 to 15) (for Terminal Units 0-15)
        = DIUEQ(0 to 31) (for DIU 0-31)
        = DIUSPQA (for Spare DIU 32)
        = DIUSPQB (for Spare DIU 33)
e = GROW, UNEQ
```

RECENT CHANGE SUBMEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

```
┌─────────────────────────┐      ┌──────────────────────┐
│  [26] Was recent        │      │ [27] Analyze output  │
│  change SUCCESSFULLY     │  No  │ message for error;   │
│  TESTED and             ├─────►│ repeat from          │
│  SUCCESSFULLY           │      │ Step 24, Page 7,     │
│  BUFFERED [TABLE H]     │      │ with corrected       │
└──────────┬──────────────┘      │ input data           │
           │ Yes                  └──────────────────────┘
           ▼
┌─────────────────────┐
│  [28] Enter         │         ╭──────────────╮
│  RCACT:ORNU a!      ├────────►│   Page 9     │
│  a = RC order       │         ╰──────────────╯
│      number         │
└─────────────────────┘
```

TABLE H
RC ORNU b SUCCESSFULLY TESTED
RC ORNU b SUCCESSFULLY BUFFERED
RC:UTYPE,CHG;OPT(EQP,DEGROW),BUF: UTYN a,
ORNU b,
OLD   NEW
MEMN c,   ME   (----, ----),
OLD   NEW
SUBMEM d,   SME   (GROW, UNEQ),
REMARKS-------------------------------!

```
a = Unit type = VIF, DT, TSI, TGR, EST, or DIF
b = RC order number
c = Member number of degrowth frame
d = Submember name
      = T0PRTEQ(0 to 6) (for SPC 0, Ports 0-6)
      = T1PRTEQ(0 to 6) (for SPC 1, Ports 0-6)
      = VIUEQ(0 to 6) (for VIU 0-6)
      = DTUEQ(0 to 7) (for DTU 0-7)
      = ESEQ(0 to 14) (for ESU 0-14)
      = TMGRP(0 to 15) (for Terminal Units 0-15)
      = DIUEQ(0 to 31) (for DIU 0-31)
      = DIUSPQA (for Spare DIU 32)
      = DIUSPQB (for Spare DIU 33)
```

RECENT CHANGE SUBMEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

```
┌─────────────────────────────┐
│ [30] Determine              │
│ cause for rejection         │
│ and repeat from             │
│ Step 28, Page 8,            │
│ with correct input          │
│ data                        │
└─────────────────────────────┘
       ▲
      No
⬡ [29] Was recent
  change ACTIVATED
  [TABLE I]
       │
      Yes
       ▼
⬡ [31] Does output
  message indicate        Yes ──┤
  all input entries
  are correct for this
  recent change
       │
      No
       ▼
┌─────────────────────────────┐     ┌─────────────────────────────┐
│ [32] If input entries       │     │ [33] Repeat from            │
│ are in error and            │ ──▶ │ Step 24, Page 7,            │
│ require correcting,         │     │ using corrected             │
│ remove recent change        │     │ message format              │
│ from system using           │     │                             │
│ RC Form 700                 │     │                             │
└─────────────────────────────┘     └─────────────────────────────┘
```

TABLE I
RC ORNU b ACTIVATED
RC:UTYPE,CHG;OPT(EQP,GROW),BUF: UTYN a,
ORNU b,
OLD   NEW
MEMN c,   ME (----, ----),
OLD   NEW
SUBMEM d,   SME (GROW, UNEQ),
REMARKS--------------------------------!

```
a = Unit type = VIF, DT, TSI, TGR, EST, or DIF
b = RC order number
c = Member number of degrowth frame
d = Submember name
    = TOPRTEQ(0 to 6) (for SPC 0, Ports 0-6)
    = T1PRTEQ(0 to 6) (for SPC 1, Ports 0-6)
    = VIUEQ(0 to 6) (for VIU 0-6)
    = DTUEQ(0 to 7) (for DTU 0-7)
    = ESEQ(0 to 14) (for ESU 0-14)
    = TMGRP(0 to 15) (for Terminal Units 0-15)
    = DIUEQ(0 to 31) (for DIU 0-31)
    = DIUSPQA (for Spare DIU 32)
    = DIUSPQB (for Spare DIU 33)
```

RECENT CHANGE SUBMEMBER EQUIPAGE USING RC FORM 701 (DEGROW)

[1] Note word in output message
    containing SD or pulse point
    to be verified

[2] Convert six rightmost digits of
    word to be verified to decimal
    SP member, row, and column
    numbers using FIG. 1. Record results

[3] Get office record
    T-nnnn-Hn-462-xx or equivalent.
    xx = SP member number determined
    in Step 2

AND

[4] Fourth right-most octal digit of word to be verified is

0 or 1 → Page 2

2 or 3

[5] Add 64 decimal to SP row
    number determined in Step 2.
    Record new result

AND → Page 2, Step 8

[6] Search ROW and COL listing in office
    record and locate row and column
    previously recorded

entry data
octal output →

		Y			Y			Y				Y				Y				Y	

bit position →

18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

FIG. 1 — Entry Data Word Layout

VERIFY SD OR PULSE POINT ASSIGNMENTS FOR GROWTH FRAME

[7] Search ROW and COL listing in office record and locate row and column previously recorded

[8] Does associated UNIT TYPE and FRM NO agree with growth frame

Yes

No

[9] Record discrepancy for later use

[10] Have all SD or PP assignments been verified for growth frame

Yes

No

[11] Repeat from Page 1, Step 1, for each SD or PP to be verified

[1] Note word in output message
    containing miscellaneous scan
    point to be verified

[2] Convert six rightmost digits of
    word to be verified to decimal SP
    member, row, and column numbers
    using FIG. 1. Record results

[3] Get office record T-nnnn-Hn-461-xx
    or equivalent.
    xx = SP member number determined
    in Step 2

AND

[4] Fourth
rightmost octal
digit of word
to be verified
is

0 or 1 → Page 2

2 or 3

[5] Add 64 decimal to SP row
    number determined in Step 2.
    Record new result

AND → Page 2, Step 8

[6] Search ROW and COL listing in
    office record and locate row and
    column previously recorded

entry data
octal output →

			Y		Y		Y		Y		Y		Y	

bit position →

18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

X	X	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

FIG. 1 — Entry Data Word Layout

VERIFY MISCELLANEOUS SCAN POINT ASSIGNMENT(S) FOR GROWTH FRAME

[7] Search ROW and COL listing in office record and locate row and column previously recorded

[8] Does associated UNIT TYPE and FRM NO agree with growth frame

Yes

No

[9] Record discrepancy for later use

[10] Have all miscellaneous scan point assignments been verified for growth frame

Yes

No

[11] Repeat from Page 1, Step 1, for each additional scan point to be verified

SUMMARY
Convert octal digits representing VIU/DTU/DIU information of entry output word(s) to decimal. Compare entry output data against office records. If entry data and office records do not agree, record discrepancies for later use. If this procedure is used as a result of a VIF/DT/DIF frame growth, repeat procedure for each VIU/DTU/DIU being equipped.

[1] Identify octal word being verified for VIU/DTU/DIU in entry output message

[2] See FIG. 1, Page 2, for word layout

[3] Convert the necessary octal digits in word identified in Step 1 to binary digits and record

[4] Convert the VIU/DTU/DIU number to decimal and record

[5] Convert the VIF/DT/DIF member number to decimal and record

[6] Convert the equipage type (VIF/DT/DIF) to decimal and record. See NOTE 1

AND

Octal to decimal conversion completed

Page 3

NOTE 1
Bits 15 through 12 set to 0011 for VIF or 0001 for DT or 0100 for DIF

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VERIFY TSI PORT TO VIU/DTU/DIU ASSIGNMENT

entry data octal output →	0		0		Y		Y		Y		Y		Y		Y	
bit position →	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values →	0	0	0	0	0	0	0	0	Z	Z	Z	Z	X	X	X	X	X	X	X	X	X	X	X	X

EQUIPAGE TYPE | VIF/DT/DIF MEMBER NUMBER | VIU/DTU/DIU NUMBER

TSI PORT TO VIU/DTU/DIU ASSIGNMENT

FIG. 1 — Office Generic Word Layout for TSI Port Assignment

[7] Get office record containing TSI port
    to VIU/DTU/DIU assignments

[8] Locate line on office record containing
    TSI frame, SPC, and port being verified

[9] Locate VIU/DTU/DIU number on line
    found in Step 8

[10] Compare numbers found in Step 4, Page 1; and
     Step 9. Note any discrepancy for later use

[11] Locate VIF/DT/DIF member number on
     line found in Step 8

[12] Compare numbers found in Step 5, Page 1; and
     Step 11. Note any discrepancy for later use

AND

[13] For later reference, record any discrepancies noted in Steps 10 and 12

[14] Is this procedure being done as a result of a VIF/DT/DIF growth

No

Yes

[15] Repeat from Step 1, Page 1, for each equipped VIU/DTU/DIU

VERIFY TSI PORT TO VIU/DTU/DIU ASSIGNMENT

SUMMARY
Verify from entry output message that growth VIU submember
bits are set to zero. If UT data is in error, note
discrepancy for later use.

[1] See octal word 0 in entry
    output message

[2] See FIG. 1 for word 0 layout

[3] Convert five rightmost octal digits
    of word 0 in entry output to
    binary digits

[4] Using TABLE A, identify bits associated
    with growth VIU

[5] Check that equipage bits identified
    in Step 4 are set to zero
    (unequipped) in entry output

AND

[6] For later
reference,
note value of
bits if other
than 00

TABLE A	
GROWTH VIU	ASSOCIATED BITS
0	0, 1
1	2, 3
2	4, 5
3	6, 7
4	8, 9
5	10, 11
6	12, 13

entry data
octal output →

| 1 | 0 | 6 | Y | Y | Y | Y | Y |

bit position →

| 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

binary values →

| X | X | X | X | X | X | X | X | X | X | X | X | X | X |

| 6 | 5 | 4 | 3 | 2 | 1 | 0 |

VIU NO.

VIU SUBMEMBER EQUIPAGE

FIG. 1 — Entry Data Word 0 Layout

SUMMARY
Call up RC Form 801 on CRT. Using TTY, fill in blank fields
on form to identify and to change terminal unit loop
data within the selected word of the TGR UT translator.
Enter message; then verify inactive translations. Using the
assigned order number, activate the recent change; then
verify current translations.

TABLE B

RC:FUNC;CHG;OPT(TRANS),a: TRANSID b,

ORNU c,

ENTRY d,   WORDNO e,

SIZE f,   DISP g,

BINOCT h,

NEWDATA i,

OLDDATA j,

REMARKS_____ !

a = TST	f = 1
b = UTTGR	g = 23
c = RC order number	h = B
d = Member number of TGR	i = 1
containing growth	j = 0
terminal unit	
e = UT decimal word number	
previously recorded	
in Step 2	

[1] See CAUTION 1. Enter
    OP:RCFORM 801!

CRT displays
RC Form 801
per TABLE B

[2] Determine from TABLE A, UT decimal
    word corresponding to growth
    terminal unit and record

AND

Page 2

[3] Using TTY and CRT display of
    RC Form 801: fill in blank
    fields on RC Form 801 per
    TABLE B and enter message

TABLE A			
GROWTH TERMINAL UNIT	UT DECIMAL WORD	GROWTH TERMINAL UNIT	UT DECIMAL WORD
0	18	8	50
1	22	9	54
2	26	10	58
3	30	11	62
4	34	12	66
5	38	13	70
6	42	14	74
7	46	15	78

CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT LOOP DATA FOR SELF-SYNCHRONIZATION

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```
          ┌─────────────────────┐         ┌──────────────────────────────────────────────────────┐
         ╱  [4] Was recent      ╲          │                       TABLE C                        │
        ╱   change SUCCESSFULLY   ╲         ├──────────────────────────────────────────────────────┤
       ╱    TESTED and            ╲  Yes    │ RC ORNU a SUCCESSFULLY TESTED                         │
       ╲    SUCCESSFULLY          ╱───────►  ( Page 3 )  │ RC ORNU a SUCCESSFULLY BUFFERED          │
        ╲   BUFFERED [TABLE C]   ╱          │                                                      │
         ╲─────────────────────╱           │ RC:FUNC;CHG;OPT(TRANS),BUF:   TRANSID UTTGR,          │
                    │                       │ ORNU a,                                              │
                   No                       │ ENTRY b,             WORDNO  c,                       │
                    ▼                       │ SIZE 1,              DISP   23,                       │
```

[4] Was recent change **SUCCESSFULLY TESTED** and **SUCCESSFULLY BUFFERED** [TABLE C] — Yes → Page 3

No ↓

[5] Analyze output message for error; repeat from Step 1 with corrected input data

---

TABLE C

RC ORNU a SUCCESSFULLY TESTED

RC ORNU a SUCCESSFULLY BUFFERED

RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR,
ORNU a,
ENTRY b,   WORDNO c,
SIZE 1,   DISP   23,
BINOCT B,
NEWDATA 1,
OLDDATA 0,
REMARKS _!
REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR
AFTER THE MESSAGE IS ACTIVATED

WORD 0   _____ _____ _____ _____
           _____ _____ _____ _____
WORD 10   _____ _____ _____

---

a = RC order number
b = Member number of TGR containing growth
    terminal unit
c = UT decimal word number previously recorded in
    Step 2, Page 1

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT LOOP DATA FOR SELF-SYNCHRONIZATION

Flowchart

[6] Enter
RCACT:ORNU a!
a = RC order
number

↓

[7] Was recent change **ACTIVATED** [TABLE D] —— Yes → **[9]** Does output message indicate changed data field(s) are correct for this recent change —— Yes → ▌

No ↓

[8] Determine cause for reject; repeat from Step 6

[9] No ↓

[10] If data changes require corrections, repeat from Step 1 using corrected data entries —— ▌

TABLE D

TABLE D
RC ORNU a ACTIVATED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR, ORNU a,
ENTRY b,   WORDNO c,
SIZE 1,   DISP 23,
BINOCT B,
NEWDATA 1,
OLDDATA 0,
REMARKS_____ !
a = RC order number
b = Member number of TGR containing growth terminal unit
c = UT decimal word number previously recorded in Step 2, Page 1

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT LOOP DATA FOR SELF-SYNCHRONIZATION

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SUMMARY
Convert octal digits representing TSI information of entry
output word to decimal. Compare entry output data against
office records. If entry output data and office records do
not agree, record discrepancies for later reference. If this
procedure is done as a result of a VIF addition, repeat
procedure for each equipped VIU.

[1] Identify octal word being verified in output message

[2] See FIG. 1 for typical word layout

[3] See NOTE 1. Convert the necessary octal digits in
    entry output pertaining to TSI port assignment to
    binary digits and record

AND → (Page 2)

[4] Convert bits 0 through 2 for even numbered VIU(s)
    or bits 10 through 12 for odd numbered VIU(s) to
    decimal TSI port number and record

[5] Record bit 3 for even numbered VIU(s) or bit 13
    for odd numbered VIU(s)

entry data octal output →	0			Y		Y		Y		Y		Y		Y		Y	
bit position →	23 22 21 20	19 18 17 16 15 14	13	12 11 10	9 8 7 6 5 4	3	2 1 0
binary values →	0 0 0 0	X X X X X X	X	X X X	X X X X X X	X	X X X
		TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.	TSI MEMBER NUMBER	SPC 0/1	TSI PORT NO.
		VIU 1, 3, OR 5 TO TSI LEVEL ASSIGNMENT			VIU 0, 2, 4 OR 6 TO TSI LEVEL ASSIGNMENT		

FIG. 1 — Typical Word Layout Pertaining to TSI Port Assignment

NOTE 1
For even numbered
VIU(s), the four
rightmost digits
will be converted
and for odd numbered
VIU(s), the five
leftmost digits will
be converted

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VERIFY GROWTH VIU TO TSI PORT ASSIGNMENT

[6] Convert bits 4 through 9 for even
    numbered VIU(s) or bits 14 through
    19 for odd numbered VIU(s) to decimal
    TSI member number and record

[7] Get office record containing
    VIU to TSI port assignments

[8] Locate line on office record
    containing the VIF frame
    and unit being grown

    AND → Page 3

[9] Locate the TSI port number value
    on line found in Step 8

[10] Compare value found in Step 9
     with TSI port number recorded
     in Step 4, Page 1, and note any
     discrepancy for later use

VERIFY GROWTH VIU TO TSI PORT ASSIGNMENT

[11] Locate the SPC value on line
found on Step 8, Page 2

[12] Compare value found in Step 11 with SPC
number recorded on Step 5, Page 1, and note
any discrepancy for later use

[13] Locate the TSI member number value
on line found in Step 8

[14] Compare value found in Step 13 with TSI
member number recorded in Step 6, Page 2,
and note any discrepancy for later use

AND

[15] For later
reference, record
any discrepancy
noted in Steps 10
(Page 2), 12, or 14

[16] Is this
procedure being
done as a result
of VIF addition

No

Yes

[17] Repeat
from Step 1,
Page 1, for
each additional
equipped VIU

VERIFY GROWTH VIU TO TSI PORT ASSIGNMENT

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```
[1] Enter
VER:UTYPE:EST a,SME b!
a = Member number of
    growth associated
    EST
b = Growth SME index
    number per TABLE A
```

```
[2] Is SME
marked UNEQ
per TABLE B
```

Yes

No

```
[3] Read CAUTION 1.
Using RC Form 701,
degrow submember
equipage to
unequipped
 [DLP-527]
```

TABLE B		
VER:UTMN;OPT(SME),CUR: FLN a, UTYN EST,		
MEMN b, ME OPER,		
SUBMEM c, SME UNEQ,		
a = Floor location number		
b = Member number of growth associated EST		
c = Growth SME index number		

TABLE A															
SME	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
INDEX NO.	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142

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VERIFY UNEQUIPPED STATUS OF GROWTH ESU

[1] Enter
RST:EST a,CONTR 0!
a = Member number
    of growth
    associated EST

[2] Was message
accepted and
did diagnostic
run

No → [3] Analyze
output message;
repeat from Step
1 with
corrected data

Yes ↓

[4] Does output
message indicate
ATP and RESTORE
COMPLETED

No → [5] Is this
growth job
assisted by
installer

Yes → [6] Output
message
indicates
trouble is in

Growth equipment → [7] Refer troubles
to installer for
resolution; ATP
required

[4] Yes ↓

Page 2

[5] No ↓

[6] Nongrowth equipment ↓

[8] Clear EST
diagnostic failure;
ATP required
[TOP 234-151-050]

→ Page 2

[7] → Page 2

[9] Enter
RST:EST a,CONTR 1!
a = Member number
    of growth
    associated EST

[10] Was message
accepted and
did diagnostic
run

No

[11] Analyze
output message;
repeat from
Step 9 with
corrected data

Yes

[12] Does output
message indicate
ATP and RESTORE
COMPLETED

No

[13] Is this
growth job
assisted by
installer

Yes

[14] Output
message
indicates
trouble is in

Growth
equipment

[16] Refer troubles
to installer for
resolution; ATP
required

Yes

No

Nongrowth
equipment

[15] Clear EST
diagnostic failure;
ATP required
  [TOP 234-151-050]

DIAGNOSE GROWTH EST USING RESTORE MESSAGE

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[1] Enter
DGN:EST a,ESU b!
a = Member number of
    growth/degrowth EST
b = Submember number
    of ESU

[2] Was message
accepted and did
diagnostic run

Yes

[4] Does output
message indicate
ATP on phases
run

Yes

No

No

[3] Analyze
output message;
repeat from Step 1
with corrected
data

[5] Is this
growth job
assisted by
installer

No

Yes

[6] Output
message indicates
trouble is in

Nongrowth
equipment

[7] Clear ESU
diagnostic failure;
ATP required
[TOP 234-151-050]

Growth
equipment

[8] Refer trouble
to installer for
resolution: ATP
required

DIAGNOSE OPERATIONAL ESU

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[1] Enter
DGN:EST a,ESU b:GROWTH!
a = Member number
    of growth associated EST
b = Submember number
    of growth ESU

[2] Was message
accepted and did
diagnostic run

Yes

No

[4] Does output
message indicate
ATP on phases
run

No

Yes

[5] Is this
growth job
assisted by
installer

Yes

No

[7] Refer
trouble to
installer for
resolution; ATP
required

[3] Analyze
output message;
repeat from Step 1
with corrected
data

[6] Clear ESU
diagnostic
failure; ATP
required
 [TOP 234-151-050]

DIAGNOSE GROWTH ESU

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[1] Is this procedure entered from another verify procedure

No →

[2] Enter

VER:UTYPE:EST a!

a = Member number of growth associated EST

Yes

[3] Are message format and member identification correct per TABLE A

No →

[4] Determine cause and resolve; repeat from Step 2

Yes

[5] Using FIG. 1 and FIG. 2, Page 2, determine octal word associated with growth ESU

[6] Note contents of word in entry output message containing version data to be verified

[7] For growth ESU, convert octal digits to version number per word obtained in Step 5 and record

[8] Obtain from shipping information or installer, LDI issue number for growth ESU

AND → Page 3

TABLE A

VER:UTMN;OPT( ),CUR: FLN a, UTYN EST,

MEMN b,   ME OPER,

ENTRY ADDRESS c,   ENTRY SIZE 26,

CUR

WORD 0 ____ ____ ____ ____

WORD 10 ____ ____ ____ ____

WORD 20 ____ ____ ____ ____

WORD 30 ____ ____

a = Floor location number
b = Member number of growth associated EST
c = Starting octal address for unit
    type entry

VERIFY GROWTH ESU VERSION NUMBER

FIG. 1 — Entry Word 10 Layout

entry data octal output	0				Y		Y		Y		Y		Y		Y		Y						
bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	V	V	V	V	V	V

ESU NUMBER: 6 (19–18), 5 (17–16), 4 (15–14), 3 (13–12), 2 (11–10), 1 (9–8), 0 (7–6)

ESU VERSION NUMBER spans bits 19–6

FIG. 2 — Entry Word 12 Layout

entry data octal output	Y		Y		Y		Y		Y		Y		0		0									
bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0

ESU NUMBER: 14 (21–20), 13 (19–18), 12 (17–16), 11 (15–14), 10 (13–12), 9 (11–10), 8 (9–8), 7 (7–6)

ESU VERSION NUMBER spans bits 21–6

[9] Using TABLE B, select version
number associated with LDI issue
on Step 8, Page 1. See NOTE 1 ─────┐
                                    │
                                 ┌──┴──┐
                                (AND)────▶ [11] Was ──── No ──┤
                                 └──┬──┘   version
                                    │   error noted
[10] Compare version numbers in ────┘   │
Step 9 with version numbers   Yes
calculated on Step 7, Page 1 ───────   │
                                                 ▼
                                    [12] Was this ──── Yes ──▶ [13] Record any ──┤
                                    procedure entered   discrepancies
                                    from another   found in
                                    verify procedure   Step 10
                                         │
                                        No
                                         │
                                         ▼
| TABLE B |
UNIT	SD NUMBER	MEMBER VERSION NO.	
		0	1
ESU	5G168-01	*1A	—
* LDI Issue Number			

[14] See CAUTION 1.
Using RC Form 801,
perform functional word
change to correct
data error [DLP-525] ──┤

NOTE 1
PECC diagnostic
center may be
consulted for
current version
information if not
listed in TABLE B

CAUTION 1
Depending on
local procedure,
supervisory or
TELCO engineering
approval must be
obtained prior to
performing any
data change

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VERIFY GROWTH ESU VERSION NUMBER

[1] Enter
DGN:EST a,ESU b:PH 1-3,GROWTH,ESCSEL!
a = Member number of growth
    associated EST
b = Submember number of growth ESU

[2] Was message accepted and did diagnostic run

Yes →

[4] Does output message indicate ATP on phases run

No →

[5] Is this growth job assisted by installer

Yes →

[7] Refer trouble to installer for resolution; ATP required

No ↓

[3] Analyze output message; repeat from Step 1 with corrected data

Yes

No ↓

[6] Clear ESU diagnostic failure; ATP required [TOP 234-151-050]

DIAGNOSE GROWTH ESU (PHASES 1-3)

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[1] Determine location of DIU to
    be grown and its associated
    power converters using FIG. 1

[2] Select circuit packs per TABLE
    A for DIU to be grown

AND

TABLE A		
QUANTITY	NUMBER	NAME
5	**SM1**	DIGROUP INTERFACE (VOICE) or
4	**SM6**	DIGROUP INTERFACE (MF) or
4	**SM7**	DIGROUP INTERFACE (DTMF) or
5	**SM9**	DIGROUP INTERFACE (All other DIU types) or
5	**SM10**	DIGROUP INTERFACE (All other DIU types)
1	**SM2**	CONTROL INTERFACE
1	**SM3**	DS120 RECEIVER FRAMER AND TEST ACCESS
1	**SM4**	DS120 TRANSMIT CONVERTER AND LINE DRIVER/EQUALIZER
1	**SM5**	UNIT CLOCK GENERATOR
1	**140E**	POWER UNIT
1	**141C1**	POWER UNIT (for SM6, 7, 9, or 10) or
1	**141L1**	POWER UNIT (for SM1)

DIF BAY 0/2

EQPT. LOC.				EQPT. LOC.
70	POWER UNITS	DIU 15/31	SPARE DIU 32/33	POWER UNITS	70
62	POWER UNITS	DIU 13/29	DIU 14/30	POWER UNITS	62
52	POWER UNITS	DIU 11/27	DIU 12/28	POWER UNITS	52
44	POWER UNITS	DIU 9/25	DIU 10/26	POWER UNITS	44
36	POWER UNITS	DIU 7/23	DIU 8/24	POWER UNITS	36
26	POWER UNITS	DIU 5/21	DIU 6/22	POWER UNITS	26
18	POWER UNITS	DIU 3/19	DIU 4/20	POWER UNITS	18
10	POWER UNITS	DIU 1/17	DIU 2/18	POWER UNITS	10

FIG. 1 — DIF BAY 0 or 2 — Front View

DETERMINE LOCATION OF DIU EQUIPMENT AND SELECT CIRCUIT PACKS

[1] At Growth DIU, assure that **UNIT** power switch
    is in OFF (down) position. See FIG. 1, Page 2

[2] Set power switches on 140E and 141C1/141L1
    power units to OFF (down) position

[3] At Growth DIU fuse holder, ensure fuse
    is removed. See FIG. 1

[4] Install 140E and 141C1/141L1 power
    units per FIG. 1

[5] See WARNING 1. Install growth DIU
    circuit packs per FIG. 1

[6] Install fuse in growth DIU fuse holder
    (If growing SM6, 7, 9, or 10, ensure 2
    amp fuse is installed)

[7] Set power switches on 140E and 141C1/141L1
    power units to ON (up) position

AND

WARNING 1
*An antistatic
wrist strap must
be worn to prevent
electrostatic
discharge and
possible damage
to circuit packs
while handling*

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INSTALL GROWTH DIU CIRCUIT PACKS AND POWER UNITS

FIG. 1 — DIU Circuit Pack and Power Unit Arrangement

INSTALL GROWTH DIU CIRCUIT PACKS AND POWER UNITS

[1] Read NOTE 1.
Enter **RST:EST** a,**ESU** b!
a = Member number of
    growth associated
    EST
b = Submember number
    of growth ESU

[2] Was message accepted and did diagnostic run

Yes

[4] Does output message indicate ATP and RESTORE COMPLETED

No

[5] Is this growth job assisted by installer

Yes

[7] Refer trouble to installer; ATP required

No

[3] Analyze output message; repeat from Step 1 with corrected data

Yes

No

[6] Clear ESU diagnostic failure; ATP required
[TOP 234-151-050]

NOTE 1
Restore input message will cause diagnostic to be run and ESU to be restored, if ATP

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RESTORE   GROWTH   ESU

SUMMARY

Using verify entry message, call up growth associated
TSI UT translator and determine TSI member equipage
status. Verify that EST indicator bit is set to 0 and
that ESU strap indicator bits are set to ones. Also
verify EST member number.

TABLE A
VER:UTMN;OPT(),CUR: FLN a,   UTYN TSI,
MEMN b,   ME c,
ENTRY ADDRESS d,   ENTRY SIZE 33,
CUR
WORD 0 ____ ____ ____ ____
WORD 10 ____ ____ ____ ____
WORD 20 ____ ____ ____ ____
WORD 30 ____ ____ ____ ____
WORD 40 ____

a = Floor location number
b = Member number of connecting TSI
c = GROW or SGRO or OPER
d = Starting octal address for unit
    type entry

[1] Enter

VER:UTYPE:TSI a!

a = Member number
    of connecting
    TSI

[2] Are message
format and member
identification
correct per
TABLE A

No →

[3] Determine
cause and
resolve; repeat
from Step 1

Yes ↓

[4] Using TTY output,
determine member
equipage state
(Word 0, bits 16 and
17) and record for
later use

→ (Page 2)

VERIFY ECHO SUPPRESSOR DATA AND TSI EQUIPAGE STATUS OF

TSI UT TRANSLATOR

[5] Using TTY output, verify
that bit 23 of word 5
per FIG. 1 is set to
0

[6] Using TTY output and
office records, verify
EST member number per
word 5 in FIG. 1 [DLP-551]

[7] Using TTY output and FIG. 2
and 3, verify that ESU
strap indicators per words
14 and 15 are all set to 1

AND

[8] Were
discrepancies
noted in Steps
5, 6, and 7

No

Yes

[9] See CAUTION 1.
Using RC Form 801,
perform functional
word change to
correct data error
[DLP-525]

entry data octal output	7			7			Y	
bit position	23	22	21	20	19	18	17	16
binary values	1	1	1	1	1	1	1	X
	6	5	4	3	2	1	0	
			ESU NO.					
	ESU STRAP INDICATOR SPC 0							

FIG. 2 — Part of Entry Data Word 14 Pertaining to SPC 0 Strap Indicator

entry data octal output	7			7			Y	
bit position	23	22	21	20	19	18	17	16
binary values	1	1	1	1	1	1	1	X
	13	12	11	10	9	8	7	
			ESU NO.					
	ESU STRAP INDICATOR SPC 1							

FIG. 3 — Part of Entry Data Word 15 Pertaining to SPC 1 Strap Indicator

entry data octal output		Y			Y		
bit position	23	22	21	20	19	18	17
binary values	0	Z	Z	Z	Z	Z	
	E S T I		EST MEMBER NUMBER				

FIG. 1 — Part of Entry Data Word 5 Pertaining to EST Indicator

VERIFY ECHO SUPPRESSOR DATA AND TSI EQUIPAGE STATUS OF TSI UT TRANSLATOR

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SUMMARY
Verify from entry output message that growth DTU submember
bits are set to zero. If UT data is in error, note
discrepancy for later use.

[1] See octal word 0 in entry
output message and FIG. 1

[2] Convert six rightmost octal digits
of word 0 in entry output to
binary digits

[3] Using TABLE A, identify bits associated
with growth DTU

[4] Check that equipage bits identified
in Step 3 are set to zero
(unequipped) in entry output

AND

[5] For later
reference,
note value of
bits if other
than 00

TABLE A	
GROWTH DTU	ASSOCIATED BITS
0	0, 1
1	2, 3
2	4, 5
3	6, 7
4	8, 9
5	10, 11
6	12, 13
7	14, 15

entry data octal output →

6	Y	Y	Y	Y	Y	Y	Y

bit position →

| 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

binary values →

| 1 | 1 | 0 | 0 | X | 0 | 0 | 0 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

DTU NO.

DTU SUBMEMBER EQUIPAGE

FIG. 1 — Entry Data Word 0 Layout

VERIFY UNEQUIPPED STATUS OF GROWTH DTU

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[1] See word 2 in entry
    output message

[2] Convert three leftmost octal
    digits of word 2 in entry
    output to binary digits
    and record

[3] Convert bits 18 through
    23 to decimal TSI member
    number and record. See FIG. 1

[4] Note bit 17 and record
    for SPC assignment. See
    TABLE A

AND → Page 2

TABLE A	
BIT 17	SPC NO.
0	0
1	1

entry data octal output →

	Y		Y		Y		Y		Y		Y		Y		Y	

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

Z	Z	Z	Z	Z	Z	W	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

| TSI MEMBER NUMBER | SPC 0/1 | SP MEMBER NUMBER | L OR R MATRIX | SP ROW NUMBER | SP COLUMN NUMBER |

| TSI SUPPLYING CLOCK TO THIS DT | BASE MISCELLANEOUS SCAN POINT |

FIG. 1 — Entry Data Word 2 Layout

VERIFY TSI SUPPLYING CLOCK TO GROWTH DT

[5] Get office record
    T-nnnn-Hn-467 or
    equivalent.
    See NOTE 1 _____

[6] Locate line on office record
    containing DT frame
    being added _____

[7] Locate the TSI frame
    number on line found
    in Step 6 _____

(AND)

[9] For later
reference, record
any discrepancy
noted in Step 8

[8] Compare TSI frame number
    found in Step 7 with TSI
    number determined on Step 3,
    Page 1, and SPC number
    determined on Step 4, Page 1 _____

NOTE 1
n = Office unique
    drawing number

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VERIFY TSI SUPPLYING CLOCK TO GROWTH DT

SUMMARY
Using verify entry input message, call up EST UT translator associated with growth VIF/DT/DIF and verify that resulting TTY octal output data, when converted, agrees with office records. Refer to entry word explanations in TABLE B, Page 4, as required, for assistance in interpreting specific data fields. If it is determined that UT entry data is in error, word change(s) may be required.

[1] Enter
VER:UTYPE:EST a!
a = Member number
of growth
associated EST

[2] Are message format and member identification correct per TABLE A

Yes →

No ↓

[3] Using TTY output, check that ESU submember equipage in word(s) associated with growth VIU(s)/DTU(s)/DIU(s) is set to a zero state. See word 0 and/or 13, TABLE B, Page 4

[4] Determine cause and resolve; repeat from Step 1

[5] Is equipage state of ESU(s) set to zero

Yes → Page 2, Step 7

No ↓

Page 2

TABLE A

VER:UTMN;OPT(),CUR: FLN a,   UTYN EST,

MEMN b,   ME c,
ENTRY ADDRESS d,   ENTRY SIZE 26,

CUR
WORD 0   _____ _____ _____ _____

WORD 10 _____ _____ _____ _____
        _____ _____ _____ _____

WORD 20 _____ _____ _____ _____
        _____ _____ _____ _____

WORD 30 _____ _____

a = Floor location number
b = Member number of growth associated EST
c = UNEQ or OPER
d = Starting octal address for unit type entry

VERIFY ESU SUBMEMBER EQUIPAGE AND ESU TO VIU/DTU/DIU ASSIGNMENT IN EST UT TRANSLATOR

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[6] See CAUTION 1. Using RC
form 701, degrow submember
equipage in error [DLP-527]

TABLE C	
ESU	OCTAL WORD
0	14
1	15
2	16
3	17
4	20
5	21
6	22
7	23
8	24
9	25
10	26
11	27
12	30
13	31

[7] Using TABLE C, identify word(s) for
associated ESUs

AND → Page 3

[8] Use TTY output, office records,
and TABLE B, Page 4, to verify ESU to
VIU/DTU/DIU assignment per word(s)
identified in Step 7 [DLP-550]

CAUTION 1
Depending on local
procedures,
supervisory or
TELCO engineering
approval must be
obtained prior to
performing any
data change

VERIFY ESU SUBMEMBER EQUIPAGE AND ESU TO VIU/DTU/DIU ASSIGNMENT IN EST UT TRANSLATOR

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```
        ┌─────────────┐
       /  [9] Were     \
      /   discrepancies  \      No
      \   noted on       /————————————|
       \  Page 2, Step 8/
        └──────┬──────┘
               │ Yes
               ▼
┌──────────────────┐
│ [10] Refer problem(s)│          ┌─────────────┐
│ to office supervisor/│         /  [11] Error   \   Office
│ installer to         │————————▶\  was found     /  records
│ determine error      │          \  to be in    /————————┐
│ and decide on        │           └──────┬──────┘         │
│ corrective action    │                  │ UT             │
└──────────────────┘                  │ entry data     │
                                          ▼                │
                              ┌──────────────────┐         │
                              │ [12] Take appropriate│     │
                              │ corrective action as │     │
                              │ determined by TELCO  │     │
                              │ engineering/regional │—————┴—————|
                              │ engineering and as   │
                              │ approved by office   │
                              │ supervisor           │
                              └──────────────────┘
```

**VERIFY ESU SUBMEMBER EQUIPAGE AND ESU TO VIU/DTU/DIU ASSIGNMENT
IN EST UT TRANSLATOR**

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TABLE B

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 0

entry data octal output	1	0	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	1	0	0	0	W	W	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X

ESU NUMBER: 6 5 4 3 2 1 0
ESU SUBMEMBER EQUIPAGE

Y= Variable octal data

XX = 00 for unequipped
01 for grow
10 for special growth
11 for operational

Entry Word 13

entry data octal output	0	0	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	0	0	0	0	0	0	1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X

ESU NUMBER: 14 13 12 11 10 9 8 7
ESU SUBMEMBER EQUIPAGE

Y= Variable octal data

XX = 00 for unequipped
01 for grow
10 for special growth
11 for operational

	TABLE B (Contd)
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

14 through 31	entry data octal output →	0	0	0	Y	Y	Y	Y	Y

bit position →	23 22 21	20 19 18 17 16	15 14 13 12	11 10 9 8 7 6 5	4 3 2 1 0

binary values →	0 0 0	0 0 0 0 0	Z Z Z Z	X X X X X X X	X X X X X
			EQUIPAGE TYPE	VIF/DT/DIF MEMBER NUMBER	VIU/DTU/DIU NUMBER
				ESU TO VIU/DTU/DIU ASSIGNMENT	

X...X = Converts to decimal VIF/DT/DIF
      assignment as reflected in
      office record drawing T-nnnn-Hn-xxx
      or equivalent

ZZZZ 0011 for VIF
     0001 for DT
     0100 for DIF

Y = Variable octal number

VERIFY ESU SUBMEMBER EQUIPAGE AND ESU TO VIU/DTU/DIU ASSIGNMENT IN EST UT TRANSLATOR

[1] Verify that associated circuit pack is installed in line equalizer panel for growth DTU. See FIG. 1 and 2 ─────────┐

[2] Verify that associated circuit pack is installed in protection switch panel for growth DTU. See FIG. 1 and FIG. 3, Page 2 ─────

AND

CONNECTOR PANEL
LINE EQUALIZER
PROT SW PANEL

FUSE & ALARM PANEL

DTU 8 (SPARE)	DTU 7
DTU 6	DTC 1
	DTC 0
DTU 4	DTU 5
DTU 2	DTU 3
DTU 0	DTU 1

COMM PANEL

+24V FILTER

FIG. 1 — Digroup Terminal Frame — Front View

ASSOCIATED WITH DTU 0
ASSOCIATED WITH DTU 1
ASSOCIATED WITH DTU 2
ASSOCIATED WITH DTU 3
ASSOCIATED WITH DTU 4
ASSOCIATED WITH DTU 5
ASSOCIATED WITH DTU 6
ASSOCIATED WITH DTU 7

2		4		6		8		10		12		14		16
FB 24*_		FB 24*_		FB 24*_		FB 24*_		FB 24*_		FB 24*_		FB 24*_		FB 24*_

* TYPE OF FB 24 _ CIRCUIT PACKS TO BE USED IS DETERMINED BY CABLE DISTANCE FROM DTF TO DSX-1, LT-1, OR REPEATER BAY. SEE BELOW.

    0 TO 219 FT   FB 246
  220 TO 439 FT   FB 247
  440 TO 655 FT   FB 248

FIG. 2 — Line Equalizer Panel — Front View

VERIFY ASSOCIATED CIRCUIT PACK IS INSTALLED IN LINE EQUALIZER AND PROTECTION SWITCH PANELS (DT FRAME J68952B-1)

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ASSOCIATED WITH DTU 0   ASSOCIATED WITH DTU 1   ASSOCIATED WITH DTU 2   ASSOCIATED WITH DTU 3   ASSOCIATED WITH DTU 4   ASSOCIATED WITH DTU 5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
FC 25					FC 25					FC 25				FC 25					FC 25					FC 25			

ASSOCIATED WITH DTU 6   ASSOCIATED WITH DTU 7   ASSOCIATED WITH DTU 8

29	30	31	32	33	34	35	36	37	38	39	40	41	42
FC 25					FC 25								FC 26

FIG. 3 — Protection Switch Panel — Front View

VERIFY ASSOCIATED CIRCUIT PACK IS INSTALLED IN LINE EQUALIZER AND PROTECTION SWITCH PANELS (DT FRAME J68952B-1)

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SUMMARY
Using verify entry input message, call up connecting
TSI UT translator and verify that resulting TTY octal
output data, when converted, agrees with office records.

Refer to entry word explanations in TABLE B, Page 4, as
required, for assistance in interpreting specific data
fields. If it is determined that UT entry data is in error,
word change(s) may be required.

TABLE A

VER:UTMN;OPT(),CUR: FLN a,   UTYN TSI,

MEMN b,   ME OPER,

ENTRY ADDRESS c,   ENTRY SIZE 33,

CUR
WORD 0   ____ ____ ____ ____

WORD 10   ____ ____ ____ ____

WORD 20   ____ ____ ____ ____

WORD 30   ____ ____ ____ ____

WORD 40   ____

a = Floor location number
b = Member number of connecting TSI
c = Starting octal address for unit type entry

[1] Enter
VER:UTYPE:TSI a!
a = Member number
    of connecting
    TSI

[2] Are message
format and member
identification
correct per
TABLE A

No

Yes

[3] Determine
cause and
resolve; repeat
from Step 1

[4] Using TTY output,
check that TSI port(s)
associated with growth
VIU(s)/DTU(s)/DIU(s)
has equipage bits set to
0. See words 0 and/or 13,
TABLE B, Page 4

[5] Were equipage
bits found in a
state other than
zero

No

Page 2,
Step 7

Yes

Page 2

**VERIFY TSI PORT TO VIU/DTU/DIU ASSIGNMENT AND TSI PORT SUBMEMBER
EQUIPAGE DATA OF TSI UT TRANSLATOR**

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TABLE C	
SPC AND TSI PORT	OCTAL WORD
SPC 0 - PORT 0	21
SPC 0 - PORT 1	22
SPC 0 - PORT 2	23
SPC 0 - PORT 3	24
SPC 0 - PORT 4	25
SPC 0 - PORT 5	26
SPC 0 - PORT 6	27
SPC 1 - PORT 0	31
SPC 1 - PORT 1	32
SPC 1 - PORT 2	33
SPC 1 - PORT 3	34
SPC 1 - PORT 4	35
SPC 1 - PORT 5	36
SPC 1 - PORT 6	37

[6] See CAUTION 1. Using RC Form 701, degrow submember equipage to unequipped [DLP-527]

[7] If growth is being performed in AT&T office, verify Integrated Services Digital Network (ISDN) interface capability per bit 0 in words 14 and 15 in TABLE B

[8] Using TABLE C, identify word(s) for associated SPC-PORT

[9] Use TTY output, office records, and TABLE B, Page 4, to verify TSI port to VIU/DTU/DIU assignment per word(s) identified in Step 8 [DLP-530]

AND → Page 3

CAUTION 1
Depending on local procedures, supervisory or TELCO engineering approval must be obtained prior to performing any data change

VERIFY TSI PORT TO VIU/DTU/DIU ASSIGNMENT AND TSI PORT SUBMEMBER EQUIPAGE DATA OF TSI UT TRANSLATOR

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	TABLE B
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 0

entry data octal output:

Y	Y	6	Y	Y	Y	Y	Y

bit position:

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values:

W	W	W	Z	Z	Z	1	1	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TSI PORT NUMBER - SPC 0 (6, 5, 4, 3, 2, 1, 0)

TSI PORT SUBMEMBER EQUIPAGE

X...X = 00 for unequipped port
= 11 for operational port

Y = Variable octal numbers

Entry Word 13

entry data octal output:

0	0	0	Y	Y	Y	Y	Y

bit position:

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values:

0	0	0	0	0	0	0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TSI PORT NUMBER - SPC 1 (6, 5, 4, 3, 2, 1, 0)

TSI PORT SUBMEMBER EQUIPAGE

X...X = 00 for unequipped ports
= 11 for operational ports

Y = Variable octal numbers

VERIFY TSI PORT TO VIU/DTU/DIU ASSIGNMENT AND TSI PORT SUBMEMBER EQUIPAGE DATA OF TSI UT TRANSLATOR

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TABLE B (Contd)		
ENTRY WORD (OCTAL)		UT ENTRY DATA AND WORD CONFIGURATION

14

entry data octal output →

Y	Y	Y	0	0	0	0	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z

6	5	4	3	2	1	0

ESU NO.

ESU STRAP INDICATOR - SPC 0

↑
ISDN INTERFACE CAPABILITY INDICATOR

Z = 0 = SPC 0 does not have ISDN Interface Capability
    1 = SPC 0 does have ISDN Interface Capability
Y = Variable octal number

15

entry data octal output →

Y	Y	Y	0	0	0	0	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z

13	12	11	10	9	8	7

ESU NO.

ESU STRAP INDICATOR - SPC 1

↑
ISDN INTERFACE CAPABILITY INDICATOR

Z = 0 = SPC 1 does not have ISDN Interface Capability
    1 = SPC 1 does have ISDN Interface Capability
Y = Variable octal number

VERIFY TSI PORT TO VIU/DTU/DIU ASSIGNMENT AND TSI PORT SUBMEMBER EQUIPAGE DATA OF TSI UT TRANSLATOR

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TABLE B (Contd)										

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION									

entry data octal output:

0	0	Y	Y	Y	Y	Y	Y

bit position:

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values:

0	0	0	0	0	0	0	0	Z	Z	Z	Z	X	X	X	X	X	X	X	X	X	X	X	X

Entry word range: 21 through 27 and 31 through 37

Field labels: EQUIPAGE TYPE | VIF/DT/DIF MEMBER NUMBER | VIU/DTU/DIU NUMBER

TSI PORT TO VIU/DTU/DIU ASSIGNMENT

X...X = Converts to decimal TSI-VIU/DTU/DIU info as reflected in office record drawing T-nnnn-Hn-467 or equivalent

Y = Variable octal numbers

ZZZZ= 0011 for VIF
      0001 for DT
      0100 for DIF

VERIFY TSI PORT TO VIU/DTU/DIU ASSIGNMENT AND TSI PORT SUBMEMBER EQUIPAGE DATA OF TSI UT TRANSLATOR

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SUMMARY
Using verify entry input message, call up growth EST UT translator and verify that resulting TTY octal output data, when converted, agrees with office records. Refer to entry word explanations in TABLE B, Page 6, as required, for assistance in interpreting specific data fields. If it is determined that UT entry data is in error, word change(s) may be required.

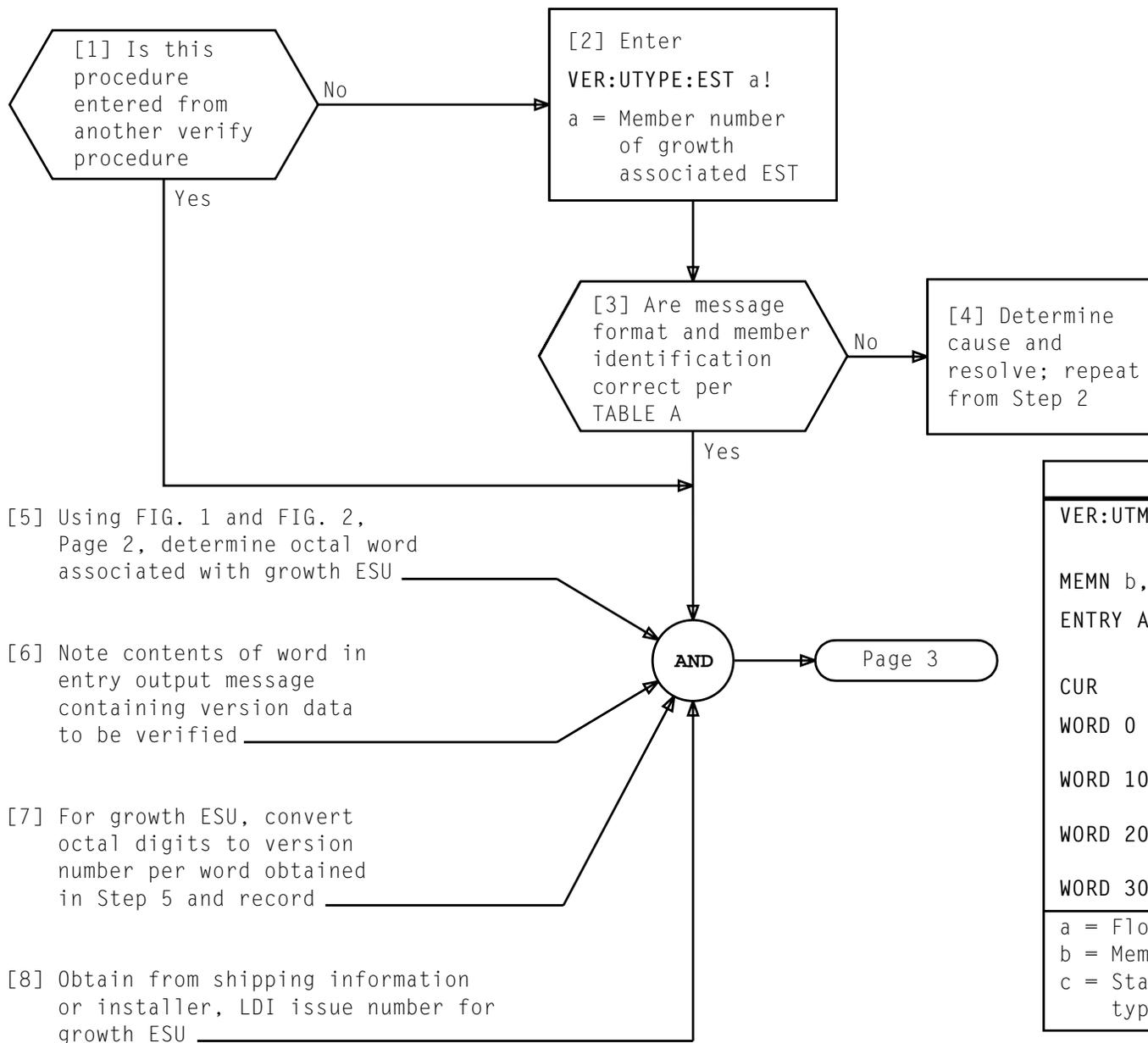**TABLE A**

VER:UTMN;OPT(),CUR: FLN a,   UTYN EST,

MEMN b,   ME UNEQ,

ENTRY ADDRESS c,   ENTRY SIZE 26,

CUR

WORD 0 _____ _____ _____ _____

WORD 10 _____ _____ _____ _____

WORD 20 _____ _____ _____ _____

WORD 30 _____ _____

a = Floor location number
b = Member number of growth EST
c = Starting octal address for unit type entry

---

[1] Enter
VER:UTYPE:EST a!
a = Member number of growth EST

[2] Are message format and member identification correct per TABLE A

No → [3] Determine cause and resolve; repeat from Step 1

Yes ↓

[4] Using TTY output and TABLE B, Page 6, check that member and submember equipage bits per words 0 and 13 are set to 0 [DLP-553]

[5] Were equipage bits found in a state other than zero

No → Page 2, Step 7

Yes ↓

Page 2

VERIFY EST UT TRANSLATOR

[6] Read NOTE 1 and CAUTION 1. Using RC Form 701, degrow submember equipage [DLP-527] and/or member equipage to unequipped [DLP-526]

[7] Using TTY output, TABLE B, Page 6; and office records, verify EST controller version numbers per word 10 [DLP-513]

[8] Were version errors noted

No

Yes

[9] See CAUTION 1. Using RC Form 801, perform functional word change to correct data error [DLP-525]

[10] Using TTY output, TABLE B and office records, verify ESU version numbers per words 10 and 12 [DLP-538]

[11] Were version errors noted

No

Yes

[12] See CAUTION 1. Using RC Form 801, perform functional word change to correct data error [DLP-525]

Page 3

NOTE 1
Submember equipage must be degrown first, if required, followed by degrowth of member equipage, if required

CAUTION 1
Depending on local procedures, supervisory or TELCO engineering approval must be obtained prior to performing any data change

VERIFY EST UT TRANSLATOR

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Using TTY output, TABLE B, Page 6; and office records:

[13] Verify miscellaneous member type data
of word 0, bits 18 through 23

[14] Verify alarm grid, lineup, and
frame assignment for growth
EST per word 1 [DLP-523]

[15] Verify SD and pulse point
assignments for growth EST
per words 2, 5, 6, and 7 [DLP-528]

[16] Verify PUB branch assignment
for growth EST per word 3
[DLP-524]

AND → Page 4

[17] Verify scan point assignments
for growth EST per words 3
and 4 [DLP-529]

[18] Verify connecting TSI member
number per word 5 and record
for later use [DLP-554]

[19] Verify member version
data per word 11

VERIFY EST UT TRANSLATOR

[20] Using TABLE C, identify and note octal word associated with each ESU along with possible VIU/DTU/DIU assignments

→

[21] Using TTY output, TABLE B, Page 12; and office records, verify ESU to VIU/DTU/DIU assignments per words 14 through 31
 [DLP-550]

→

Page 5

TABLE C				
ESU	OCTAL WORD	POSSIBLE UNIT ASSIGNMENT		
		VIU	DTU	DIU
0	14	0	0	0/16
1	15	1	1	1/17
2	16	2	2	2/18
3	17	3	3	3/19
4	20	4	4	4/20
5	21	5	5	5/21
6	22	6	6	6/22
7	23	0	0	8/24
8	24	1	1	9/25
9	25	2	2	10/26
10	26	3	3	11/27
11	27	4	4	12/28
12	30	5	5	13/29
13	31	6	6	14/30

VERIFY EST UT TRANSLATOR

```
 _____
/                   \
| [22] Were          _____  No  _____|
| discrepancies      /                                                         |
| noted in Step 13,                                                            |
| Page 3 through                                                               |
| Step 21, Page 4                                                              |
_____/                                                         |
         |                                                                    |
        Yes                                                                   |
         |                                                                    |
         v                                                                    |
┌─────────────────────┐        _____                                    |
│ [23] Refer problem(s)│       /           \    Office                        |
│ to installer to      │──────│ [24] Error was │  records  ────────────────────|
│ determine error      │      │ found to be in │                              |
│ and decide on        │       _____/                                  |
│ corrective action    │            |                                         |
└─────────────────────┘           UT                                          |
                                  entry                                       |
              ┌────────────────── data                                        |
              |                    v                                          |
              |         ┌─────────────────────┐                              |
              |         │ [25] Assist installer│                              |
              |         │ in taking appropriate│                              |
              |         │ corrective action    │                              |
              |         │ as determined by     │                              |
              |         │ regional engineering │                              |
              |         │ and as approved by   │                              |
              |         │ office supervisor    │                              |
              |         └─────────────────────┘                              |
              |                    |                                          |
              |                    v                                          |
              |              _____                                      |
              |             /           \                                     |
              |    No      / [26] Have all \    Yes                           |
              └───────────│ UT data errors  │──────────────────────────────── 
                           \ now been       /
                            \ corrected    /
                             _____/
```

[22] Were discrepancies noted in Step 13, Page 3 through Step 21, Page 4 — No

Yes

[23] Refer problem(s) to installer to determine error and decide on corrective action

[24] Error was found to be in — Office records

UT entry data

[25] Assist installer in taking appropriate corrective action as determined by regional engineering and as approved by office supervisor

[26] Have all UT data errors now been corrected — No / Yes

VERIFY EST UT TRANSLATOR

	TABLE B
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

ENTRY WORD 0

entry data octal output	1	0	0	0	0	0	0	0

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MEMBER TYPE	MEMBER TYPE HARDWARE GENERATION	MEMBER EQUIPAGE		6	5	4	3	2	1	0
				ESU NUMBER						
				ESU SUBMEMBER EQUIPAGE						

ENTRY WORD 1

entry data octal output	Y	Y	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	Z	Z	Z	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

ASSIGNED ALARM GRID NUMBER	FRAME LINEUP NUMBER	FRAME NUMBER

X...X = Converts to decimal frame info
as reflected in office floor
plan drawing

ZZZZ = Converts to decimal alarm grid
number as reflected in office
record drawings
T-nnnn-Hn-400, 401, or 402 or equivalent

Y= Variable octal numbers

VERIFY EST UT TRANSLATOR

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	TABLE B (Contd)

<table>
<tr><td rowspan="2">ENTRY
WORD
(OCTAL)</td><td>UT ENTRY DATA AND WORD CONFIGURATION</td></tr>
</table>

ENTRY WORD (OCTAL): 2

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER
	BASE SP PULSE POINT			

X...X = Converts to decimal SP info
        as reflected in office record
        drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

ENTRY WORD (OCTAL): 3

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	1	Z	Z	Z	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

	PUB BRANCH NUMBER ASSIGNMENT		SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER
			MEMBER BASE MISCELLANEOUS SCAN NUMBER			

X...X = Converts to decimal SP info
        as reflected in office record
        drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

ZZZ = 3-digit code corresponding to
lettered PUB branch as reflected in
office record drawing T-nnnn-Hn-3840
or equivalent

= 000 - branch A&B   100 - branch K&L
   001 - branch C&D   101 - branch M&R
   010 - branch E&F   110 - branch T&V
   011 - branch G&H   111 - branch W&X

VERIFY EST UT TRANSLATOR

TABLE B (Contd)

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

ENTRY WORD 4

entry data octal output →

0	0	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X

	SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

BUS BASE MISCELLANEOUS SCAN NUMBER

X...X = Converts to decimal SP info
    as reflected in office record
    drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

ENTRY WORD 5

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

Z	Z	Z	Z	Z	Z	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X

TSI MEMBER NUMBER		SP MEMBER NUMBER	L OR R MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

DUPLICATE BASE SP PULSE POINT

X...X = Converts to decimal SP info
    as reflected in office record
    drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

Z..Z = TSI Member Number Assignment

VERIFY EST UT TRANSLATOR

	TABLE B (Contd)								

ENTRY WORD (OCTAL): UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 6:

entry data octal output →	0	0	Y	Y	Y	Y	Y	Y

| bit position → | 23 22 21 | 20 19 18 | 17 16 15 14 | 13 12 | 11 10 9 | 8 7 6 | 5 4 3 | 2 1 0 |

| binary values → | 0 0 0 | 0 0 0 | 0 X X X X | X X | 0 X X | X X X | X X X | X X X |

SP MEMBER NUMBER | L OR R MATRIX | SP ROW NUMBER | SP COLUMN NUMBER

MEMBER BASE MISCELLANEOUS SD NUMBER

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

Entry Word 7:

entry data octal output →	0	0	Y	Y	Y	Y	Y	Y

| bit position → | 23 22 21 | 20 19 18 | 17 16 15 14 | 13 12 | 11 10 9 | 8 7 6 | 5 4 3 | 2 1 0 |

| binary values → | 0 0 0 | 0 0 0 | 0 X X X X | X X | 0 X X | X X X | X X X | X X X |

SP MEMBER NUMBER | L OR R MATRIX | SP ROW NUMBER | SP COLUMN NUMBER

BUS BASE MISCELLANEOUS SD NUMBER

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

VERIFY EST UT TRANSLATOR

TABLE B (Contd)	
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 10

entry data octal output	0				Y		Y		Y		Y		Y		Y			Y		
bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5 4 3	2 1 0
binary values	0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X X X	X X X
					6		5		4		3		2		1		0		CONTROLLER 1	CONTROLLER 0

ESU NUMBER (bits 19–6)

ESU VERSION NUMBER

EST CONTROLLER VERSION NUMBER (bits 5–0)

X...X = Version numbers of EST equipment as reflected in appropriate office record drawing and shipping information Y = Variable octal numbers

Entry Word 11

entry data octal output	Y			Y			Y			Y			Y			Y			Y			Y		
bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

MEMBER VERSION CLASS AC

Y...Y = Values as determine from PA-4A000 or Functional ODA Listing

VERIFY EST UT TRANSLATOR

TABLE B (Contd)	
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 12

entry data octal output	Y	Y	Y	Y	Y	Y	0	0

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0

	14	13	12	11	10	9	8	7	
	ESU NUMBER								
	ESU VERSION NUMBER								

XX = Version number of EST equipment as reflected in appropriate office record drawing and shipping information

Y = Variable octal numbers

Entry Word 13

entry data octal output	0	0	0	0	0	0	0	0

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	14	13	12	11	10	9	8	7
	ESU NUMBER							
	ECHO SUPPRESSOR SUBMEMBER EQUIPAGE							

VERIFY EST UT TRANSLATOR

	TABLE B (Contd)
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

14 through 31			

Bit fields:

0	0	Y	Y	Y	Y	Y	Y

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	0	0	0	0	0	0	0	Z	Z	Z	Z	X	X	X	X	X	X	X	X	X	X	X

	EQUIPAGE TYPE	VIF/DT/DIF MEMBER NO.	VIU/DTU/DIU NUMBER
		ESU TO VIU/DTU/DIU ASSIGNMENT	

X...X = Converts to decimal VIU/DTU/DIU assignment as reflected in office record drawing T-nnnn-Hn-xxx or equivalent

ZZZZ = 0011 for VIF
0001 for DT
0100 for DIF

Y = Variable octal number

VERIFY EST UT TRANSLATOR

SUMMARY
Convert octal digits representing VIU/DTU/DIU information
of entry output word(s) to decimal. Compare entry output
data against office records. If entry data and office

records do not agree, record discrepancies for later use.
If this procedure is used as a result of an EST growth,
repeat procedure for each ESU being equipped.

[1] Identify octal word being verified
    for ESU in entry output message

[2] See FIG. 1, Page 2,
    for word layout

[3] Convert necessary octal digits
    in word identified in Step 1 to
    binary digits and record

[4] Convert VIU/DTU/DIU number to
    decimal and record

[5] Convert VIF/DT/DIF member number
    to decimal and record

[6] Convert equipage type (VIF/DT/DIF)
    to decimal and record. See NOTE 1

AND

Octal to
decimal
conversion
completed

Page 3

NOTE 1
Bits 15 through 12
set to 0011 for VIF
or 0001 for DT or
0100 for DIF

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VERIFY ESU TO VIU/DTU/DIU ASSIGNMENT

entry data
octal output →

| 0 | 0 | Y | Y | Y | Y | Y | Y |

bit position →

| 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

binary values →

| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Z | Z | Z | Z | X | X | X | X | X | X | X | X | X | X | X |

EQUIPAGE
TYPE

VIF/DT/DIF MEMBER NO.

VIU/DTU/DIU
NUMBER

ESU TO VIU/DTU/DIU ASSIGNMENT

FIG. 1 — Office Generic Word Layout for ESU Assignment

VERIFY ESU TO VIU/DTU/DIU ASSIGNMENT

[7] Get office record containing ESU
    to VIU/DTU/DIU assignments

[8] Locate line on office record containing
    EST and ESU being verified

[9] Locate VIU/DTU/DIU number on line
    found in Step 8

[10] Compare numbers found in Step 4, Page 1; and
     Step 9. Note any discrepancy for later use

[11] Locate VIF/DT/DIF member number on
     line found in Step 8

[12] Compare numbers found in Step 5, Page 1; and
     Step 11. Note any discrepancy for later use

AND

[13] For later
reference, record
any discrepancy
noted in Steps
10 and 12

[14] Is this
procedure being
done as a result
of EST growth

No

Yes

[15] Repeat
from Step 1,
Page 1, for
each equipped
ESU

VERIFY ESU TO VIU/DTU/DIU ASSIGNMENT

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SUMMARY

Convert octal digits of word 5 representing EST member number
to decimal. Using appropriate office record, look up EST
member number associated with TSI and compare with value
in entry output. If entry output data does not agree, note
discrepancies for later use.

[1] See word 5 in entry
    output message

[2] See FIG. 1 for
    word 5 layout

[3] Convert two leftmost octal
    digits of word 5 in entry
    output to binary digits
    and record

[4] Convert bits 18 through 22 to
    decimal EST member number and
    record

[5] Get appropriate office
    record reflecting TSI/EST
    interface

[6] Locate growth associated
    TSI member number data
    in record

AND

[7] Note EST member number
    associated with
    corresponding TSI
    data in Step 6

[8] Compare EST member number
    in Steps 4 and 7.
    Note any discrepancy
    for later use

AND

entry data octal output →	Y	Y	
bit position →	23 22 21	20 19 18	17
binary values →	0 Z Z Z	Z Z	0

| E S T I | EST MEMBER NUMBER | |

FIG. 1 — Part of Entry Data Word 5 Pertaining
to EST Member Number and Indicator

VERIFY EST MEMBER NUMBER

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```
┌─────────────────┐          ╱──────────────────╲
│ [1] Enter       │         ╱  [2] Was VIU/DTU/   ╲    Yes   ┤
│ message per     │────────▶   DIU removed          ────────┤
│ TABLE A         │         ╲  from service        ╱         │
└─────────────────┘          ╲──────────────────╱
                                      │
                                      │ No
                                      ▼
                             ╱──────────────────╲   System
                            ╱                     ╲  denied      ┌──────────────────┐
                               [3] Output            request     │ [5] Determine    │
                               indicates          ─────────────▶ │ why request was  │
                            ╲                     ╱               │ denied; resolve  │
                             ╲──────────────────╱                │ and repeat from  │
                                      │                          │ Step 1           │
                                      │ Invalid                  └──────────────────┘
                                      │ input
                                      │ message
                                      ▼
                            ┌──────────────────┐
                            │ [4] Repeat       │
                            │ from Step 1 to   │
                            │ insure message   │
                            │ was entered      │
                            │ correctly        │
                            └──────────────────┘
```

TABLE A
RMV:a b,c d!
a = Unit type-VIF or DT or DIF
b = Member number of
growth associated frame
c = Subunit type-VIU or DTU or DIU
d = Submember number of growth
associated unit

SUMMARY
Verify from entry output message that EST member and
submember equipage bits are set to 0. Note any
discrepancies for later reference.

[1] See entry output
message

[2] Examine six rightmost
octal digits of
words 0 and 13

AND

[3] Are these
digits all
set to zero

Yes

No

[4] See FIG. 1 and 2, Page 2.
Identify associated binary
bit(s) not set to zero
and note for later
reference

AND

[5] Identify equipage
state(s) other than
00 to installer

**VERIFY UNEQUIPPED STATE OF GROWTH EST MEMBER AND
SUBMEMBER EQUIPAGE**

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FIG. 1 — Entry Word 0 Layout

FIG. 2 — Entry Word 13 Layout

VERIFY UNEQUIPPED STATE OF GROWTH EST MEMBER AND SUBMEMBER EQUIPAGE

SUMMARY
Convert octal digits representing EST to TSI assignment in
entry output word 5 to decimal. Compare the entry output
data against office records. If entry output data and
office records do not agree, record discrepancy for later
reference.

[1] See word 5 in entry output message

[2] See FIG. 1 for word 5 layout

[3] Convert two leftmost octal digits
of word 5 in entry output to
decimal TSI member number
and record

AND → Page 2

entry data octal output	Y	Y	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	Z	Z	Z	Z	Z	Z	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TSI MEMBER
NUMBER

FIG. 1 — Entry Data Word 5 Layout

VERIFY GROWTH EST TO TSI ASSIGNMENT

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[4] Get office record
    containing EST to
    TSI assignment ──────────────┐

[5] Locate line on record
    containing EST frame
    number being added ──────┐

                              ⊕ AND ───────▶ ⬡ [8] Was any   No
                                              discrepancy ──────────┐
[6] Locate the TSI frame   noted in Step 7   │
    number on line found   │   │
    in Step 5 ──────────────┘   Yes   │
                                                      │   │
[7] Compare TSI frame   ▼   │
    number found in Step 6   ┌──────────────────┐   │
    with TSI member number   │ [9] Record   │   │
    determined in Step 3,   │ discrepancy for │───┘
    Page 1 ─────────────────┘   │ later reference │
                                             └──────────────────┘

VERIFY GROWTH EST TO TSI ASSIGNMENT

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SUMMARY
Convert octal digits representing TSI information of entry
output word to decimal. Compare entry output data against
office records. If entry output data and office records do
not agree, record discrepancies for later reference. If this
procedure is done as a result of a DT addition, repeat
procedure for each equipped DTU.

[1] Identify octal word being verified in output message

[2] See FIG. 1 for typical word layout

[3] See NOTE 1. Convert the necessary octal digits in
    entry output pertaining to TSI port assignment to
    binary digits and record

[4] Convert bits 0 through 2 for even numbered DTU(s)
    or bits 10 through 12 for odd numbered DTU(s) to
    decimal TSI port number and record

[5] Record bit 3 for even numbered DTU(s) or bit 13
    for odd numbered DTU(s)

AND → Page 2

NOTE 1
For even numbered
DTU(s), the four
rightmost octal
digits will be
converted and for
odd numbered DTU(s),
the five left-most
octal digits will be
converted

entry data octal output →	0			Y		Y		Y		Y		Y		Y		Y	
bit position →	23 22 21 20	19 18 17	16 15 14	13	12 11 10	9 8 7	6 5 4	3	2 1 0
binary values →	0 0 0 0	X X X	X X X	X	X X X	X X X	X X X	X	X X X
		TSI MEMBER NUMBER		SPC 0/1	TSI PORT NO.	TSI MEMBER NUMBER		SPC 0/1	TSI PORT NO.
		DTU 1, 3, 5 OR 7 TO TSI LEVEL ASSIGNMENT				DTU 0, 2, 4 OR 6 TO TSI LEVEL ASSIGMENT			

FIG. 1 — Typical Word Layout Pertaining to TSI Port Assigment

VERIFY GROWTH DTU TO TSI PORT ASSIGNMENT

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[6] Convert bits 4 through 9 for even
    numbered DTU(s) or bits 14 through
    19 for odd numbered DTU(s) to decimal
    TSI member number and record ─────────────┐
                                              │
                                              ▼
[7] Get office record containing   │
    DTU to TSI port assignments ──────────────┤
                                              │
                                              ▼
[8] Locate line on record   (AND) ──────▶ (Page 3)
    containing the DT frame
    and unit being grown ─────────────────────▶
                                              ▲
[9] Locate the TSI port number value   │
    on line found in Step 8 ──────────────────┘
                                              ▲
[10] Compare value found in Step 9   │
    with TSI port number recorded   │
    in Step 4, Page 1, and note any   │
    discrepancy for later use ────────────────┘

VERIFY GROWTH DTU TO TSI PORT ASSIGNMENT

[11] Locate the SPC value on line
found on Step 8, Page 2 ─────────────┐
                                     │
                                     ▼
[12] Compare value found in Step 11 with SPC   ┌──────────────────┐
number recorded in Step 5, Page 1, and note   │ [15] For later   │
any discrepancy for later use ──────────┐   ╱AND╲   │ reference, record │
                                         ├──▶│ AND │─▶│ any discrepancy   │
                                         │   ╲   ╱   │ noted in Steps 10,│
[13] Locate the TSI member number value │   │ 12, or 14   │
on line found on Step 8, Page 2 ─────────┤   └──────────────────┘
                                         │   │
                                         │   ▼
[14] Compare value found in Step 13 with TSI
member number recorded in Step 6, Page 2,   ╱─────────────────────╲
and note any discrepancy for later use ──────────┤ [16] Is this   │   No
                                                 │ procedure being   ├────────┐
                                                 │ done as a result of │   │
                                                 │ DT frame addition   │   │
                                                 ╲─────────────────────╱   │
                                                           │   │
                                                          Yes   │
                                                           ▼   │
                                                 ┌──────────────────┐   │
                                                 │ [17] Repeat from │   │
                                                 │ Step 1, Page 1,   │   │
                                                 │ for each   ├───────────┤
                                                 │ additional   │   │
                                                 │ equipped DTU   │   │
                                                 └──────────────────┘   │

VERIFY GROWTH DTU TO TSI PORT ASSIGNMENT

[1] Determine location of DTU to be added. See FIG. 1

[2] Select circuit packs per TABLE A for DTU to be added

AND

FIG. 1 — Digroup Terminal Frame — Front View

TABLE A					
DTU PLUG-IN CIRCUIT PACKS					
QUANTITY	NUMBER	NAME	QUANTITY	NUMBER	NAME
5	**FA1110**	Receive Converter	1	**FA1134**	Three Random Access Memory
5	**FA1111**	Receive Store Control			
1	**FA1114**	Receiver Multiplex 2	1	**FA1135**	Two Random Access Memory
1	**FA1115B**	Transmit Processing			
1	**FA1116**	Framing Logic	5	**FA1136**	Transmit Converter
1	**FA1117**	Old Data Store Logic	1	**FA1137**	Unit System Clock Generator
1	**FA1118**	Suitability Store Logic			
2	**FA1119**	8-Bit Recirculating Store	1	**FA1138**	Generation and Decoding
			1	**FA1139**	Bipolar Violation Detector Unit ESR Scanner and Decoding
1	**FA1120**	Signaling			
1	**FA1121**	Local Alarm			
1	**FA1122**	Remote Alarm	1	**FA1143**	Unit Line Clock
1	**FA1123**	T Access and Transmitter	5	**FB235**	Bipolar to Unipolar Converter
1	**FA1124**	Receiver Access			
1	**FA1125**	TSI Link Receiver	1	**FB239B**	Regulator
2	**FA1127**	Error Source Register	1	**FB241**	Data and Timing
1	**FA1129**	GWC Decoding	1	**FA243**	TSI Line Driver
1	**FA1131**	E & M Store	1	**140C**	Power Unit
3	**FA1132**	Clock Select	1	**146C**	Power Unit

DETERMINE DTU EQUIPMENT TO BE ADDED AND SELECT CIRCUIT PACKS (J68952B-1)

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[1] See WARNING 1. Install 145A and 145B
    power units per FIG. 1 for
    growth DTU ──────────────┐
                             ▼
                        (AND) Circuit packs and
                             ▲   power units installed ──────┤
[2] See WARNING 1. Install circuit packs
    per FIG. 1 for growth DTU ────────┘

	FA1110	FA1111	FA633	FA1110	FA1111	FA633	FA1110	FA1111	FA633	FA1110	FA1111	FA633	FA1113	FA633	FA1111	FA1110	FA1132		FA1132								145A						145A			

FIG. 1 — DTU Circuit Pack Locations (J68952A-1)

[1] See WARNING 1. Install 140C and 146C power units
    per FIG. 1 for growth DTU

Circuit packs
and power units
installed

AND

[2] See WARNING 1. Install circuit packs per FIG. 1
    for growth DTU

FA1110	FA1111		FA1110	FA1111		FA1110	FA1111	FA1134	FA1110	FA1111		FA1135		FA1111	FA1110			FA1137							146 C	
	FB235		FB235		FB235		FB235		FB235	FA1114	FA1127	FA1138	FA1129	FA1121	FA1122		FA1131	FA1120	FA1116	FA1119	FA1118	FA1117	FA1119			140 C	
	FA1136		FA1136		FA1136		FA1136		FA1136	FA1115B	FA1139	FA1127	FA1123	FB243	FA1124		FA241	FA1125	FA1143				FB239B				

FIG. 1 — DTU Circuit Pack Locations (J68952B-1)

INSTALL GROWTH DTU CIRCUIT PACKS AND POWER UNITS (J68952B-1)

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[1] Determine location of VIU
    to be added. See FIG. 1

Growth VIU
circuit pack
selected

AND

[2] Select circuit packs per
    TABLE A for VIU to be added

TABLE A		
VIU PLUG-IN CIRCUIT PACKS		
QUANTITY	NUMBER	NAME
1	**80A**	Power Unit
1	**81A**	Power Unit
1	**FA571**	PCM Cable Transmitter
2	**FA720**	Transfer Gate Timing Logic
4	**FA721**	Translator
1	**FA722**	Select and Hold Timing Logic
2	**FA723**	Coder-Timing Logic
2	**FA724**	Decoder-Timing Logic
1	**FA725**	Coder Output PCM
1	**FA726**	Decoder Output PCM
1	**FA727**	Access 1
1	**FA728**	Access 2
1	**FA729**	Clock Select and Buffer
1	**FA730**	Retiming Register
1	**FA731**	Maintenance Control
1	**FA732**	Access Control
1	**FA733**	Serial Framing Detector and Squelch
1	**FB220**	PCM Dual Line Driver
1	**FB480**	Equalizer Timing Extractor
16	**JA1**	Input Gate and Filter
16	**JA2**	Output Gate and Filter
2	**JA3**	Transfer Gate
2	**JA4**	Signal and Distortion Detectors
2	**JA5**	Select and Hold
2	**JA6**	Coder
2	**JA7**	Decoder

CONNECTOR FIELD

POWER CONVERTERS

CONNECTOR FIELD

CONNECTOR FIELD

	FUSE PANEL	
RELAY	RELAY	RELAY
RELAY	INDICATOR UNIT	RELAY
CONTROL PANEL		CONTROL PANEL
	VIC	
VIU NO. 2		VIU NO. 6
VIU NO. 1	VIU NO. 7 (SPARE)	VIU NO. 5
VIU NO. 0	VIU NO. 3	VIU NO. 4

FIG. 1 — VIF Frame — Front View

DETERMINE VIU EQUIPMENT TO BE ADDED AND SELECT CIRCUIT PACKS

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[1] At VIF fuse panel, remove **+140V** and **+24V** fuses (if installed) for VIU being added. See FIG. 1

Page 6

VIU 0 FUSES VIU 1 FUSES VIU 4 FUSES VIU 5 FUSES

FUSE PNL

+140V
A

+140V
B

+24V
0

+24V
1

VIU 2 FUSES   VIU 3 FUSES   VIU 6 FUSES   VIU 7 FUSES

FIG. 1

REMOVE POWER AND INSTALL VIU CIRCUIT PACKS AND POWER UNITS

[2] Verify that **INPUT** switches
on VIU 80A POWER UNIT
and 81A POWER UNIT are set
to **OFF**. See FIG. 2 and 3

[3] Install 80A and 81A power units
in added VIU position per FIG. 4

[4] See WARNING 1. Install VIU circuit
packs per FIG. 4

AND → Page 3

GRD +6V -6V

ALARM

OFF

INPUT

80A PWR UNIT

TURN OFF BEFORE

INSERTING/REMOVING

FIG. 2

GRD +3 -12

ALM

OFF

81A PWR UNIT

TURN OFF BEFORE
INSERTING/REMOVING

FIG. 3

8 JA1   FA 721 FA 720 FA 723 FA 720 FA 723 FA 725 FA 727 FA 728 FA 571 FA 729 FB 220 FA 721   8 JA2

JA 3 JA 6 JA 3 JA 6   80A POWER UNIT   81A POWER UNIT   JA 7 JA 5 JA 7 JA 5 JA 4 JA 4

8 JA1   FA 721 FA 731 FA 732 FA 480 FA 567 FA 733 FA 726 FA 724 FA 724 FA 722 FA 721   8 JA2

FIG. 4

REMOVE POWER AND INSTALL VIU CIRCUIT PACKS AND POWER UNITS

[5] Insert **+140V** and **+24V** fuses for added VIU into VIF fuse panel. See FIG. 1, Page 1

[6] Observe all JA18 service status indicators on VIF

```
        JA18
        SRV
        STAT
        IND

     A        B
     o        o
     VIU ALARM

     A        B
     o        o
      SPARE
     ASSIGNED

        o
      SWITCH
      CONFIRM
```

FIG. 5

[7] Are lamps on all JA18 service status circuit packs off. See FIG. 5

[8] Resolve problem and restore any operational VIU that is protection switched

No

Yes

[9] Read CAUTION 1. Set **PSW PWR** switch on control panel in bay 2 to **OFF**. See FIG. 6

[10] Simultaneously set input switches on 80A power unit and 81A power unit in added VIU to **ON**

[11] Set **PSW PWR** switch on control panel in bay 2 to **ON**. See FIG. 6

AND

```
   12 REF              ON

   PSW    PWR          OFF
```

FIG. 6

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REMOVE POWER AND INSTALL VIU CIRCUIT PACKS AND POWER UNITS

[1] Obtain KS-14510/L5 multimeter
    (or equivalent) —————————————┐
                                 │
                                 ▼
[2] Connect black test lead to
    — **OHMS** pin jack on multimeter ————┐
                                          ▼
                                        (AND) ————————┐
[3] Connect red test lead to +   ▲   │
    pin jack on multimeter ————————————┘   │
                                          ▲   │
[4] Rotate **RANGE** switch to   │   │
    12 DC VOLTS ——————————————————————┘   │
                                                       ▼
    [5] Connect black test lead probe to
        GND pin jack on 80A power
        converter for
        VIU being added ——————————————————▶ (AND) ————▶ (Page 2)
                                             ▲
    [6] Connect red test lead   │
        probe to **+6V** pin jack   Multimeter indicates
        on 80A power converter   +5.7 to +6.3 on **AC—DC**
        in Step 5 ——————————(▶)—— scale ——————————————┘

CHECK 80A DC-DC POWER CONVERTER   6 AND —6 VOLT OUTPUT
OF GROWTH VIU BEING ADDED

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[7] Remove red and black test lead
    probes from pin jacks on 80A
    power converter ──┐
                                                                      │
                                                                      ▼
[8] Connect red test lead probe to   ╭─────╮
    GND pin jack on 80A power converter ──────────────────────▶│ AND │────┤
    of VIU being added   ╰─────╯
                                        Multimeter indicates   ▲
                                        −5.7 to −6.3 on bottom   │
[9] Connect black test lead probe to **-6V**   **AC─DC** scale   │
    on 80A power converter in Step 8 ──────────(→)───────────────┘

[1] Obtain KS-14510/L5 multimeter
    (or equivalent)

[2] Connect black test lead to
    – OHMS pin jack on multimeter

[3] Connect red test lead to **+**
    pin jack on multimeter

[4] Rotate **RANGE** switch to
    12 DC VOLTS

AND

[5] Connect black test lead probe to
    GND pin jack on 81A power
    converter for
    VIU being added

[6] Connect red test lead
    probe to **+3V** pin jack
    on 81A power converter
    in Step 5

Multimeter indicates
2.75 to 3.25 on **AC–DC**
scale

AND → Page 2

CHECK 81A DC-DC POWER CONVERTER   3 AND –12 VOLT OUTPUT
OF GROWTH VIU

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[7] Remove red and black test lead
    probes from pin jacks on 81A
    power converter ─────────────────────┐
                                         │
                                         ▼
[8] Connect red test lead probe to   ╭─────╮
    GND pin jack on 81A power converter ──▶│ AND │──┤
    for VIU being added ───────────────▶╰─────╯
                            Multimeter indicates   ▲
                            11.9 to 12.1 on bottom │
                            AC—DC scale   │
[9] Connect black test lead probe to **-12V**   (─▶)──┘
    on 81A power converter in Step 8 ──▶

CHECK 81A DC-DC POWER CONVERTER   3 AND —12 VOLT OUTPUT
OF GROWTH VIU

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[1] At TSI frame, remove TSI
    terminator loop cable or
    looping terminator from TSI
    port that will connect to
    added VIU. See FIG. 1

[2] At TSI frame, connect T
    and R coaxial cables (2)
    to TSI port (SPC and
    level no.) associated
    with added VIU

AND

[3] At VIF, connect T and R
    coaxial cables (2) at added
    VIU output ports per FIG. 2

FIG. 1 — TSI Port Locations

XMT o	o	o	o o	o	o 11o	
SPC 1						CLK 1
RCV o	o	o	o o	o	o 01o	o
LEV0						TIMING
XMT o	o	o	o o	o	o 10o	
SPC 0						CLK 0
RCV o	o	o	o o	o	o 00o	o

FIG. 2 — VIU Port Locations

VIU 1 T 3 T 5 T VIC VC
    R   R   R   VC
VIU 0 T 2 T 4 T 6 T
    R   R   R   R

REMOVE TSI PORT LOOP AND CONNECT DATA CABLES TO

TSI PORT AND VIU

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[1] Enter
VER:TRKNAME,TAN a;DETL!
a = First trunk assignment
    number of trunks
    served by VIU/DTU/DIU
    to be degrown

[2] Is output
message format
correct per
TABLE A

Yes

[4] Assure that
VIU/DTU/DIU
identified in
output message is
VIU/DTU/DIU to
be degrown

[5] Using output
message, record
OTAN number
for use later
in this procedure

No

[3] Determine
cause and resolve;
repeat from
Step 1

TABLE A			
VER:TRKNAME,TAN a ; DETL,		ISC b	OSC c
OTAN d - TAN e			
CIN f		BTFN g	
TSN h	TSN O'i		
j			
●			
●			
●			

a = Decimal TAN
b = Incoming signaling characteristics
c = Outgoing signaling characteristics
d = Octal trunk assignment number
e = Decimal TAN
f = Circuit identification name
g = Base traffic number of TSG
h = Decimal TSN
i = Octal TSN
j = Operational VIF and VIU trunk is assigned to

VERIFY TAN TO VIU/DTU/DIU ASSIGNMENT

Flowchart

[1] Enter set trunk status message per TABLE A

[2] Does output message show **COMPLETED TRK COUNT 120** for TAN of VIU/DTU/DIU being degrown. See TABLE B
— Yes → **[3]** Enter trunk status message per TABLE C
— No → Page 2

[3] Enter trunk status message per TABLE C

[4] Does output message show **COMPLETED TRK COUNT 120** for TAN of VIU/DTU/DIU being degrown. See TABLE D
— Yes → ■
— No → Page 2

TABLE A

TABLE A
SET:TRKSTAT CAD.DSA,OTAN a;SUM:NUM 120!
a = Octal trunk assignment number (previously recorded)

TABLE B

TABLE B
SET:TRKSTAT   OTAN a   NUM,SUM   COMPLETED TRK COUNT 120
a = First octal trunk assignment number of trunks assigned to VIU/DTU/DIU being degrown

TABLE C

TABLE C
OP:TRKSTAT,OTAN a;SUM:NUM 120!
a = First trunk assignment number of trunks assigned to VIU/DTU/DIU being degrown

TABLE D

TABLE D
OP:TRKSTAT   OTAN a   NUM,SUM   COMPLETED TRK COUNT 120
a = First octal trunk assignment number of trunks assigned to VIU/DTU/DIU being degrown

CHANGE DEGROWTH VIU/DTU/DIU TRUNKS TO CIRCUIT ADMINISTRATION DISABLED STATE AND VERIFY

[5] Enter trunk status
message per TABLE E

[6] Using output message,
record **OTAN** of each
trunk not set to **CAD.DSA**
state. See TABLE F

[7] Enter set trunk status
message using one **OTAN** recorded
in Step 6 per TABLE G

AND

[8] Does output
message indicate
trunk is in **CAD.DSA**
state per TABLE F

Yes →

[10] Have all
trunks recorded
in Step 6 been set
to **CAD.DSA** state

Yes →

No ↓

[9] Determine
cause and
resolve; repeat
from Step 7

No ↓

[11] Repeat from
Step 7 for next
OTAN recorded in
Step 6

[12] Repeat
from Page 1,
Step 3

TABLE E
OP:TRKSTAT,OTAN a:NUM 120!
a = First octal trunk assignment number of VIU/DTU/DIU being degrown

TABLE F
OP:TRKSTAT CAD.DSA <a>   TRAF <b>   ,OTANc • • • OP:TRKSTAT ,OTANd NUM   COMPLETED TRK COUNT 120
a = Maintenance control status b = State of trunk c = Trunk assignment number d = First trunk assignment number of trunks

TABLE G
SET:TRKSTAT CAD.DSA,OTAN a!
a = Octal trunk assignment number

CHANGE DEGROWTH VIU/DTU/DIU TRUNKS TO CIRCUIT ADMINISTRATION DISABLED STATE AND VERIFY

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```
┌─────────────────┐        ╱─────────────────────╲
│ [1] Enter       │       ╱  [2] Read NOTE 1. Does ╲
│ OP:OOSUNITS:a!  │──────▷   output message          ─── No ───│
│ a = VIF or DT or│       ╲  indicate any out-of-     ╱         │
│     DIF         │        ╲ service VIUs/DTUs/DIUs  ╱
└─────────────────┘         ╲ in degrowth VIF/DT/DIF╱
                             ╲─────────────────────╱
                                      │
                                      │ Yes
                                      ▼
                          ┌─────────────────────┐
                          │ [3] Clear diagnostic │
                          │ failure; ATP required│
                          │ VIU TOP-234-151-025  │
                          │ DTU TOP-234-151-045  │
                          │ DIF TOP-234-151-055. │
                          │ Repeat from Step 1   │
                          └─────────────────────┘
```

NOTE 1
The spare VIU/DTU/ DIU must not be protection switched in the spare position

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VERIFY THAT SPARE VIU/DTU/DIU IS AVAILABLE

```
┌──────────────────┐        ╱────────────────╲
│ [1] Enter        │       ╱  [2] Was VIU/     ╲        Yes
│ remove           │──────▶   DTU/DIU removed   ──────────┤
│ message per      │       ╲  from service     ╱
│ TABLE A          │        ╲────────────────╱
└──────────────────┘              │
                                  │ No
                                  ▼
                            ╱────────────────╲
                           ╱                   ╲     System
                              [3] Output          denied       ┌────────────────────┐
                              indicates          request       │ [5] Determine      │
                           ╲                   ╱  ─────────────▶│ why request was    │
                            ╲────────────────╱                 │ denied; resolve    │
                                  │                            │ and repeat from    │
                                  │ Invalid                    │ Step 1             │
                                  │ input                      └────────────────────┘
                                  │ message
                                  ▼
                            ┌──────────────────┐
                            │ [4] Repeat       │
                            │ from Step 1 to   │
                            │ insure message   │
                            │ was entered      │
                            │ correctly        │
                            └──────────────────┘
```

TABLE A
RMV:a b,c d!
a = VIF or DT or DIF
b = Member number of degrowth associated VIF/DT/DIF
c = VIU or DTU or DIU
d = Submember number of degrowth VIU/DTU/DIU

REMOVE DEGROWTH VIU/DTU/DIU FROM SERVICE

[1] Determine location of degrown ESU and its associated power converter using FIG. 1

→ Page 2

BAY 0   BAY 1

EQPT LOC	BUS ACCESS			COAX INTERFACE		EQPT LOC

	BUS ACCESS	COAX INTERFACE	

EQPT LOC			EQPT LOC
73	CONT 0	CONT 1	PWR CONTROL	PROT SWITCH	73
64			SWITCH AND INDICATOR PANEL	ESU 14 (SPARE)	64
55			ESU 12	ESU 13	55
46	ESU 4	ESU 5	ESU 10	ESU 11	46
37	ESU 2	ESU 3	ESU 8	ESU 9	37
28	ESU 0	ESU 1	ESU 6	ESU 7	28

142C POWER CONVERTERS

20	ESU 4	-9V	+5V	ESU 5	ESU 12	-9V	+5V	ESU 13	20
	ESU 2	CONT 0		ESU 3	ESU 10	CONT 1		ESU 11	
12	ESU 0	CONT 0		ESU 1	ESU 8	CONT 1		ESU 9	12
8	PANEL FUSES			PANEL FUSES	ESU 6	ESU 14		ESU 7	8

142C POWER CONVERTERS

FIG. 1 — Echo Suppressor Terminal — Front View

REMOVE DEGROWN ESU CIRCUIT PACKS AND POWER UNIT

[2] At EST fuse panel, remove **+140V** fuse (if installed) for degrown ESU [FIG. 2]

[3] Verify that power switch on degrown ESU 142C power unit is to OFF position

[4] Remove 142C power unit

[5] See WARNING 1. Remove degrown ESU circuit packs per FIG. 3

AND

ESU 0, 2, 4, 6, 8, 10, 12

ESU 1, 3, 5, 7, 9, 11, 13

NH6 NH5 NH5 NH4 NH2 NH1 NH3 NH8 NH7

NH7 NH8 NH3 NH1 NH2 NH4 NH5 NH5 NH6

FIG. 3 — ESU Circuit Packs

+24V A

+24V B

+140V A

+140V B

ESU 0 FUSE
ESU 1 FUSE
ESU 2 FUSE
ESU 6 FUSE
ESU 7 FUSE
ESU 8 FUSE
ESU 9 FUSE
ESU 13 FUSE
ESU 3 FUSE
ESU 4 FUSE
ESU 5 FUSE
ESU 10 FUSE
ESU 11 FUSE
ESU 12 FUSE
ESU 14 FUSE
OTHER FUSES

FIG. 2 — EST Fuse Panel — Front View

REMOVE DEGROWN ESU CIRCUIT PACKS AND POWER UNIT

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[1] Enter
RMV:EST a**,ESU** b!
a = Member number of
    EST associated with
    degrowth VIU/DTU/DIU
b = Submember number of
    ESU associated with
    degrowth VIU/DTU/DIU

[2] Was ESU
removed
from service

Yes

No

[3] Output
indicates

System
denied
request

[5] Determine
why request was
denied; resolve
and repeat from
Step 1

Invalid
input
message

[4] Repeat
from Step 1 to
insure message
was entered
correctly

REMOVE ESU FROM SERVICE

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[1] See WARNING 1. At degrowth related ESU,
    remove **FB618** circuit pack associated
    with degrowth VIU/DTU

[2] At circuit pack removed in
    Step 1, disconnect EST to TSI
    port data cables

[3] At circuit pack removed in Step 1,
    disconnect ESU to VIU/DTU data cables

[4] Get **FB619** strap pack

[5] Connect TSI port to ESU data cables
    at **FB619** strap pack

[6] Connect VIU to ESU data cables at
    FB619 strap pack

[7] At degrowth associated EST, install
    FB619 strap pack

AND → Strap pack installed

REPLACE FB618 CIRCUIT PACK WITH FB619 STRAP PACK

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[1] At TSI frame, disconnect T and R
    coaxial cables (2) from TSI port
    (SPC and level No.) associated
    with degrown VIU/DTU/DIU.
    See FIG. 1 (TSI) or
    FIG. 2 (TSI-2)

[2] Get looping terminator
    (ED4A143) or TSI loop
    cable (ED4A802)

AND

[3] Connect looping terminator
    or loop cable to TSI port
    associated with degrown
    VIU/DTU/DIU

[4] Were
loop cables
or terminator
used in Step 3

Loop
cables

[5] Tag T and R
cables removed
in Step 1 and
place in cable
form

Looping
terminator

[6] Connect T and
R cables removed in
Step 1 to looping
terminator (installed
in Step 3) at TSI port
associated with degrown
VIU/DTU/DIU

FIG. 1 — TSI Port Locations (J4A001A)

FIG. 2 — TSI-2 Port Locations (J4A001B)

DISCONNECT TSI PORT CABLES AND INSTALL LOOPING CABLE OR TERMINATOR

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[1] At degrowth VIU, set
    INPUT switch on 80A
    and 81A power unit to OFF.
    See FIG. 1 and 2

AND → Page 2

[2] At VIF fuse panel,
    remove **+24V** fuses
    for VIU being
    degrown. See FIG. 3

GRD +6V -6V

ALARM

OFF

INPUT

80A PWR UNIT

TURN OFF BEFORE

INSERTING/REMOVING

FIG. 1

GRD +3 -12

ALM

OFF

81A PWR UNIT

TURN OFF BEFORE
INSERTING/REMOVING

FIG. 2

VIU 0 FUSES   VIU 1 FUSES   VIU 4 FUSES   VIU 5 FUSES

FUSE PNL

+140V
A

+140V
B

+24V
0

+24V
1

VIU 2 FUSES   VIU 3 FUSES   VIU 6 FUSES   VIU 7 FUSES

FIG. 3

REMOVE VIU CIRCUIT PACKS AND POWER UNITS AND DISCONNECT CABLES

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At degrowth VIU:
    [3] Remove 80A and 81A
        power units per FIG. 4

[4] See WARNING 1.
    Remove VIU circuit
    packs per FIG. 4

AND

[5] Are cables
to be removed
from the degrown
VIU

No

Yes

[6] At degrowth
VIF frame, disconnect
T and R cables (2)
from degrown VIU
output ports per
FIG. 5

[7] Tag cables
removed in Step
6 and place in
cable form

VIU	T 1	T 3	T 5	VC VIC
	R	R	R	VC

VIU	T 0	T 2	T 4	T 6
	R	R	R	R

FIG. 5 — VIU Port Locations

8 JA1	FA 721	FA 720	FA 723	FA 720	FA 725	FA 727	FA 728	FA 571	FA 729	FB 220	FA 721	8 JA2

JA 3	JA 6	JA 3	JA 6	80A POWER UNIT	81A POWER UNIT	JA 7	JA 5	JA 7	JA 5	JA 4	JA 4

8 JA1	FA 721	FA 731	FA 732	FA 480	FA 567	FA 733	FA 726	FA 724	FA 724	FA 722	FA 721	8 JA2

FIG. 4

WARNING 1
*An antistatic
wrist strap must
be worn to prevent
electrostatic
discharge and
possible damage
to circuit packs
while handling*

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REMOVE VIU CIRCUIT PACKS AND POWER UNITS AND DISCONNECT CABLES

[1] Determine location of DTU
to be added. See FIG. 1 ──┐

(AND)

[2] Select circuit packs per
TABLE A for DTU to be
added ──────

TABLE A					
DTU PLUG-IN CIRCUIT PACKS					
QUANTITY	NUMBER	NAME	QUANTITY	NUMBER	NAME
10	FA633	Random Access Memory	1	FA1126	Bipolar Violation Detector and Unit Error Source Register Scanner
5	FA1110	Receive Converter			
5	FA1111	Receive Store Control			
5	FA1112	Transmit Converter	2	FA1127	Error Source Register
1	FA1113	Receiver Multiplex 1	1	FA1128	GBC Decoding
1	FA1114	Receiver Multiplex 2	1	FA1129	GWC Decoding
1	FA1115	Transmit Processing	1	FA1130	GGC Decoding
1	FA1116	Framing Logic	1	FA1131	E & M Store
1	FA1117	Old Data Store Logic	3	FA1132	Clock Select
1	FA1118	Suitability Store Logic	5	FB235	Bipolar to Unipolar Converter
2	FA1119	8-Bit Recirculating Store			
1	FA1120	Signaling	1	FB239	Regulator
1	FA1121	Local Alarm	1	FB241	Data and Timing
1	FA1122	Remote Alarm	1	FA243	TSI Line Driver
1	FA1123	T Access and Transmitter	3	145A	Power Unit
1	FA1124	Receiver Access	1	145B	Power Unit
1	FA1125	TSI Link Receiver			

CONNECTOR PANEL
LINE EQUALIZER
PROT SW PANEL

FUSE & ALM PANEL

DTU 8 (SPARE)	DTU 7
	DTC 1
DTU 6	DTC 0
DTU 4	DTU 5
DTU 2	DTU 3
DTU 0	DTU 1

COMM PANEL

+24V FILTER

FIG. 1 — Digroup Terminal Frame — Front View

DETERMINE DTU EQUIPMENT TO BE ADDED AND SELECT CIRCUIT PACKS (J68952A-1)

[1] Verify that associated circuit pack
    is installed in line equalizer panel for
    growth DTU. See FIG. 1 and 2 ─────────┐
                                          │
                                    ┌─────┴─────┐
                                    │   AND   │────┤
                                    └─────┬─────┘
[2] Verify that associated circuit   │
    pack is installed in protection   │
    switch panel for growth DTU.   │
    See FIG. 1 and 3, Page 2 ─────────────┘

CONNECTOR PANEL ──▶   ◀── FUSE & ALARM
LINE EQUALIZER ──▶   PANEL
                                        DTU 7
PROT SW PANEL ──▶
                   DTU 8   DTC 1
                   (SPARE)
                                                 ◀── COMM PANEL
                   DTU 6   DTC 0

                   DTU 4   DTU 5

                   DTU 2   DTU 3

                   DTU 0   DTU 1
                                                 ◀── +24V FILTER

**FIG. 1 — Digroup Terminal Frame —
Front View**

	2		4		6		8		10		12		14		16	
	FB 23*_		FB 23*_		FB 23*_		FB 23*_		FB 23*_		FB 23*_		FB 23*_		FB 23*_	

ASSOCIATED WITH DTU 0
ASSOCIATED WITH DTU 1
ASSOCIATED WITH DTU 2
ASSOCIATED WITH DTU 3
ASSOCIATED WITH DTU 4
ASSOCIATED WITH DTU 5
ASSOCIATED WITH DTU 6
ASSOCIATED WITH DTU 7

* TYPE OF FB 23 _ CIRCUIT PACKS TO BE USED IS DETERMINED BY CABLE DISTANCE FROM DTF TO DSX-1, LT-1,
  OR REPEATER BAY. SEE BELOW.

TO DSX-1_____ OR LT-1_____   TO REPEATER BAY_____
  0 TO 54 FT   FB 236   0 TO 149 FT   FB 236
 55 TO 354 FT   FB 237   150 TO 449 FT   FB 237
355 TO 655 FT   FB 238   450 TO 750 FT   FB 238

FIG. 2 — Line Equalizer Panel — Front View

**VERIFY ASSOCIATED CIRCUIT PACK IS INSTALLED IN LINE
EQUALIZER AND PROTECTION SWITCH PANELS (DT FRAME J68952A-1)**

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ASSOCIATED WITH DTU 0   ASSOCIATED WITH DTU 1   ASSOCIATED WITH DTU 2   ASSOCIATED WITH DTU 3   ASSOCIATED WITH DTU 4   ASSOCIATED WITH DTU 5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
FC 25					FC 25					FC 25				FC 25					FC 25					FC 25			

ASSOCIATED WITH DTU 6   ASSOCIATED WITH DTU 7   ASSOCIATED WITH DTU 8

29	30	31	32	33	34	35	36	37	38	39	40	41	42
FC 25					FC 25								FC 26

FIG. 3 — Protection Switch Panel — Front View

VERIFY ASSOCIATED CIRCUIT PACK IS INSTALLED IN LINE EQUALIZER AND PROTECTION SWITCH PANELS (DT FRAME J68952A-1)

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[1] At TSI frame, remove TSI
    loop cable or looping terminator
    as applicable, from TSI port
    that will connect to added DTU

(AND)

T and R cables from
DTU connected at TSI

[2] Connect T and R cables from
    growth DTU to terminals where
    loop cable was removed

[3] At digroup terminal frame connector
    panel, remove T and R loop cable from
    growth DTU output coax terminal block

(AND)

T and R cables
connected at DT frame

[4] Connect interface cables from TSI port
    to terminal block where loop cable or
    H connector block was removed

REMOVE TSI PORT LOOP CABLES AND DTU OUTPUT LOOP CABLES AND CONNECT DATA CABLES TO TSI PORT AND DTU

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[1] Is DTU being added initial unit in group (0-3 or 4-7)

No → [6] At DSX or repeater bay, determine that added DTU is looped and DTU-DSX cables are connected

[7] At DT, determine that DT-DSX cables are connected at connector panel to proper connector fields

Yes

At DSX or repeater bay:
[2] Make crossconnects for T1-D1 groups feeding added DTU and unequipped DTU(s) associated with input connector field

[3] Connect cables from DT frame for added DTU and unequipped DTU(s) in input connector field

AND

At DT Frame:
[4] Remove loop connections for group being grown

[5] Insert DSX-DT frame cable connector plugs to connector fields where loops were removed

AND

COMPLETE CABLING AND LOOP CONNECTIONS

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[1] See WARNING 1. Remove associated circuit pack from line equalizer panel for degrowth DTU. See FIG. 1 and 2 ────────┐

AND ──▶ Page 3

[2] See WARNING 1. Remove associated circuit pack from protection switch panel for degrowth DTU. See FIG. 1 and FIG. 3, Page 2 ────┘

CONNECTOR PANEL ──▶
LINE EQUALIZER ──▶
PROT SW PANEL ──▶

FUSE & ALARM PANEL ◀──
COMM PANEL ◀──
+24V FILTER ◀──

	DTU 7
DTU 8 (SPARE)	DTC 1
DTU 6	DTC 0
DTU 4	DTU 5
DTU 2	DTU 3
DTU 0	DTU 1

FIG. 1 — Digroup Terminal Frame — Front View

ASSOCIATED WITH DTU 0
ASSOCIATED WITH DTU 1
ASSOCIATED WITH DTU 2
ASSOCIATED WITH DTU 3
ASSOCIATED WITH DTU 4
ASSOCIATED WITH DTU 5
ASSOCIATED WITH DTU 6
ASSOCIATED WITH DTU 7

	2		4		6		8		10		12		14		16	
	FB 23*_		FB 23*_		FB 23*_		FB 23*_		FB 23*_		FB 23*_		FB 23*_		FB 23*_	

* TYPE OF FB 23 _ CIRCUIT PACKS USED IS DETERMINED BY CABLE DISTANCE FROM DTF TO DSX-1, LT-1, OR REPEATER BAY. SEE BELOW.

```
TO DSX-1_____ OR LT-1_____        TO REPEATER BAY_____
  0 TO 54 FT    FB 236                   0 TO 149 FT    FB 236
 55 TO 354 FT   FB 237                 150 TO 449 FT    FB 237
355 TO 655 FT   FB 238                 450 TO 750 FT    FB 238
```

FIG. 2 — Line Equalizer Panel — Front View

WARNING 1
An antistatic wrist strap must be worn to prevent electrostatic discharge and possible damage to circuit packs while handling

REMOVE DEGROWTH DTU CIRCUIT PACK POWER UNITS AND DISCONNECT CABLES (J68952A-1)

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
FC 25					FC 25					FC 25				FC 25					FC 25					FC 25			

ASSOCIATED WITH DTU 6   ASSOCIATED WITH DTU 7   ASSOCIATED WITH DTU 8

29	30	31	32	33	34	35	36	37	38	39	40	41	42
FC 25					FC 25								FC 26

FIG. 3 — Protection Switch Panel — Front View

REMOVE DEGROWTH DTU CIRCUIT PACK POWER UNITS AND DISCONNECT CABLES (J68952A-1)

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At degrowth DTU:

[3] Set **PWR OFF**
    switch to **OFF**.
    See FIG. 4

[4] See WARNING 2.
    Remove DTU
    circuit packs
    per FIG. 4

AND

[5] Are cables
to be removed
from degrown
DTU

No

Yes

[6] At degrowth
DT, disconnect
T and R cables
from degrowth
DTU output ports

[7] Tag cables
removed in
Step 6 and
place in cable
form

WARNING 2
An antistatic
wrist strap must
be worn to prevent
electrostatic
discharge and
possible damage
to circuit packs
while handling

Row 1: FA1110 | FA1111 | FA633 | FA1110 | FA1111 | FA633 | FA1110 | FA1111 | FA633 | FA1110 | FA1111 | FA633 | FA1113 | FA633 | FA1111 | FA1110 | FA1132 | FA1132 | | | | | 145A | | | | 145A

Row 2: | | FA235 | | FA235 | | FA235 | | FA235 | | FA235 | FA1114 | FA1127 | FA1130 | FA1129 | FA1121 | FA1122 | FA1128 | FA1131 | FA1120 | FA1116 | FA1119 | FA1118 | FA1117 | FA1119 | 145B | | | 145A

Row 3: FA1132 | FA1112 | FA633 | FA1112 | FA633 | FA1112 | FA633 | FA1112 | FA633 | FA1112 | FA633 | FA1115 | FA1126 | FA1127 | FA1123 | FB243 | FA1124 | | FA241 | FA1125 | | | | FB239 | PWR / OFF

FIG. 4 — DTU Circuit Pack Locations (J68952A-1)

REMOVE DEGROWTH DTU CIRCUIT PACKS AND POWER UNITS AND DISCONNECT CABLES (J68952A-1)

[1] See WARNING 1. Remove associated circuit
    pack from line equalizer panel for degrown
    DTU. See FIG. 1 and 2 ⟶

[2] See WARNING 1. Remove associated
    circuit pack from protection
    switch panel for degrown DTU.
    See FIG. 1 and FIG. 3, Page 2 ⟶

AND ⟶ (Page 3)

CONNECTOR PANEL ⟶
LINE EQUALIZER ⟶
PROT SW PANEL ⟶

⟵ FUSE & ALARM PANEL
⟵ COMM PANEL
⟵ +24V FILTER

	DTU 7
DTU 8 (SPARE)	DTC 1
DTU 6	DTC 0
DTU 4	DTU 5
DTU 2	DTU 3
DTU 0	DTU 1

**FIG. 1 — Digroup Terminal Frame —
Front View**

ASSOCIATED WITH DTU 0
ASSOCIATED WITH DTU 1
ASSOCIATED WITH DTU 2
ASSOCIATED WITH DTU 3
ASSOCIATED WITH DTU 4
ASSOCIATED WITH DTU 5
ASSOCIATED WITH DTU 6
ASSOCIATED WITH DTU 7

	2		4		6		8		10		12		14		16	
	FB 24*_		FB 24*_		FB 24*_		FB 24*_		FB 24*_		FB 24*_		FB 24*_		FB 24*_	

* TYPE OF FB 24 _ CIRCUIT PACKS TO BE USED IS DETERMINED BY CABLE DISTANCE FROM DTF TO DSX-1, LT-1
  OR REPEATER BAY. SEE BELOW.

```
  0 TO 219 FT    FB 246
220 TO 439 FT    FB 247
440 TO 655 FT    FB 248
```

FIG. 2 — Line Equalizer Panel — Front View

**REMOVE DEGROWTH DTU CIRCUIT PACK, POWER UNITS AND DISCONNECT
CABLES (J68952B-1)**

WARNING 1 *An antistatic wrist strap must be worn to prevent electrostatic discharge and possible damage to circuit packs while handling*	
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ASSOCIATED WITH DTU 0   ASSOCIATED WITH DTU 1   ASSOCIATED WITH DTU 2   ASSOCIATED WITH DTU 3   ASSOCIATED WITH DTU 4   ASSOCIATED WITH DTU 5

1	2	3	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	21	22	23	24	25	26	27	28
FC 25					FC 25					FC 25					FC 25					FC 25					FC 25			

ASSOCIATED WITH DTU 6   ASSOCIATED WITH DTU 7   ASSOCIATED WITH DTU 8

29	30	31	32	33	34	35	36	37	38	39	40	41	42
FC 25					FC 25								FC 26

FIG. 3 — Protection Switch Panel — Front View

REMOVE DEGROWTH DTU CIRCUIT PACK, POWER UNITS AND DISCONNECT CABLES (J68952B-1)

```
┌─────────────────┐         ╱─────────────────╲
│ [3] See WARNING 2.│        ╱ [4] Are cables   ╲          No
│ At degrowth       │───────▶  to be removed     ────────────────────────┐
│ DTU, remove       │        ╲ from degrown      ╱                        │
│ circuit packs     │         ╲ DTU             ╱                         │
│ per FIG. 4        │          ╲───────────────╱                          │
└─────────────────┘                   │                                  │
                                    Yes│                                  │
                                       ▼                                  │
                          ┌─────────────────┐   ┌─────────────────┐       │
                          │ [5] At degrowth  │   │ [6] Tag cables   │      │
                          │ DT, disconnect   │   │ removed in       │      ▼
                          │ T and R cables   │──▶│ Step 5 and       │──▶ ──┤
                          │ from degrowth    │   │ place in cable   │      │
                          │ DTU output ports │   │ form             │      │
                          └─────────────────┘   └─────────────────┘
```

WARNING 2
An antistatic wrist strap must be worn to prevent electrostatic discharge and possible damage to circuit packs while handling
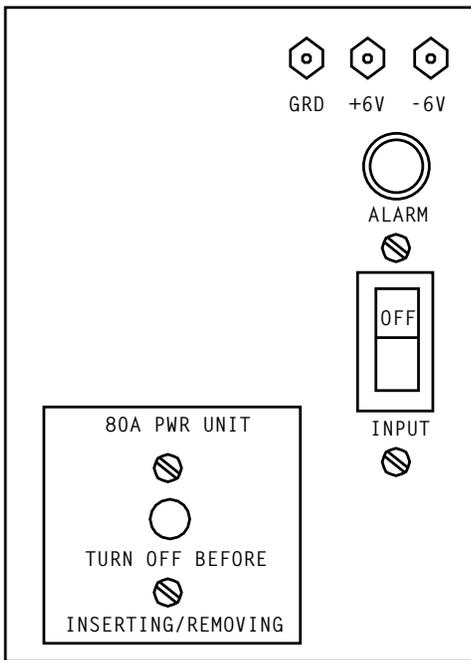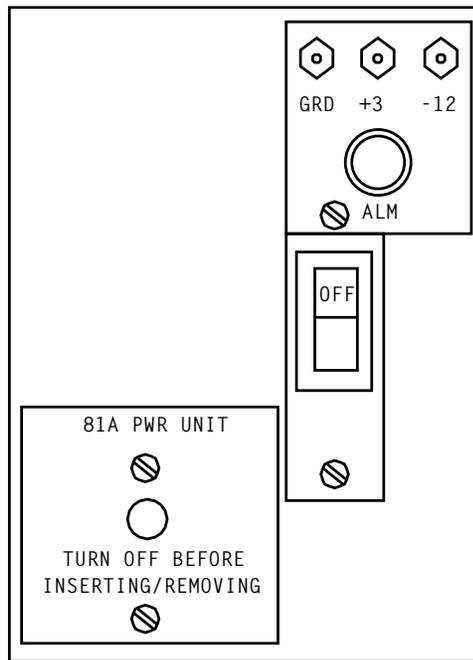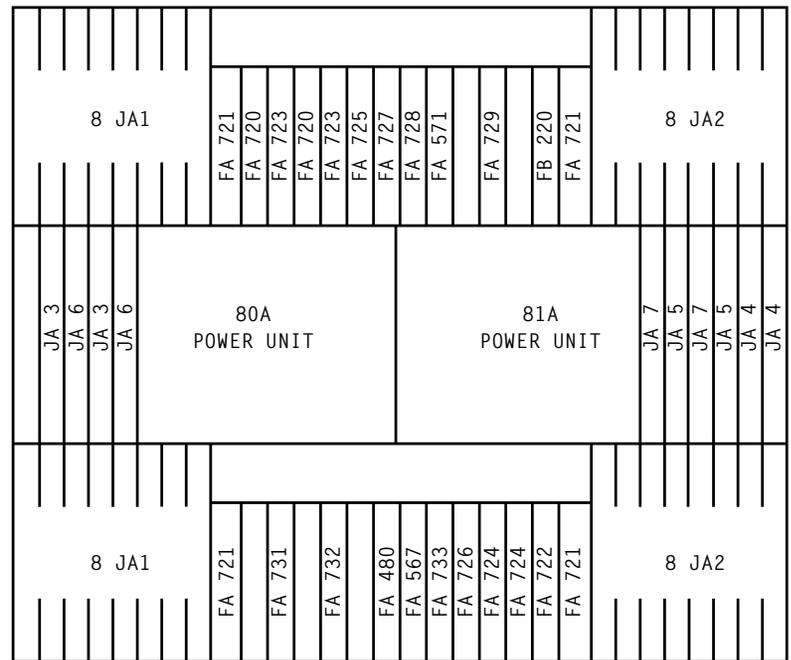
	FA1110	FA1111		FA1110	FA1111		FA1110	FA1111	FA1134	FA1110	FA1111		FA1135		FA1111	FA1110		FA1137							

— 146 C —

| | | | FB235 | | FB235 | | FB235 | | FB235 | | FB235 | FA1114 | FA1127 | FA1138 | FA1129 | FA1121 | FA1122 | FA1131 | FA1120 | FA1116 | FA1119 | FA1118 | FA1117 | FA1119 |

— 140 C —

| | FA1136 | | FA1136 | | FA1136 | | FA1136 | | FA1136 | FA1115B | FA1139 | FA1127 | FA1123 | FB243 | FA1124 | FA241 | FA1125 | FA1143 | | | FB239B |

FIG. 4 — DTU Circuit Pack Locations (J68952B-1)

REMOVE DEGROWTH DTU CIRCUIT PACKS AND POWER UNITS AND DISCONNECT CABLES (J68952B-1)

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[1] Determine location
    of ESU to be grown
    and its associated
    power converter
    using FIG. 1

[2] Select circuit
    packs per TABLE A
    for ESU to be
    grown

AND

TABLE A		
ESU PLUG-IN CIRCUIT PACKS		
QUANTITY	NUMBER	NAME
1	NH1	TR Interface
1	NH2	Receive Path
1	NH3	Transmit Path
1	NH4	ESU Processor
2	NH5	Stretch/Compare
1	NH6	Tone Detector
1	NH7	ESU Controller Interface Scanner And Clock Interface
1	NH8	ESU Controller Interface Status And Maintenance Bus Interface
1	FB618	Coax Interface
1	142C	Power Unit

BAY 0

BAY 1

EQPT LOC	BUS ACCESS			COAX INTERFACE			EQPT LOC
73				PWR CONTROL		PROT SWITCH	73
64	CONT 0		CONT 1	SWITCH AND INDICATOR PANEL		ESU 14 (SPARE)	64
55				ESU 12		ESU 13	55
46	ESU 4		ESU 5	ESU 10		ESU 11	46
37	ESU 2		ESU 3	ESU 8		ESU 9	37
28	ESU 0		ESU 1	ESU 6		ESU 7	28

POWER CONVERTERS

20	ESU 4	-9V	+5V	ESU 5	ESU 12	-9V	+5V	ESU 13	20
	ESU 2	CONT 0		ESU 3	ESU 10	CONT 1		ESU 11	
12	ESU 0	CONT 0		ESU 1	ESU 8	CONT 1		ESU 9	12
8	PANEL FUSES			PANEL FUSES	ESU 6	ESU 14		ESU 7	8

POWER CONVERTERS

FIG. 1 — Echo Suppressor Terminal — Front View

DETERMINE LOCATIONS OF ESU EQUIPMENT AND SELECT CIRCUIT PACKS

[1] At EST fuse panel, remove **+140V** fuse (if installed) for growth ESU using FIG. 1

[2] Verify that power switch on growth ESU 142C power unit is to OFF position

[3] Install 142C power unit

[4] See WARNING 1. Install growth ESU circuit packs per FIG. 2

[5] Insert fuse removed in Step 1

[6] Set power switch on 142C power unit to ON position

AND

ESU 0, 2, 4, 6, 8, 10, 12   ESU 1, 3, 5, 7, 9, 11, 13

NH6	NH5	NH5	NH4	NH2	NH1	NH3	NH8	NH7		NH7	NH8	NH3	NH1	NH2	NH4	NH5	NH5	NH6
01	02	04	06	07	08	09	10	11		12	13	14	15	16	17	19	21	22

— DESIGNATIONS —

FIG. 2 — ESU Circuit Packs

+24V A

+140V A

+24V B

+140V B

ESU 0 FUSE

ESU 1 FUSE

ESU 2 FUSE

ESU 6 FUSE

ESU 7 FUSE

ESU 8 FUSE

ESU 9 FUSE

ESU 13 FUSE

ESU 3 FUSE

ESU 4 FUSE

ESU 5 FUSE

ESU 10 FUSE

ESU 11 FUSE

ESU 12 FUSE

ESU 14 FUSE

OTHER FUSES

FIG. 1 — EST Fuse Panel — Front View

WARNING 1
An antistatic wrist strap must be worn to prevent electrostatic discharge and possible damage to circuit packs while handling

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INSTALL GROWTH ESU CIRCUIT PACKS AND POWER UNIT

FIG. 1 — Location of T and R Cables and FB619/FB618 Packs

LOCATION OF T AND R DATA CABLES AND FB619/FB618 CIRCUIT PACKS

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SUMMARY
Convert octal digits representing TSI clock information of
entry output word 17 to decimal. Compare entry output data
against office records. If entry data and office records
do not agree, record for later use.

[1] See octal word 17 in entry
    output message

[2] Convert four leftmost octal
    digits of word 17 in entry
    output to binary digits
    and record

[3] Convert bits 14 through
    19 to decimal TSI member number
    and record. See FIG. 1

[4] Note bit 13 and record
    for SPC assignment. See
    TABLE A

AND

Octal to
decimal
conversion
completed

Page 2

TABLE A	
BIT 13 VALUE	SPC ASSIGNED
0	0
1	1

entry data octal output →

0	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	U	U	U	U	U	U	Z	0	0	0	X	X	X	X	X	X	X	X	X	X

TSI MEMBER NUMBER — SPC 0/1

TSI SUPPLYING CLOCK TO
THIS VIF

FIG. 1 — Entry Data Word 17 Layout

VERIFY TSI SUPPLYING CLOCK TO GROWTH VIF

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[5] Get office record T-nnnn-Hn-467
    or equivalent. See NOTE 1 ─────────────┐

[6] Locate line on office record
    containing growth VIF ───────────┐

[7] Locate TSI member number on
    line found in Step 6 ─────────┐

                                        AND ──▶ [11] For later
                                                       reference, record
[8] Compare TSI member number found   any discrepancy
    in Step 3, Page 1; and Step 7. Note   noted in Steps 8
    any discrepancy for later use ──┘   and 10

[9] Locate SPC value on line found
    in Step 6 ──────────────────┘

[10] Compare SPC value found in Step 4,
     Page 1; and Step 9. Note any
     discrepancy for later use ──────┘

VERIFY TSI SUPPLYING CLOCK TO GROWTH VIF

[1] At bay 1 of TSI, remove looping
    terminator from TSI port that will
    connect to growth DIU. See FIG. 1

[2] At TSI frame, connect T and R
    coaxial cables to TSI port
    identified in Step 1. See
    FIG. 1

[3] At DIF Protection Switch Relay
    pack; connect T and R coaxial
    cables to growth DIU output
    port. See FIG. 2

AND

FIG. 1 — TSI Input/Output Ports

CONNECTORS FOR:

DIU 0/16, DIU 1/17, DIU 2/18, DIU 3/19, DIU 4/20, DIU 5/21, DIU 6/22, DIU 7/23

CONNECTORS FOR:

DIU 8/24, DIU 9/25, DIU 10/26, DIU 11/27, DIU 12/28, DIU 13/29, DIU 14/30, DIU 15/31

EQPT LOC 0/277

013 027 041 055   073 087 101 115   177 191 205 219   237 251 265 279

EQPT LOC 0/277

**FIG. 2 — T and R Cable Assignments at Protection Switch
Relay Packs of DIF (Bay 0 or 2)**

REMOVE TSI PORT LOOP AND CONNECT DATA CABLES TO
TSI PORT AND GROWTH DIU

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SUMMARY
Convert octal digits representing TSI information of entry output word(s) to decimal. Compare entry output data against office records. If entry data and office records do not agree, record discrepancies for later use. If this procedure is used as a result of a DIF growth, repeat procedure for each DIU being equipped.

[1] Identify octal word being verified for DIU in entry output message using TABLE A

[2] See FIG. 1 for word layout

[3] Convert the four rightmost octal digits in word identified in Step 1 to binary digits and record

[4] Convert bits 0 through 2 to decimal TSI port number and record

[5] Record bit 3 for SPC assignment

[6] Convert bits 4 through 9 to decimal TSI member number and record

Octal to decimal conversion completed

AND

Page 2

TABLE A			
DIU	OCTAL WORD	DIU	OCTAL WORD
0	16	16	36
1	17	17	37
2	20	18	40
3	21	19	41
4	22	20	42
5	23	21	43
6	24	22	44
7	25	23	45
8	26	24	46
9	27	25	47
10	30	26	50
11	31	27	51
12	32	28	52
13	33	29	53
14	34	30	54
15	35	31	55

entry data octal output →

bit position →

binary values →

Y			Y			Y			Y			Y		
13	12	11	10	9	8	7	6	5	4	3	2	1	0	
V	V	V	V	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	

TSI MEMBER NUMBER | S P C | TSI PORT NO.

DIU TO TSI LEVEL ASSIGNMENT

FIG. 1 — Word Layout Pertaining to TSI Port Assignment

VERIFY DIU TO TSI PORT ASSIGNMENT

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[7] Get office record containing
DIU to TSI port assignments

[8] Locate line on office record
containing DIF and DIU
being verified

AND

[9] Locate TSI port number on line
found in Step 8

[10] Compare TSI port numbers found in
Step 4, Page 1; and Step 9. Note
any discrepancy for later use

[11] Locate SPC value on line found in Step 8

[12] Compare SPC number found in Step 5,
Page 1; and Step 11. Note any
discrepancy for later use

AND

Page 3

[13] Locate TSI member number on line
found in Step 8

[14] Compare TSI member number found in
Step 6, Page 1; and Step 13. Note
any discrepancy for later use

[15] Record DIU to TSI level assignment
for later reference

VERIFY DIU TO TSI PORT ASSIGNMENT

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```
┌─────────────────────┐
│ [16] For later      │
│ reference, record   │
│ any discrepancy     │
│ noted on Page 2,    │
│ Steps 10, 12, or 14 │
└─────────────────────┘
           │
           ▼
      ╱─────────────╲
     ╱ [17] Is this  ╲        No
    ╱  procedure being ╲─────────────┐
    ╲  done as a result ╱            │
     ╲ of a DIF growth ╱             │
      ╲───────────────╱              │
           │                         │
          Yes                        │
           │                         │
           ▼                         │
┌─────────────────────┐             │
│ [18] Repeat from    │             │
│ Step 1, Page 1,     │             ▼
│ for each            │──────────────│
│ equipped DIU        │
│ (DIU 0-31)          │
└─────────────────────┘
```

VERIFY DIU TO TSI PORT ASSIGNMENT

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SUMMARY
Using TGR SME verify input message, call up terminal unit UT translator and verify that resulting octal output data, when converted, agrees with office records. Refer to entry word

explanations in TABLE C, Page 7 or TABLE D, Page 9, as required, for assistance in interpreting specific data fields. If it is determined that UT or SLC entry data is in error, word change(s) may be required.

[1] Enter SME verify message per TABLE A for terminal unit to be added

[2] Does output data [TABLE B] indicate correct number for TGR frame and growth terminal unit

Yes → Page 2

No

[3] Determine cause and resolve; repeat from Step 1

TABLE A

VER:UTYPE:TGR a,SME b!

a = Member number of TGR
b = Submember index number

Terminal Unit	Index Number
0	32
1	33
2	34
3	35
4	36
5	37
6	38
7	39
8	40
9	41
10	42
11	43
12	44
13	45
14	46
15	47

TABLE B

VER:UTMN;OPT(SME),CUR: FLN a,   UTYN TGR,

MEMN b,   ME j,
SUBMEM c,   SME i,
TERM d,
ADR   UTYPE DATA
e   (WORD 0) _____ _____ (WORD 3)

TERM USE k
MATE USE k   TERM NUM f   TGR g

SLC TRANS DATA

ADR   SLC DATA
h   (WORD 0) _____ _____ (WORD 3)

a = Floor location number
b = Member number of TGR
c = Index number of growth terminal unit
d = Growth terminal unit number
e = Starting octal address of UTYPE DATA
f = Submember number of mate terminal unit
g = Member number of TGR containing mate terminal unit
h = Starting address of SLC DATA
i = UNEQ or SGRO
j = UNEQ or OPER
k = DOM or INTL

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VERIFY TERMINAL UNIT DATA OF TGR UT TRANSLATOR

```
 ┌─────────────┐
 │ [4] Does    │           ┌──────────────────┐
 │ output data │    Yes    │ [7] Using output │
 │ indicate    │──────────▶│ data, assure     │          ╭───────────────╮
 │ SME is UNEQ │           │ terminal unit    │─────────▶│    Page 3     │
 └──────┬──────┘           │ version data     │          ╰───────────────╯
        │                  │ equals 0 per     │
        │ No               │ word 0 in        │
        │                  │ TABLE C, Page 7  │
        │                  └──────────────────┘
        ▼                            ▲
 ┌─────────────┐           ┌──────────────────┐
 │ [5] Does    │           │ [6] See CAUTION  │
 │ installer   │           │ 1. Using RC      │
 │ indicate    │    No      │ Form 701,        │
 │ terminal    │──────────▶│ degrow submember │
 │ unit has    │           │ equipage  to     │
 │ been grown  │           │ unequipped       │
 │ to special  │           │ [DLP-527]        │
 │ growth      │           └──────────────────┘
 └──────┬──────┘
        │
        │ Yes
        │
        └──┐
           │
           ┴
```

VERIFY TERMINAL UNIT DATA OF TGR UT TRANSLATOR

Using **UTYPE DATA** in output data
and office records:
    [8] Verify TSN assignments [DLP-504] per
        TABLE C, Pages 7 and 8, words 0, 1, and 2 for
        domestic service or words 0 and 1 for
        international service

Using output data:
    [9] Verify that OPERATIONAL TYPE data
        is set to correct value per
        word 0 in TABLE C, Page 7

    [10] Verify that bit 23 in word 1 is set
         to 0 per TABLE C, Page 7

    [11] Verify that SYNCPOL data is set to
         correct value per word 1 in
         TABLE C, Page 7

    [12] Verify that STYPE data is set to
         to correct value per word 1 in
         TABLE C, Page 7

    [13] Verify that GENERIC SIGNALING TYPE
         data is set to correct value per
         word 2 in TABLE C, Page 8

    [14] See CAUTION 2. Verify that DIRECT
         SIGNALING TRAFFIC CONFIGURATION data
         is set to correct value per word 2
         in TABLE C, Page 8

AND → Page 4

CAUTION 2
Incorrect setting
will affect
proper handling
of direct
signaling
traffic

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VERIFY TERMINAL UNIT DATA OF TGR UT TRANSLATOR

[15] Verify that CCDSS and CCDSM data is set to correct value per word 3 in TABLE C, Page 8

[16] Were discrepancies noted in Steps 8 through 15

No → Page 5

Yes

[17] Refer problem(s) to installer to determine error and decide on corrective action

[18] Error was found to be in

Office records →

UT entry data

[19] Assist installer in taking appropriate corrective action as determined by regional engineering and as approved by office supervisor

[20] Have all UT data errors now been corrected

No

Yes

VERIFY TERMINAL UNIT DATA OF TGR UT TRANSLATOR

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Using **SLC TRANS DATA** in output data:

    [21] Verify EMC data in bit 23 of
         word 0 per TABLE D, Page 9

    [22] Verify SLC type data in bits 0 through 5
         of word 0 per TABLE D, Page 9

    [23] Verify SLC primary terminal number in bits
         0 through 7 of word 1 per TABLE D, Page 9

    [24] Verify SLC secondary terminal number in bits
         8 through 15 of word 1 per TABLE D, Page 9

AND → Page 6

VERIFY TERMINAL UNIT DATA OF TGR UT TRANSLATOR

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```
┌─────────────┐                                           ┌─────────────┐
│ [25] Were   │                                           │ [30] Is      │
│ discrepancies│        No                                │ terminal     │     Yes
│ noted in Steps├──────────────────────────────────┐      │ unit being   ├──────┤
│ 21 through 24,│                                   │      │ added        │
│ Page 5      │                                     │      │ simplex      │
└──────┬──────┘                                     │      │ complement   │
       │ Yes                                        │      │ type (CCITT-6)│
       │                                            │      └──────┬───────┘
       ▼                                            │             │ No
┌──────────────┐        ┌─────────────┐   Office    │             ▼
│ [26] Refer    │        │ [27] Error   │   records   │      ┌──────────────┐
│ problem(s)    │        │ was found    ├─────────────┘      │ [31] Using    │
│ to installer  ├───────►│ to be in     │                    │ verify output,│
│ to determine  │        └──────┬──────┘                     │ identify TGR  │
│ error and     │               │                            │ frame         │
│ decide on     │        UT or SLC                            │ containing    │
│ corrective    │        data                                 │ mate terminal │
│ action        │               │                            │ and terminal  │
└──────────────┘               ▼                             │ unit number   │
                        ┌──────────────┐                      └──────┬───────┘
                        │ [28] Assist   │                            │
                        │ installer in  │                            ▼
                        │ taking        │                     ┌──────────────┐
                        │ appropriate   │                     │ [32] Have     │    Yes
                        │ corrective    │                     │ both terminal ├──────┤
                        │ action as     │                     │ units been    │
                        │ determined by │                     │ verified      │
                        │ regional eng. │                     │ (if required) │
                        │ and as        │                     └──────┬───────┘
                        │ approved by   │                            │ No
                        │ office super. │                            ▼
                        └──────┬───────┘                      ┌──────────────┐
                               │                              │ [33] Repeat   │
                               ▼                              │ from Step 1,  │
                        ┌──────────────┐                      │ Page 1, for   │
                   No   │ [29] Have all │   Yes                │ mate terminal │
                  ┌─────┤ data errors   ├─────┐               │ identified in │
                  │     │ now been      │     │               │ Step 31       │
                  │     │ corrected     │     │               └──────────────┘
                  │     └──────────────┘      │
```

TABLE C

ENTRY WORD (OCTAL)	UTYPE DATA AND WORD CONFIGURATION

Entry Word 0:

entry data octal output →	0	Y	Y	Y	Y	Y	Y	Y

bit position →	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values →	0	0	0	0	W	W	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

- TERMINAL UNIT VERSION NUMBER (bits 23-20)
- OPERATIONAL TYPE (bits 19-17)
- SP MEMBER NUMBER (bits 16-12)
- MATRIX (bits 11-10)
- SP ROW NUMBER (bits 9-4)
- SP COLUMN NUMBER (bits 3-0)
- TERMINAL UNIT TRUNK SCANNER NUMBER

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-H-460 or equivalent

Y = Variable octal numbers
WWW 001 for A-link
      011 for international F-link
      110 for domestic F-link
      101 for N-link

Entry Word 1:

entry data octal output →	Y	Y	Y	Y	Y	Y	Y	Y

bit position →	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values →	0	0	W	Z	Z	Z	Z	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

- LOOP (bit 23)
- SYNC POL (bit 21)
- STYPE (bits 20-17)
- SP MEMBER NUMBER (bits 16-12)
- MATRIX (bits 11-10)
- SP ROW NUMBER (bits 9-4)
- SP COLUMN NUMBER (bits 3-0)
- PRIMARY VOICE FREQUENCY LINK TRUNK SCANNER NUMBER

W = 0 for control office (even sync)
    1 for non-control office (odd sync)

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-H-460 or equivalent

Y = Variable octal numbers

Z...Z = Converts to STYPE data as reflected in equipment list for CCIS frame
= 0 for Domestic Terminal Unit (IGFET Memory) (J99360A-1, List 1)
1 for Cost Reduced Terminal Bipolar Memory
2 for International Terminal Unit (IGFET Memory) (J99360A-1, List 1 and 2)
3 for International Terminal Unit (Bipolar Memory) (J99360C-1, List 1 and 2)
4 for Domestic Terminal Unit (Bipolar Memory) (J99360C-1, List 1 and 4)
5 for Domestic Terminal With Cryptographic Device, Terminal Modem Interface, and IGFET Memory (J99360C-1, List 5)
6 for Domestic Terminal With Cryptographic Device, Terminal Modem Interface, and Bipolar Memory (J99360C-1, List 5)

TABLE C (Contd)	
ENTRY WORD (OCTAL)	UTYPE DATA AND WORD CONFIGURATION

ENTRY WORD (OCTAL): 2

entry data octal output →

0	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	Z	W	U	U	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

GENERIC SIGNALING TYPE	DIR. SIG. CONFIG.	SP MEMBER NUMBER	MATRIX	SP ROW NUMBER	SP COLUMN NUMBER

RESERVE VOICE FREQUENCY LINK TRUNK SCANNER NUMBER

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-460 or equivalent

Y = Variable octal numbers

W = One for domestic service

Z = One for international service

UU = 10 — Signaling Link associated with No. 2 STP

01 — Signaling Link will carry Direct Signaling Traffic

00 — Signaling Link will not carry Direct Signaling Traffic; also, associated with network service complex (N-link or F-link)

ENTRY WORD (OCTAL): 3

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

X	X	X	X	W	W	W	W																

CCDSM	CCDSS	SIGNALING LINK COMPLEMENT INDEX	TGR NO.	TERMINAL NO.

BACKUP TERMINAL

Y = Variable octal numbers

W...W = Converts to data set submember number (0-15); data set unit 0, data sets 1-8 equal submember numbers 0-7, data set unit 1, data sets 1-8 equal submember numbers 8-15

X...X = Converts to data set frame member number (0-15)

ENTRY WORD (OCTAL)	SLC ENTRY DATA AND WORD CONFIGURATION

Word 0

entry data octal output	Y	0	0	0	0	0	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	X	X	X	X	X	X

Bit 23 = E M C

Bits 5–0 = SLC TYPE

Z = Emergency control end,
0 = near end or
1 = far end

X....X = 000001 if terminal unit is load sharing, or
= 000010 if terminal unit is synchronized reserve, or
= 000000 if unit is unassigned
= 000011 if terminal unit is simplex complement type (CCITT-6), or
= 000100 if terminal unit is CCIS domestic

Word 1

entry data octal output	0	0	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	0	0	0	0	0	0	Z	Z	Z	Z	Z	Z	Z	Z	X	X	X	X	X	X	X	X

Bits 15–12 = TGR MEM. NO.; Bits 11–8 = TERM NO. → SECONDARY TERMINAL NUMBER

Bits 7–4 = TGR MEM. NO.; Bits 3–0 = TERM NO. → PRIMARY TERMINAL NUMBER

X...X = Converts to decimal first terminal unit number as reflected in appropriate office record drawing

Z...Z = If the primary terminal unit being added is simplex complement type (CCITT-6) these bits will be set to 0 or converts to decimal second terminal unit number as reflected in appropriate office record drawing

2	Not used — Set to 0
3	Not used — Set to 0

VERIFY TERMINAL UNIT DATA OF TGR UT TRANSLATOR

```
┌─────────────────┐      ╱────────────╲
│ [1] Enter       │     ╱  [2] Does ME ╲   Yes    ┃
│ message per     │────▷◁  indicate OPER ▷────────┃
│ TABLE A         │     ╲  per TABLE B  ╱          ┃
└─────────────────┘      ╲────────────╱
                              │
                              │ No
                              ▽
                    ┌─────────────────┐
                    │ [3] Refer problem│
                    │ to installer to  │
                    │ determine corrective│
                    │ action          │
                    └─────────────────┘
```

TABLE A
VER:UTYPE:CCDS a,ME!
a = Member number of CCDS frame

TABLE B
VER:UTMN;OPT(ME),CUR: FLN a,   UTYN CCDS, MEMN b,   ME OPER,
a = Floor location number b = Member number of CCDS frame

VERIFY OPERATIONAL STATUS OF CCDS FRAME

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```
┌─────────────────────┐
│ [1] Enter message   │
│ per TABLE A to      │
│ restore growth      │
│ terminal unit       │
└──────────┬──────────┘
           │         First
           │         terminal        ╭──────────────╮
           ▼                   ─────▶ │   Page 2     │
    ╱─────────────╲                   ╰──────────────╯
   ╱ [2] Terminal  ╲    Mate
   ╲ being restored ╱   terminal      ╭──────────────╮
    ╲ is          ╱ ──────────────▶   │   Page 3     │
     ╲───────────╱                    ╰──────────────╯
                     Simplex
                     Complement
                     CCITT-6 Terminal ╭──────────────╮
                               ─────▶ │   Page 4     │
                                      ╰──────────────╯
```

TABLE A
RST:TGR a,TER b!
a = Member number of Growth associated TGR
b = Growth terminal unit number

RESTORE TERMINAL UNIT TO SERVICE AND VERIFY STATUS OF TERMINAL AND SIGNALING LINK

[3] Read NOTE 1. Observe output messages for printout
    per TABLE B indicating completion of terminal and
    signaling link restoral ─────────────────────────┐
                                                      │
                                                   ╱─────╲
                                                  │ AND │────┤
                                                   ╲─────╱
                                                      │
[4] If printout indicates restoral not successful,   │
    refer to installer ──────────────────────────────┘

```
┌─────────────────────────────────────────────────────────────────────────┐
│                              TABLE B                                       │
├─────────────────────────────────────────────────────────────────────────┤
│ REPT:SLKSTAT;SLK a:b                                                       │
│ SLK   STAT    LS SLC TGR TER STAT DSM DSS VFL                    STAT       │
│ a     INS        d   e   f   h   INS  j   k   SELF LOOPED        ACT        │
│ c     OOS        d   e   g   i   OOS  j   k   SELF LOOPED        STBY       │
├─────────────────────────────────────────────────────────────────────────┤
│  a = Signaling link associated with growth terminal unit                   │
│  b = Reason for status change. Expect ELT*                                 │
│  c = Signaling link associated with mate terminal unit                     │
│  d = Link state. Expect 19 for first terminal and 1 for mate terminal*     │
│  e = Signaling link complement number                                      │
│  f = TGR number containing growth terminal unit                            │
│  g = TGR containing mate terminal unit                                     │
│  h = Growth terminal unit number                                           │
│  i = Mate terminal unit number                                             │
│  j = Associated data set frame member number        ┐                      │
│  k = Data set associated with growth terminal unit  ┘ if enhanced terminal │
├─────────────────────────────────────────────────────────────────────────┤
│ * Additional message parameters, other than those specified, may be obtained│
│   from I/O manual                                                          │
└─────────────────────────────────────────────────────────────────────────┘
```

FIRST TERMINAL UNIT ──→ a

MATE TERMINAL UNIT ──→ c

NOTE 1
A series of output
messages will be
received during
restoral process
giving status of
terminal unit being
restored, associated
signaling links and
signaling link
complement
translator. TABLE B
provides expected
state output message
which will be
received indicating
completion of
restoral process

**RESTORE TERMINAL UNIT TO SERVICE AND VERIFY STATUS OF TERMINAL
AND SIGNALING LINK**

[5] Read NOTE 2. Observe output messages for printout
    per TABLE C indicating completion of terminal and
    signaling link restoral ─────────────────────────┐
                                                      │
                                                     ╱─╲
                                                    │AND│──┤
                                                     ╲─╱
                                                      ▲
[6] If printout indicates restoral not successful,   │
    refer to installer ──────────────────────────────┘

```
┌─────────────────────────────────────────────────────────────────┐
│                           TABLE C                                 │
├─────────────────────────────────────────────────────────────────┤
│  REPT:SLKSTAT;SLK a:b                                             │
│  SLK   STAT    LS SLC TGR TER STAT DSM DSS VFL            STAT    │
│  a     INS        d   e   f   h   INS  j   k   SELF LOOPED   ACT  │
│  c     INS        d   e   g   i   INS  j   k   SELF LOOPED   ACT  │
├─────────────────────────────────────────────────────────────────┤
│   a = Signaling link associated with growth terminal unit        │
│   b = Reason for status change. Expect ESUTO*                     │
│   c = Signaling link associated with mate terminal unit          │
│   d = Link state. Expect 15 for both first and mate terminals*   │
│   e = Signaling link complement number                           │
│   f = TGR number containing growth terminal unit                 │
│   g = TGR containing mate terminal unit                          │
│   h = Growth terminal unit number                                │
│   i = Mate terminal unit number                                  │
│   j = Associated data set frame member number    ⎤ if enhanced   │
│   k = Data set associated with growth terminal unit⎦  terminal    │
├─────────────────────────────────────────────────────────────────┤
│   * Additional message parameters, other than those specified,   │
│     may be obtained from I/O manual                              │
└─────────────────────────────────────────────────────────────────┘
```

FIRST TERMINAL UNIT → a

MATE TERMINAL UNIT → c

NOTE 2
A series of output messages will be received during restoral process giving status of terminal unit being restored, associated signaling links and signaling link complement translator. TABLE C provides expected state output message which will be received indicating completion of restoral process

RESTORE TERMINAL UNIT TO SERVICE AND VERIFY STATUS OF TERMINAL AND SIGNALING LINK

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[7] Read NOTE 3. Observe output messages for printout
    per TABLE D indicating completion of terminal and
    signaling link restoral ─────────────────────────────┐
                                                          │
                                                      ┌───▼───┐
                                                      │ AND │──────┤
                                                      └───▲───┘
                                                          │
[8] If printout indicates restoral not successful,   │
    refer to installer ───────────────────────────────────┘

TABLE D
REPT:SLKSTAT;SLK a:b
SLK   STAT   LS SLC TGR TER STAT DSM DSS VFL   STAT
a   INS   c   d   e   f INS   g   h SELF LOOPED   ACT

FIRST TERMINAL UNIT → a

a = Signaling link associated with growth terminal unit
b = Reason for status change. Expect ELT*
c = Link state. Expect 20*
d = Signaling link complement number
e = TGR containing growth terminal unit
f = Growth terminal unit number
g = Associated data set frame member number ⎤
h = Data set associated with growth terminal unit ⎦ if enhanced terminal

* Additional message parameters, other than those specified, may be obtained
  from I/O manual

RESTORE TERMINAL UNIT TO SERVICE AND VERIFY STATUS OF TERMINAL AND SIGNALING LINK

[1] Enter SME verify message per TABLE A for terminal unit to be converted

[2] Are UTYN, MEMN, and SUBMEM correct on output message for terminal being converted [TABLE B, Page 2]

Yes → Page 2

No

[3] Determine cause and resolve; repeat from Step 1

TABLE A
VER:UTYPE:TGR a,SME b!

a = Member number of TGR containing terminal to be converted
b = Submember index number of terminal to be converted

Terminal Unit	Index No.
0	32
1	33
2	34
3	35
4	36
5	37
6	38
7	39
8	40
9	41
10	42
11	43
12	44
13	45
14	46
15	47

VERIFY CCDSM, CCDSS, AND STYPE DATA OF TGR UT TRANSLATOR

Using verify output message:
    [4] Verify STYPE data value
        per word 1 in TABLE C, Page 3

    [5] Verify CCDSS and CCDSM data
        values per word 3 in TABLE C.
        Read NOTE 1

    [6] Record values of verifies
        in Steps 4 and 5 for
        later use

(AND)

TABLE B
VER:UTMN;OPT(SME),CUR: FLN a, UTYN TGR,
MEMN b,   ME OPER,
SUBMEM c,   SME OPER,
TERM d,
ADR   UTYPE DATA
e   (WORD 0) _____ _____ (WORD 3)
TERM USE k
MATE USE k   TERM NUM f TGR g
SLC TRANS DATA
ADR   SLC DATA
h   (WORD 0) _____ _____ (WORD 3)

a = Floor location number
b = Member number of TGR containing terminal
    unit to be converted
c = Index number of terminal unit to be converted
d = Terminal unit submember number to be converted
e = Starting octal address of UTYPE DATA
f = Submember number of mate terminal unit
g = Member number of TGR containing mate terminal
    unit
h = Starting address of SLC DATA
k = DOM

NOTE 1
The CCDSS and
CCDSM data of word
3 could be set to
zeros and will be
changed to correct
values later in the
conversion process

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VERIFY CCDSM, CCDSS, AND STYPE DATA OF TGR UT TRANSLATOR

TABLE C

ENTRY WORD (OCTAL)	UTYPE DATA AND WORD CONFIGURATION

Entry Word 1

entry data octal output →

	Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	W	Z	Z	Z	Z	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Fields:
- LOOP (bit 23)
- SYNCPOL (bit 21)
- STYPE
- SP MEMBER NUMBER
- MATRIX
- SP ROW NUMBER
- SP COLUMN NUMBER
- PRIMARY VOICE FREQUENCY LINK TRUNK SCANNER NUMBER

Y = Variable octal numbers

Z...Z = Converts to STYPE data as reflected in equipment list for CCIS frame

- = 0 for Domestic Terminal Unit (IGFET Memory) (J99360A-1, List 1)
- 1 for Cost Reduced Terminal (Bipolar Memory)
- 2 for International Terminal Unit (IGFET Memory) (J99360A-1, List 1 and 2)
- 3 for International Terminal Unit (Bipolar Memory) (J99360C-1, List 1 and 2)
- 4 for Domestic Terminal Unit (Bipolar Memory) (J99360C-1, List 1 and 4)
- 5 for Domestic Terminal With Cryptographic Device, Terminal Modem Interface, and IGFET Memory (J99360C-1, List 5)
- 6 for Domestic Terminal With Cryptographic Device, Terminal Modem Interface, and BIPOLAR Memory (J99360C-1, List 5)

Entry Word 3

entry data octal output →

	Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

X	X	X	X	W	W	W	W	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

Fields:
- CCDSM
- CCDSS
- SIGNALING LINK COMPLEMENT INDEX
- TGR NO.
- TERMINAL NO.
- BACKUP TERMINAL

W...W = Converts to data set submember number (0-15); data set unit 0, data sets 1-8 equal submember numbers 0-7, data set unit 1, data sets 1-8 equal submember numbers 8-15

X...X = Converts to data set frame member number (0-15)

Y = Variable octal number

VERIFY CCDSM, CCDSS, AND STYPE DATA OF TGR UT TRANSLATOR

SUMMARY
Call up RC Form 801 on CRT. Using TTY, fill in blank fields
on form to change terminal unit CCDSS and CCDSM data within
the selected word of the TGR UT translator. Enter message;
then verify inactive translations.

```
RC:FUNC;CHG;OPT(TRANS), ---:                    TRANSID_____,
ORNU _____,
ENTRY _____, WORDNO _____,
SIZE __,  DISP __,
BINOCT _,
NEWDATA _____ ,
OLDDATA _____ ,
REMARKS _____ !
```

[1] See CAUTION 1. Enter
    OP:RCFORM 801!

CRT displays
RC Form 801
per FIG. 1

FIG. 1 — Blank RC Form 801

[2] Determine from TABLE A UT
    decimal word corresponding
    to terminal unit to be
    converted and record

AND → Page 2

[3] Select from TABLE B data set
    submember number associated with
    terminal being converted

TABLE A

TERMINAL UNIT	UT DECIMAL WORD	TERMINAL UNIT	UT DECIMAL WORD
0	20	8	52
1	24	9	56
2	28	10	60
3	32	11	64
4	36	12	68
5	40	13	72
6	44	14	76
7	48	15	80

TABLE B

DATA SET UNIT	0								1							
DATA SET NUMBER*	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
DATA SET SUBMEMBER NUMBER (CCDS)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

* Associated TGR member number and Terminal number are stamped
  on data set mounting designation strip

CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL CCDSS AND CCDSM DATA

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```
┌─────────────────────────────┐
│ [4] Read NOTES 1 and 2.     │
│ Using TTY and CRT           │
│ display of RC Form 801:     │
│ fill in blank fields on     │
│ RC Form 801 per TABLE C     │
│ and enter message           │
└─────────────┬───────────────┘
              │
              ▽
        ╭───────────╮
        │  Page 3   │
        ╰───────────╯
```

TABLE C
RC:FUNC;CHG;OPT(TRANS),a: TRANSID b,
ORNU c,
ENTRY d,   WORDNO e,
SIZE f, DISP g,
BINOCT h,
NEWDATA i,
OLDDATA j,
REMARKS_____ !

a = TST
b = UTTGR
c = RC order number
d = Member number of TGR containing
    terminal unit being converted
e = UT decimal word determined in Step 2
f = 8
g = 16
h = B
i = XXXXYYYY

CCDS submember number (in binary)
associated with terminal being
converted (see Step 3)

Associated CCDS frame
member number in binary (0-15)

j = Contents in binary of current data in CCDSM
    and CCDSS fields being changed

NOTES
1. The quantity of
   binary bits to be
   entered as NEWDATA
   must be equal to
   decimal number
   entered as SIZE.
2. The quantity of
   binary bits to be
   entered as OLDDATA
   must be equal to
   quantity of
   bits entered as
   NEWDATA

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL CCDSS AND CCDSM DATA

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```
┌─────────────────────────────┐
│          TABLE D            │
├─────────────────────────────┤
│ RC ORNU a SUCCESSFULLY TESTED
│ RC ORNU a SUCCESSFULLY BUFFERED
```


TABLE D

RC ORNU a SUCCESSFULLY TESTED

RC ORNU a SUCCESSFULLY BUFFERED

RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR,
ORNU a,
ENTRY b,   WORDNO c,
SIZE 8,   DISP 16,
BINOCT B,
NEWDATA d,
OLDDATA e,
REMARKS _!
REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR
AFTER THE MESSAGE IS ACTIVATED

WORD 0   _____ _____ _____ _____
           _____ _____ _____ _____
WORD 10   _____ _____ _____

a = RC order number
b = Member number of TGR containing terminal unit
    being converted
c = UT decimal word determined in Step 2
d = XXXXYYYY
        │   │
        │   └── CCDS submember number (in binary)
        │   associated with terminal being
        │   converted (see Step 3)
        └────── Associated CCDS frame member
                number in binary (0-15)
e = Contents in binary of current data in CCDSM
    and CCDSS fields being changed

[5] Was recent change SUCCESSFULLY TESTED and SUCCESSFULLY BUFFERED [TABLE D]   — Yes

No

[6] Analyze output message for error and repeat from Step 1, Page 1, with corrected input data

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL CCDSS AND CCDSM DATA

SUMMARY
Call up RC Form 801 on CRT. Using TTY, fill in blank fields
on form to identify and to change terminal unit STYPE
data within the selected word of the TGR UT translator.
Enter message, then verify inactive translations.

```
RC:FUNC;CHG;OPT(TRANS), ---:               TRANSID_____,
ORNU ------,
ENTRY -------, WORDNO -----,
SIZE --,  DISP --,
BINOCT -,
NEWDATA ----------------------- ,
OLDDATA ----------------------- ,
REMARKS -------------------------------------------------- !
```

FIG. 1 — Blank RC Form 801

[1] See CAUTION 1. Enter
    OP:RCFORM 801!

CRT displays
RC Form 801
per FIG. 1

AND → Page 2

[2] Determine from TABLE A UT
    decimal word corresponding
    to terminal unit being
    converted and record

TABLE A			
TERMINAL UNIT	UT DECIMAL WORD	TERMINAL UNIT	UT DECIMAL WORD
0	18	8	50
1	22	9	54
2	26	10	58
3	30	11	62
4	34	12	66
5	38	13	70
6	42	14	74
7	46	15	78

CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT STYPE DATA

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[3] Determine from TABLE B
new data corresponding to
terminal unit type to be
converted ─────────────────┐

[4] Determine from TABLE C old
data corresponding to terminal
unit to be converted ──────┘

(AND) ──▶ (Page 3)

TABLE B	
TERMINAL UNIT TYPE	**NEW DATA**
* Domestic terminal with cryptographic device. Terminal modem interface and IGFET memory (J99360C-1, List 5)	0101
† Domestic terminal with cryptographic device. Terminal modem interface, and BIPOLAR memory (J99360C-1, List 5)	0110
* Identified by terminal unit being equipped with **FA632** circuit packs † Identified by terminal unit being equipped with **FA646B** circuit packs	

TABLE C	
TERMINAL UNIT TYPE	**OLD DATA**
Domestic Terminal Unit (IGFET Memory) (J99360A-1, List 1)	0000
Domestic Terminal Unit (Bipolar Memory) (J99360C-1, List 1)	0001
Domestic Terminal Unit (Bipolar Memory) (J99360C-1, List 1 and 4)	0100

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT STYPE DATA

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```
┌─────────────────────────┐
│ [5] Read NOTES 1 and 2. │
│ Using TTY and CRT       │
│ display of RC Form 801: │
│ fill in blank fields on │
│ RC Form 801 per TABLE D │
│ and enter message       │
└─────────────────────────┘
            │
            ▼
      ╭───────────╮
      │  Page 4   │
      ╰───────────╯
```

```
┌──────────────────────────────────────────────────────────┐
│                        TABLE D                             │
├──────────────────────────────────────────────────────────┤
│ RC:FUNC;CHG;OPT(TRANS),a:            TRANSID b,            │
│                                                            │
│ ORNU c,                                                    │
│                                                            │
│ ENTRY d,        WORDNO e,                                  │
│                                                            │
│ SIZE f,  DISP g,                                           │
│                                                            │
│ BINOCT h,                                                  │
│                                                            │
│ NEWDATA i,                                                 │
│                                                            │
│ OLDDATA j,                                                 │
│                                                            │
│ REMARKS_____ !     │
├──────────────────────────────────────────────────────────┤
│ a = TST                                                    │
│ b = UTTGR                                                  │
│ c = RC order number                                        │
│ d = Member number of TGR containing                        │
│     terminal unit being converted                          │
│ e = UT decimal word determined in Step 2                   │
│ f = 4                                                      │
│ g = 17                                                     │
│ h = B                                                      │
│ i = New data determined in Step 3                          │
│ j = Old data determined in Step 4                          │
└──────────────────────────────────────────────────────────┘
```

```
┌──────────────────────────┐
│          NOTES           │
│ 1. The quantity of       │
│    binary bits to be     │
│    entered as NEWDATA    │
│    must be equal to      │
│    decimal number        │
│    entered as SIZE.      │
│ 2. The quantity of       │
│    binary bits to be     │
│    entered as OLDDATA    │
│    must be equal to      │
│    quantity of bits      │
│    entered as NEWDATA    │
└──────────────────────────┘
```

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL

UNIT STYPE DATA

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```
┌─────────────────────────────┐
│ [6] Was recent              │      ┃
│ change SUCCESSFULLY    Yes   │──────┃
│ TESTED and                  │      ┃
│ SUCCESSFULLY                │
│ BUFFERED [TABLE E]          │
└──────────────┬──────────────┘
               │ No
               ▼
```

[6] Was recent change SUCCESSFULLY TESTED and SUCCESSFULLY BUFFERED [TABLE E] — Yes

No

[7] Analyze output message for error and repeat from Step 1, Page 1, with corrected input data

TABLE E
RC ORNU a SUCCESSFULLY TESTED
RC ORNU a SUCCESSFULLY BUFFERED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR, ORNU a, ENTRY b,   WORDNO c, SIZE 4,   DISP 17, BINOCT B, NEWDATA d, OLDDATA e, REMARKS _!
REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR AFTER THE MESSAGE IS ACTIVATED
WORD 0   _____ _____ _____ _____   _____ _____ _____ _____ WORD 10   _____ _____ _____
a = RC order number b = Member number of TGR containing terminal unit   being converted c = UT decimal word determined in Step 2 d = New data determined in Step 3 e = Old data determined in Step 4

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL

UNIT STYPE DATA

At TGR terminal unit to be converted:
    [1] Loosen four mounting screws
        on the MODEM

    [2] Remove MODEM

    [3] Carefully insert replacement
        terminal modem interface unit

    [4] Tighten four mounting screws

AND

[5] Terminal
being
converted is

J99360A-1

[6] See WARNING 1.
Install **FA632**
circuit packs at
equipment locations
06-11, 06-12, 02-11,
and 02-29

J99360C-1

[7] See WARNING 1.
Install **FA646B**
circuit packs at
equipment locations
06-10 and 02-10

WARNING 1
An antistatic
wrist strap must
be worn to
prevent
electrostatic
discharge and
possible damage
to circuit packs
while handling

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REPLACE 201D MODEM WITH TMI AND INSTALL ADDITIONAL MEMORY PACKS

[1] Enter
RCACT:ORNU a!
a = RC order number
    assigned to change
    of terminal unit
    CCDSM and CCDSS
    or STYPE data

[2] Was ACCEPTED
message received
per TABLE A

Yes

[4] Enter
verify
message per
TABLE B

Page 2

No

[3] Analyze
reject message;
repeat from Step 1
using correct
message format.
See NOTE 1

TABLE B
VER:UTYPE:TGR a,SME b!

a = Member number of TGR
    containing converted
    terminal
b = Submember index
    number

Terminal Unit	Index No.
0	32
1	33
2	34
3	35
4	36
5	37
6	38
7	39
8	40
9	41
10	42
11	43
12	44
13	45
14	46
15	47

TABLE A
RC ORNU a ACCEPTED FOR ACT STATE
a = RC order number

NOTE 1
Reject could
result from
other than
message format
error

ACTIVATE TGR TERMINAL CCDSM, CCDSS, AND STYPE DATA

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```
┌─────────────────────┐                    ┌───────────────┐
│ [5] Are             │                    │  [7] Data     │
│ UTYN,MEMN, and      │   Yes              │  being        │   STYPE
│ SUBMEM              │ ────────►          │  activated is │ ──────────►
│ correct on printout │                    │               │
│ for terminal being  │                    │               │
│ converted           │                    └───────────────┘
└─────────────────────┘                            │
         │                                          │ CCDSS
         │ No                                       ▼
         ▼
```

[5] Are **UTYN,MEMN,** and **SUBMEM** correct on printout for terminal being converted

Yes

No

[6] Determine cause and resolve; repeat from Page 1, Step 4

[7] Data being activated is

STYPE

CCDSS

[8] Using output message, verify that bits 16-23 of word 3 in UTYPE DATA correspond to data set frame member and submember number associated with terminal unit being converted

[9] Using output message, verify that bits 17-20 of word 1 in UTYPE DATA equals the STYPE of terminal being converted

ACTIVATE TGR TERMINAL CCDSM, CCDSS, AND STYPE DATA

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[1] At converted terminal unit
    power switch, rotate **OFF**
    switch to normal position

[2] Read NOTE 1. Depress **ON** switch

[3] Enter message to restore
    terminal unit:
    RST:TGR a,TER b!

AND

[4] Does output
message indicate
ATP and RESTORE
COMPLETED

Yes

No

[5] Clear TGR
diagnostic
failure;
ATP required
 [TOP 234-151-033]

POWER UP CONVERTED TERMINAL AND RESTORE TO SERVICE

TABLE A

OP:SLKSTAT;SLK ab!
a = Member number of TGR containing converted terminal
b = Submember number of converted terminal

[1] Enter input message per TABLE A

[2] Does output message indicate **SLK** per TABLE B — Yes

No

[3] Determine cause and resolve; repeat from Step 1

FIRST TERMINAL UNIT

MATE TERMINAL UNIT

TABLE B

REPT:SLKSTAT;SLK a;b

SLK	STAT	LS	SLC	TGR	TER	STAT	DSM	DSS	VFL	STAT
a	INS	d	e	f	h	INS	j	k	m	ACT/STBY
									m	ACT/STBY
c	INS	d	e	g	i	INS	j	l	n	ACT/STBY
									n	ACT/STBY

a = Signaling link associated with converted terminal unit
b = Reason for status change. Expect ESUTO
c = Signaling link associated with mate terminal
d = Link state. Expect 15 for both first and mate terminals
e = Signaling link complement number
f = TGR frame member number containing converted terminal unit
g = TGR containing mate terminal
h = First terminal unit number
i = Mate terminal unit number
j = Associated data set frame member number ⎫
k = Data set associated with converted terminal unit ⎬ if enhanced terminal units
l = Data set associated with mate terminal ⎭
m = VFL CIN associated with converted terminal
n = VFL CIN associated with mate terminal

VERIFY IN-SERVICE STATUS OF SLK

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1. Verify that data set battery switch is set to ON. (The switch is on when the rocker is depressed toward the white dot)

   NOTE: Data set must be removed from mounting for access to battery switch.

2. Verify data set options; at data set front panel:

   2.1. Place **TEST/CMD** switch in **CMD**

        Response: Alphanumeric display indicates **MDCK** or **DSAB**

   2.2. Operate and hold **BWD/FWD** switch in **FWD** until alphanumeric display indicates **DSOP**

        Response: Alphanumeric display indicates **DSOP**

   2.3. Depress **EXEC**

        Response: Alphanumeric display indicates **OP**** with ****** flashing

        NOTE: The options for 2048A data set are A2, B1, C5, D7, and E5.

   2.4. Operate and hold **−/+** in **+** and the installed options will appear in order on the alphanumeric display

        Response: Alphanumeric display indicates all installed options in sequence

   2.5. If data set options indicated are not correct: set correct options in 2048A data set [DLP-600]

3. Verify network address:

   3.1. Assure **TEST/CMD** switch in **CMD**

        Response: Alphanumeric display indicates **MDCK** or **DSAB**

   3.2. Operate and hold **BWD/FWD** switch in **BWD** until alphanumeric display indicates **DSNA**

        Response: Alphanumeric display indicates **DSNA**

   3.3. Depress **EXEC**

        Response: Alphanumeric display indicates **NA01**

   3.4. If network address is not set to NA01: set network address to correct value [DLP-601]

   3.5. Place **TEST/CMD** switch in normal position

        Response: Alphanumeric display returns to normal indication

        NOTE: Expected display will be **FA** (facility failure).

End of procedure

CHECK 2048A DATA SET OPTIONS AND SWITCH SETTINGS

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List of equipment required to convert standard terminal
unit to enhanced operation:

1. One J99360CB-1 terminal modem interface unit equipped
   with

    1 **AR924** Circuit Pack
    1 **AR925** Circuit Pack
    1 **AR927** Circuit Pack
    1 **AR928** Circuit Pack
    1 **AR929** Circuit Pack
    1 **AR930** Circuit Pack
    1 **20851** Power Pack

2. Additional terminal unit memory packs required:

  A. For J99360A terminal unit
    4 — **FA632** circuit packs

  B. For J99360C terminal unit
    2 — **FA646B** circuit packs

3. Terminal unit to data set cabling

    1 — M25A cord

    1 — M37A cord

End of procedure

EQUIPMENT REQUIRED TO CONVERT ONE TERMINAL UNIT TO ENHANCED OPERATION	Issue 10	OCT 1989
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1. Place **TEST/CMD** switch in **CMD**.

   Response: Alphanumeric display indicates **MDCK** or **DSAB**.

2. Operate and hold **BWD/FWD** switch in **FWD** until
   alphanumeric display indicates **MTCE**.

   Response: Alphanumeric display indicates **MTCE**.

3. Depress **EXEC**.

   Response: Alphanumeric display indicates **MC/I**.

4. Depress **EXEC**.

   Response: Display changes to **MC/0**.

5. Place **TEST/CMD** switch in normal position.

   Response: Alphanumeric display returns to normal
              indication.

[1] At degrowth DIU, assure that **UNIT** power switch
    is in OFF (down) position. See FIG. 1 ───────┐

[2] Remove 140E and 141C1/141L1 power
    units per FIG. 1 ──────────────────────────────→ (AND) ──→ (Page 2)

[3] See WARNING 1. Remove growth DIU circuit
    packs per FIG. 1 ─────────────────────────┘

```
┌─────────────────────┐
│     WARNING 1       │
│  An antistatic      │
│  wrist strap must   │
│  be worn to         │
│  prevent            │
│  electrostatic      │
│  discharge and      │
│  possible damage    │
│  to circuit packs   │
│  while handling     │
└─────────────────────┘
```

ARRANGEMENT FOR ODD NUMBERED DIUs   ARRANGEMENT FOR EVEN NUMBERED DIUs

DIU CIRCUIT PACKS   DIU CIRCUIT PACKS

FIG. 1 — DIU Circuit Pack and Power Unit Arrangement

Revised

[4] Are cables to be removed from degrown DIU

No

Yes

[5] At DIF Protection Switch Relay pack: disconnect T and R coaxial cables at growth DIU output port. See FIG. 2

[6] Tag cables removed in Step 5 and place in cable form

CONNECTORS FOR:

CONNECTORS FOR:

DIU 0/16
DIU 1/17
DIU 2/18
DIU 3/19
DIU 4/20
DIU 5/21
DIU 6/22
DIU 7/23

DIU 8/24
DIU 9/25
DIU 10/26
DIU 11/27
DIU 12/28
DIU 13/29
DIU 14/30
DIU 15/31

EQPT LOC 0/277

EQPT LOC 0/277

013 | 027 | 041 | 055 | 073 | 087 | 101 | 115 | 177 | 191 | 205 | 219 | 237 | 251 | 265 | 279

FIG. 2 — T and R Cable Assignments at Protection Switch Relay Packs of DIF (Bay 0 or 2)

REMOVE DEGROWTH DIU CIRCUIT PACKS, POWER UNITS AND DISCONNECT CABLING

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1. General

1.1 The address SP4RCRTSTAT contains information concerning the routing status of the SP2s and their associated DTs.

1.2 Each SP2 has four words assigned to it. The first two are for Controller 0, and the second two are for Controller 1. The word layouts for Controller 1 are the same as the ones for Controller 0.

1.3 The first word for each controller is the routing status for DTs 0-7 and has the word layout shown in TABLE A, Page 2, word 0. The second word for each controller is the routing status for DTs 8-15 and has the word layout shown in TABLE A, word 1.

1.4 Since an office may have as many as 32 SP2s, 128 words must be dumped beginning with the SP4RCRTSTAT octal address. The first four words are for SP2 member number 0; the second four are for member number 1, etc. See FIG. 1.

2. Procedure

2.1 Using compool, determine address for SP4RCRTSTAT

2.2 Dump call store address of SP4RCRTSTAT by entering message: DUMP:CSS,ADR a,L128!
(a = address determined in Step 2.1)

2.3 Enter message: VER:UTYPE:DT a! (a = degrowth DT member number) and determine SP2 member number associated with degrowth DT.

2.4 From printout of address dump, determine the four words assigned to the SP2 member number associated with the degrowth DT.

2.5 Using the four words found in Step 2.4 and TABLE A, Page 2; verify that the routing flops are pested for the degrowth unit. If routing flops are not pested, contact appropriate support organization.

FIG. 1 — Example of Address (15063) Dump

VERIFY CALL STORE ADDRESS OF SP4RCRTSTAT

REFLECTS DEGROWTH OF DIGROUP TERMINAL

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	TABLE A
ROUTING STATUS WORD	ROUTING STATUS DATA FOR CONTROLLERS 0 AND 1

0/2

	Z		Z		Z		Z		Z		Z		Z		Z	
bit position →	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values →	X	X	X	X	X	X	X	X	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a

| | | | | | | | | | DT 7 | | DT 6 | | DT 5 | | DT 4 | | DT 3 | | DT 2 | | DT 1 | | DT 0 | |

Routing Status of SP2 Controllers and Associated DTs

aa = 00 — Routing Flops are Pested   Z...Z = Variable octal numbers
     01 — Receive from DT via Link 0
     10 — Receive from DT via Link 1

1/3

	Z		Z		Z		Z		Z		Z		Z		Z	
bit position →	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values →	X	X	X	X	X	X	X	X	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a

| | | | | | | | | | DT 15 | | DT 14 | | DT 13 | | DT 12 | | DT 11 | | DT 10 | | DT 9 | | DT 8 | |

Routing Status of SP2 Controllers and Associated DTs

aa = 00 — Routing Flops are Pested   Z...Z = Variable octal numbers
     01 — Receive from DT via Link 0
     10 — Receive from DT via Link 1

VERIFY CALL STORE ADDRESS OF SP4RCRTSTAT
REFLECTS DEGROWTH OF DIGROUP TERMINAL

At data set front panel:

1. Assure that **TEST/CMD** switch is set to **CMD** position and **MDCK** or **DSAB** appears at alphanumeric display

2. Operate and hold **BWD/FWD** switch in **FWD** until alphanumeric display indicates **MTCE**

   Response: **MTCE** appears at alphanumeric display

3. Momentarily depress **EXEC** switch

   Response: **MC/O** appears at alphanumeric display

4. Momentarily depress **EXEC** switch

   Response: **MC/I** appears at alphanumeric display

5. Operate and hold **BWD/FWD** switch in **FWD** until alphanumeric display indicates **CHOP**

   Response: **CHOP** appears at alphanumeric display

6. Momentarily depress **EXEC** switch

   Response: **CH**** appears at alphanumeric display with ** flashing

   NOTE: Completion of Steps 7, 7.1, and/or 7.2 will result in data set options being installed and/or removed to equip data set with required options **A2**, **B1**, **C5**, **D7**, and **E5**. Review these three steps prior to starting the process.

7. To display all available options: operate and hold the -/+ switch in + position

   Response: Alphanumeric display indicates all available options in sequence (such as, **bbA1**, where **bb** equals blank character positions in display) and with previously installed options shown as **bxx** (where xx equals option designation)

7.1 To install an option: When the desired option is displayed, release the -/+ switch and momentarily depress the **EXEC** switch

   Response: Alphanumeric display changes to indicate the option is now installed (such as **bB5**)

7.2 To remove an installed option: When an unwanted option is displayed (such as √**bC7**), release the -/+ switch and momentarily depress the **EXEC** switch

   Response: Alphanumeric display changes to indicate unwanted option is now removed (such as **bbC7**)

8. When only the required options are installed: Operate and hold **BWD/FWD** switch in **FWD** position until alphanumeric display indicates **MTCE**

   Response: **MTCE** appears at alphanumeric display

9. Momentarily depress **EXEC** switch two times with at least a 1-second interval

   Response: **MC/I** appears at alphanumeric display and then changes to **MC/O**

10. Operate and hold **BWD/FWD** switch in **FWD** position
    until alphanumeric display indicates **DSOP**

    Response: **DSOP** appears at alphanumeric display

11. Momentarily depress **EXEC** switch

    Response: **OP**** appears at alphanumeric display
             with **** flashing

12. Operate and hold -/+ switch in + position; verify
    that each required option is indicated at the
    alphanumeric display

    Response: Options **A2**, **B1**, **C5**, **D7**, and **E5** appear
             in sequence on the alphanumeric display

End of procedure

At data set front panel:

1. Assure that **TEST/CMD** switch is set to **CMD** position and **MDCK** or **DSAB** appears at alphanumeric display

2. Operate and hold **BWD/FWD** switch in **FWD** until alphanumeric display indicates **MTCE**

   Response: **MTCE** appears at alphanumeric display

3. Momentarily depress **EXEC** switch two times with at least a 1-second interval

   Response: **MC/O** appears at alphanumeric display and then changes to **MC/I**

4. Operate and hold **BWD/FWD** switch in **FWD** until alphanumeric display indicates **CHNA**

   Response: **CHNA** appears at alphanumeric display

5. Momentarily depress **EXEC** switch

   Response: **NA**** appears at alphanumeric display with ** flashing

   NOTE: Completion of Steps 6 and 7 will result in the network address being set to 01. Review these two steps before starting the process.

6. Operate and hold -/+ switch in + position

   Response: Each possible network address appears in sequence at alphanumeric display

7. When **NA01** appears at alphanumeric display: Release -/ + switch and momentarily depress **EXEC** switch

   Response: **NA01** flashes one time on alphanumeric display

8. Operate and hold **BWD/FWD** switch in **FWD** position until alphanumeric display indicates **MTCE**

   Response: **MTCE** appears at alphanumeric display

9. Momentarily depress **EXEC** switch two times with at least a 1-second interval

   Response: **MC/I** appears at alphanumeric display and then changes to **MC/O**

End of procedure

```
┌─────────────────────┐
│ [1] At 1B MTC       │
│ terminal, enter     │
│ VER:UTYPE:DIF a!    │
│ a = Member number   │
│     of growth DIF   │
└─────────────────────┘
           │
           ▼
      ┌─────────────┐                    ┌──────────────────┐
     ╱ [2] Are message ╲      No         │ [3] Determine    │
    ╱  format and member ╲──────────────▶│ cause and        │
    ╲  identification    ╱                │ resolve; repeat  │
     ╲ correct per TABLE A╱               │ from Step 1      │
      ╲─────────────╱                     └──────────────────┘
           │
          Yes
           │
           ▼
┌─────────────────────┐
│ [4] Using printout  │
│ and TABLE B, Page 8,│
│ check that member   │                ╭─────────────╮
│ and submember equipage │────────────▶│   Page 2    │
│ bits per words 0, 12,  │             ╰─────────────╯
│ 13, and 14 are set to 0│
└─────────────────────┘
```

```
┌──────────────────────────────────────────────────┐
│                    TABLE A                         │
├──────────────────────────────────────────────────┤
│ VER:UTMN;OPT(),CUR:    FLN a,        UTYN DIF,     │
│                                                    │
│ MEMN b,              ME UNEQ,                       │
│ ENTRY ADDRESS c,                ENTRY SIZE 83,     │
│                                                    │
│ CUR                                                │
│ WORD 0    ____ ____ ____ ____                      │
│           ____ ____ ____ ____                      │
│ WORD 10   ____ ____ ____ ____                      │
│           ____ ____ ____ ____                      │
│ WORD 20   ____ ____ ____ ____                      │
│           ____ ____ ____ ____                      │
│                      •                             │
│                      •                             │
│                      •                             │
│                      •                             │
│                                                    │
│ WORD 120 ____ ____ ____                            │
├──────────────────────────────────────────────────┤
│ a = Floor location number                          │
│ b = Member number of growth associated DIF         │
│ c = Starting octal address for UT entry            │
└──────────────────────────────────────────────────┘
```

VERIFY DIF/DIF-E1 UT TRANSLATOR

[5] Were equipage bits found in a state other than zero

No

Yes

[6] Read CAUTION 1 and NOTE 1. Using RC Form 701, degrow submember equipage [DLP-527] and/or member equipage [DLP-526] to unequipped

[7] Using printout and TABLE B, Page 8, verify DIF controller version numbers per word 10 and DIU version numbers per words 16 through 57 [DLP-603]

[8] Were version errors noted

No

Yes

[9] See CAUTION 1. Using RC Form 801, perform functional word change to correct version data error [DLP-525]

Page 3

NOTE 1
Submember equipage must be degrown first, if required, followed by degrowth of member equipage, if required

CAUTION 1
Depending on local procedures, supervisory or TELCO engineering approval must be obtained prior to performing any data change

VERIFY DIF/DIF-E1 UT TRANSLATOR

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[10] Contact the appropriate support organization and verify that the firmware version data of word 60 on printout is proper for the current office generic issue [NOTE 2]

[11] Were version errors noted

Yes

No

[12] See CAUTION 2. Using RC Form 801, perform functional word change to correct version data error [DLP-525]

Using printout, TABLE B, Page 8, and office records:
[13] Verify member class AC/B version record of word 11

[14] Verify miscellaneous member type data per word 0, bits 18 through 23

[15] Verify alarm grid, lineup, and frame assignment for growth DIF per word 1 [DLP-523]

[16] Verify PUB branch assignment for growth DIF per word 3 [DLP-524]

[17] Verify SD and pulse point assignments for growth DIF per words 2, 5, 6, and 7 [DLP-528]

AND

Page 4

NOTE 2
Support organization may be TCC, SMCC, NESAC, or PECC, as applicable

CAUTION 2
Depending on local procedures, supervisory or TELCO engineering approval must be obtained prior to performing any data change

VERIFY DIF/DIF-E1 UT TRANSLATOR

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[18] Verify scan point assignments for
     growth DIF per words 3 and 4 [DLP-529]

[19] Verify EST indicator and EST member
     number, if any, per words 12 and 13

[20] Verify TSI member number supplying
     clock to growth DIF per word 15

     AND → Page 5

[21] Verify Digroup type of protection
     switching per words 16 through 57

[22] Verify DIU to TSI port assignment
     per words 16 through 55 and record
     assignment for later reference [DLP-584]

VERIFY DIF/DIF-E1 UT TRANSLATOR

[23] Were discrepancies noted in Step 13, Page 3, through Step 22

No

Yes

[24] Refer problem(s) to installer to determine error and decide on corrective action

[25] Error was found to be in

Office records

UT entry data

Page 6

[26] Assist installer in taking appropriate corrective action as determined by regional engineering and as approved by office supervisor

[27] Have all UT data errors now been corrected

No

Yes

Page 6

VERIFY DIF/DIF-E1 UT TRANSLATOR

Using printout, TABLE B, Page 8, and office records:
    [28] Verify Type Hardware per words
            16 through 57 ─────────────────────────────────────┐
                                                               │
                                                               ▼
    [29] Verify Type of Digroup per words
            61 through 122 ──────────────────────────►(AND)──────►(Page 7)
                                                         ▲
                                                         │
    [30] Verify Type of Hardware for Digroup 5
            per words 61 through 120 ────────────────────┘

VERIFY DIF/DIF-E1 UT TRANSLATOR

```
      ┌─────────────────┐
     /  [31] Were        \
    /   discrepancies     \  No
   <    noted in Step 28,  >─────────────────────────────────┐
    \   Page 6, through   /                                   │
     \  Step 30          /                                     │
      └────────┬────────┘                                      │
               │ Yes                                           │
               ▼                                               │
   ┌───────────────────┐                                       │
   │ [32] Refer        │        ┌─────────────┐   Office       │
   │ problem(s) to     │       /  [33] Error   \  records      │
   │ installer to      │──────<   was found     >──────────────┤
   │ determine error   │       \  to be in     /               │
   │ and decide on     │        └──────┬──────┘                ▼
   │ corrective action │           UT entry                    ┤
   └───────────────────┘            data
```

```
                                     ┌──────────────────────────┐
   ┌──────┐    No                    │ [34] Assist installer    │
  /  [35] Have all \                 │ in taking appropriate    │
 <   UT data errors >◀───────────────│ corrective action as     │
  \  now been      /                 │ determined by regional   │
   \ corrected    /                  │ engineering and as       │
    └──────┬──────┘                  │ approved by office       │
       Yes │                         │ supervisor               │
           ┤                         └──────────────────────────┘
```

TABLE B

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

ENTRY WORD (OCTAL): 0

entry data octal output	Z	Y	0	0	0	0	0	0

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MEMBER TYPE	MEMBER TYPE HARDWARE GENERATION	MEMBER EQUIPAGE	DIU 7	DIU 6	DIU 5	DIU 4	DIU 3	DIU 2	DIU 1	DIU 0

SUBMEMBER EQUIPAGE (DIU 0-7)

Y = 0 — DIF per J68960A   Z = 1 — DIF per J68960A

1 — DIF-E1 per J5X059B-2 Lists 1, 2, 3, and 4   2 — DIF-E1 per J5X059B

3 — DIF-E1 Frame for MF Signaling

4 — DIF-E1 Frame for DTMF Signaling with or without 4 State

5 — DIF-E1 Frame for MF Signaling with 4 State

ENTRY WORD (OCTAL): 1

entry data octal output	Y	Y	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	Z	Z	Z	Z	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

ASSIGNED ALARM GRID NUMBER	FRAME LINEUP NUMBER	FRAME NUMBER

X...X = Converts to decimal frame info as reflected in office floor plan drawing

ZZZZ = Converts to decimal alarm grid number as reflected in office record drawings T-nnnn-Hn-400, 401, or 402 or equivalent

Y = Variable octal numbers

VERIFY DIF/DIF-E1 UT TRANSLATOR

TABLE B (Contd)

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 2

entry data octal output:

0	0	0	0	Y	Y	Y	Y

bit position:

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values:

0	0	0	0	0	0	0	0	0	0	0	0	0	X	X	X	X	X	X	X	X	X	X	X

Field labels (bits 11–0): SP MEMBER NUMBER | L OR R MATRIX | SP ROW NUMBER | SP COLUMN NUMBER

BASE SP PULSE POINT

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent

Y = Variable octal numbers

Entry Word 3

entry data octal output:

Y	Y	Y	Y	Y	Y	Y	Y

bit position:

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values:

0	1	Z	Z	Z	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

Field labels: PUB BRANCH NUMBER ASSIGNMENT | SP MEMBER NUMBER | L OR R MATRIX | SP ROW NUMBER | SP COLUMN NUMBER

MEMBER BASE MISCELLANEOUS SCAN NUMBER

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-461 or equivalent

Y = Variable octal numbers

ZZZ = 3-digit code corresponding to lettered PUB branch as reflected in office record drawing T-nnnn-Hn-3840 or equivalent

= 000 - branch A&B   100 - branch K&L
001 - branch C&D   101 - branch M&R
010 - branch E&F   110 - branch T&V
011 - branch G&H   111 - branch W&X

VERIFY DIF/DIF-E1 UT TRANSLATOR

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry word 4:

entry data octal output	Y	Y	Y	Y	Y	Y	Y	Y
bit position	23 22 21	20 19 18	17 16 15	14 13 12	11 10 9	8 7 6	5 4 3	2 1 0
binary values	0 0 0	0 0 0	0 X X	X X X	0 X X	X X X	X X X	X X X

bit positions 16–12: SP MEMBER NUMBER
bit positions 11–10: L OR R MATRIX
bit positions 9–4: SP ROW NUMBER
bit positions 3–0: SP COLUMN NUMBER

bit positions 16–0: BUS BASE MISCELLANEOUS SCAN NUMBER

    X...X = Converts to decimal SP info as reflected in office record
            drawing T-nnnn-Hn-462 or equivalent

    Y = Variable octal numbers

Entry word 5:

entry data octal output	0	0	0	1	Y	Y	Y	Y
bit position	23 22 21	20 19 18	17 16 15	14 13 12	11 10 9	8 7 6	5 4 3	2 1 0
binary values	0 0 0	0 0 0	0 0 0	0 1 0	X X X	X X X	X X X	X X X

bit positions 16–12: SP MEMBER NUMBER
bit positions 11–10: L OR R MATRIX
bit positions 9–4: SP ROW NUMBER
bit positions 3–0: SP COLUMN NUMBER

bit positions 16–0: DUPLICATE BASE SP PULSE POINT

    X...X = Converts to decimal SP info   Y = Variable octal numbers
            as reflected in office record
            drawing T-nnnn-Hn-461 or equivalent

VERIFY DIF/DIF-E1 UT TRANSLATOR

TABLE B (Contd)	
ENTRY WORD (OCTAL)	**UT ENTRY DATA AND WORD CONFIGURATION**

Entry Word 6

entry data octal output	0	0	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

Fields: SP MEMBER NUMBER (bits 16–12); L OR R MATRIX (bits 11–10); SP ROW NUMBER (bits 9–4); SP COLUMN NUMBER (bits 3–0); MEMBER BASE MISCELLANEOUS SD NUMBER (bits 16–0)

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent
Y = Variable octal numbers

Entry Word 7

entry data octal output	0	0	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	0	0	0	0	0	X	X	X	X	X	0	X	X	X	X	X	X	X	X	X	X	X

Fields: SP MEMBER NUMBER (bits 16–12); L OR R MATRIX (bits 11–10); SP ROW NUMBER (bits 9–4); SP COLUMN NUMBER (bits 3–0); BUS BASE MISCELLANEOUS SD NUMBER (bits 16–0)

X...X = Converts to decimal SP info as reflected in office record drawing T-nnnn-Hn-462 or equivalent
Y = Variable octal numbers

Entry Word 10

entry data octal output	0	0	0	0	0	0	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	X	X	X	X	X	X

Fields: CONTROLLER 1 (bits 5–3); CONTROLLER 0 (bits 2–0); DIF CONTROLLER VERSION NUMBER (bits 5–0)

XXX = Version numbers of DIF controllers as reflected in appropriate office record and shipping information
Y = Variable octal numbers

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

TABLE B (Contd)

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entry data octal output	Y	Y	Y	Y	Y	Y	Y	Y
bit position	23 22 21	20 19 18	17 16 15	14 13 12	11 10 9	8 7 6	5 4 3	2 1 0
binary values	X X X	X X X	X X X	X X X	X X X	X X X	X X X	X X X

MEMBER CLASS AC/B VERSION RECORD

Y...Y = Values as determined from next higher technical support group

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entry data octal output	Y	Y	0	0	0	0	0	0
bit position	23 22 21	20 19 18	17 16 15	14 13 12	11 10 9	8 7 6	5 4 3	2 1 0
binary values	X Z Z	Z Z Z	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0

EST IA	EST MEMBER NUMBER "A"		DIU 15	DIU 14	DIU 13	DIU 12	DIU 11	DIU 10	DIU 9	DIU 8
			SUBMEMBER EQUIPAGE (DIU 8-15)							

X = EST Indicator "A"
    0 = DIF is not associated with an EST
    1 = DIF is associated with an EST

Y = Variable octal numbers

Z...Z = First EST member number associated (if any) with DIF (DIUs 0-6 and 8-14)

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Word 13

entry data octal output →

Y	Y	0	0	0	0	0	0

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

X	Z	Z	Z	Z	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

E S T I B	EST MEMBER NUMBER "B"		DIU 23	DIU 22	DIU 21	DIU 20	DIU 19	DIU 18	DIU 17	DIU 16
			SUBMEMBER EQUIPAGE (DIU 16-23)							

X = EST Indicator "B"
  0 = DIF is not associated with an EST
  1 = DIF is associated with an EST

Y = Variable octal numbers

Z...Z = Second EST member number associated (if any) with DIF (DIUs 16-22 and 24-30)

Word 14

entry data octal output →

0	0	0	0	0	0	0	0

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	DIU 33	DIU 32	DIU 31	DIU 30	DIU 29	DIU 28	DIU 27	DIU 26	DIU 25	DIU 24
	SPB	SPA								
	SPARE DIU EQUIPAGE		SUBMEMBER EQUIPAGE (DIU 24-31)							

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION
15	entry data octal output → Y Y 0 0 0 0 0 0
	bit position → 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
	binary values → X X X X X X 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	TSI MEMBER DELIVERING CLOCK TO THIS DIF
	X.X = Converts to decimal TSI number as reflected in appropriate office record
	Y = Variable octal numbers

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VERIFY DIF/DIF-E1 UT TRANSLATOR

TABLE B (Contd)	

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION
16* through 55	entry data octal output →

entry data octal output →

U	U	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

O	O	W	W	W	W	Z	Z	Z	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X

	TYPE HARDWARE	DIU VERSION NUMBER	5 4 3 2 1 — DIGROUP TYPE OF PROT. SW	TSI MEMBER NUMBER	S P C	TSI PORT NO.

DIU TO TSI LEVEL ASSIGNMENT

X...X = Converts to decimal DIU-TSI
        level assignment as reflected
        in office record drawing
        T-nnnn-Hn-467 or equivalent

Y = Variable Octal Numbers

ZZZ = Version numbers of DIUs as reflected
        in appropriate office record and
        shipping info

UU = Type Hardware (Octal)
        00 = DIU unequipped
        01 = DIU hardware pack is SM1B
        02 = Unassigned
        03 = Unassigned
        04 = Unassigned
        05 = Unassigned
        06 = DIU is used for MF service circuit
        07 = DIU is used for DTMF service circuit
        10 = Unassigned
        11 = DIU hardware pack is SM9
        12 = DIU hardware pack is SM10

V = Digroup Type of Protection Switching
        0 = Trunks on Digroup not to be removed
                when DIU protection switched
        1 = Trunks on Digroup to be removed when
                DIU protection switched

* Word associated with each DIU as follows:

DIU	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
WORD	16	17	20	21	22	23	24	25	26	27	30	31	32	33	34	35	36	37	40	41	42	43	44	45	46	47	50	51	52	53	54	55

VERIFY DIF/DIF-E1 UT TRANSLATOR

TABLE B (Contd)

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

entry data octal output →

U	U	Y	Y	Y	0	0	0

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

O	O	W	W	W	W	Z	Z	Z	V	V	V	V	V	0	0	0	0	0	0	0	0	0	0

	TYPE HARDWARE	DIU VERSION NUMBER	5 4 3 2 1 DIGROUP TYPE OF PROT. SW	

SPARE A/B - DIU 32/33

ENTRY WORD (OCTAL): 56* and 57

UU = Type Hardware (Octal)
- 00 = DIU unequipped
- 01 = DIU hardware pack is SM1B
- 02 = Unassigned
- 03 = Unassigned
- 04 = Unassigned
- 05 = Unassigned
- 06 = DIU is used for MF service circuit
- 07 = DIU is used for DTMF service circuit
- 10 = Unassigned
- 11 = DIU hardware pack is SM9
- 12 = DIU hardware pack is SM10

V = Digroup Type of Protection Switching
- 0 = Trunks on Digroup not to be removed when DIU protection switched
- 1 = Trunks on Digroup to be removed when DIU protection switched

Y = Variable Octal Numbers

ZZZ = Version numbers of DIUs as reflected in appropriate office record and shipping info

* Word associated with each DIU as follows:

DIU	SPARE A (32)	SPARE B (33)
WORD	56	57

VERIFY DIF/DIF-E1 UT TRANSLATOR

	TABLE B (Contd)
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION
60	entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

EXECUTIVE CONTROLLER	SIGNAL PROCESSOR	MAINTENANCE PROCESSOR	EXECUTIVE CONTROLLER	SIGNAL PROCESSOR	MAINTENANCE PROCESSOR

CONTROLLER 1	CONTROLLER 0

FIRMWARE VERSION DATA

XXX = Version numbers of DIF firmware as
reflected in appropriate office record

Y = Variable octal numbers

VERIFY DIF/DIF-E1 UT TRANSLATOR

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

X	X	X	X	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

TYPE OF HARDWARE FOR DIGROUP 5	TYPE OF DIGROUP 5	TYPE OF DIGROUP 4	TYPE OF DIGROUP 3	TYPE OF DIGROUP 2	TYPE OF DIGROUP 1

XXXX = Type of Hardware for Digroup 5
    0000 = Unassigned
    0001 = SM1B
    1001 = SM9
    1010 = SM10

    Y = Variable octal number

ZZZZ = Type of Digroup
    0000 = Unassigned
    0001 = POTS-SF (SF+RB+POTS+ZCS)
    0010 = POTS-SF (SF+RB+POTS+B8ZS)
    0011 = 4ST/INT-SF (SF+RB+4ST+ZCS)
    0100 = 4ST/INT-ESF (ESF+RB+4ST+B8ZS)
    0101 = POTS-64kR (ESF+RB+POTS+ZCS)
    0110 = POTS-ESF (ESF+RB+POTS+B8ZS)
    0111 = POTS-PCC (ESF+64CC (B8ZS))
    1000 = POTS-PCC (ESF+PCC (B8ZS))

ENTRY WORD (OCTAL): 61* through 120

* Word associated with each DIU as follows:

DIU	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
WORD	61	62	63	64	65	66	67	70	71	72	73	74	75	76	77	100	101	102	103	104	105	106	107	110	111	112	113	114	115	116	117	120

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

entry data octal output →

| 0 | Y | Y | Y | Y | Y | Y | Y |

bit position →

| 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

binary values →

| 0 | 0 | 0 | 0 | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z |

| TYPE OF HARDWARE FOR DIGROUP 5 | TYPE OF DIGROUP 5 | TYPE OF DIGROUP 4 | TYPE OF DIGROUP 3 | TYPE OF DIGROUP 2 | TYPE OF DIGROUP 1 |

Y = Variable octal number

ZZZZ = Type of Digroup
0000 = Unassigned
0001 = POTS-SF (SF+RB+POTS+ZCS)
0010 = POTS-SF (SF+RB+POTS+B8ZS)
0011 = 4ST/INT-SF (SF+RB+4ST+ZCS)
0100 = 4ST/INT-ESF (ESF+RB+4ST+B8ZS)
0101 = POTS-64kR (ESF+RB+POTS+ZCS)
0110 = POTS-ESF (ESF+RB+POTS+B8ZS)
0111 = POTS-PCC (ESF+64CC (B8ZS))
1000 = POTS-PCC (ESF+PCC (B8ZS))

121* and 122

* Word associated with each DIU as follows:

DIU	SPARE A (32)	SPARE B (33)
WORD	121	122

Added

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VERIFY DIF/DIF-E1 UT TRANSLATOR

[1] Using FIG. 1 and 2, determine
    octal word associated with
    growth unit ─────────────

[2] Note contents of word(s) in entry
    output message containing version
    data to be verified ─────────

[3] For each controller and/or submember,
    convert octal digits to version number
    per FIG. 1 and 2 and record ─────

[4] Obtain from shipping information or
    installer LDI issue number(s) for
    each growth frame controller and/or
    submember ─────────

AND ──► Page 2

0				0				Y			Y		
10	9	8	7	6	5	4	3	2	1	0
0	0	0	0	0	X	X	X	X	X	X
					CONTROLLER 1			CONTROLLER 0		
					DIF CONTROLLER VERSION NUMBER					

FIG. 1 ─ Entry Word 10 Layout

entry data
octal output ──►

	U			U			Y		
bit position ──►	23	22	21	20	19	18	17	16	15
binary values ──►	W	W	W	W	W	W	X	X	X
	TYPE HARDWARE						* DIU VERSION NUMBER		

* Word associated with each DIU as follows:

DIU	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
WORD	16	17	20	21	22	23	24	25	26	27	30	31	32	33	34	35	36	37	40	41	42	43	44	45	46	47	50	51	52	53	54	55	56	57

FIG. 2 ─ Entry Words 16 Through 57 Layout

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VERIFY DIF CONTROLLER AND/OR SUBMEMBER VERSION NUMBERS

[5] Using TABLE A, select version
    numbers associated with LDI
    issues on Page 1, Step 4.
    See NOTE 1 ─────────────────

                                    AND   [7] Record
                                                     discrepancies
                                                     found in Step 6

[6] Compare version numbers in
    Step 5 with version numbers
    calculated on Page 1, Step 3 ─────

TABLE A					
UNIT	**SD NUMBER**	**MEMBER VERSION NUMBER**			
		0	**1**	**2**	**3**
DIF-E1 Controller	5X400-01	*1A	—	—	—
DIF-E1 Unit	5X400-01	—	1A	—	—
DIF-E1 Controller	5X400-02	1A	—	—	—
DIF-E1 Unit	5X400-02	—	1A	—	—
DIF Controller	5G208-01	1A	—	—	—
DIF Unit	5G208-01	—	1A	—	—
* LDI Issue Numbers					

NOTE 1
PECC diagnostic
center may be
consulted for
current version
information if
not listed in
TABLE A

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VERIFY DIF CONTROLLER AND/OR SUBMEMBER VERSION NUMBERS

SUMMARY
Call up RC Form 801 on CRT. Using TTY, fill in blank fields
on form to identify and to change terminal unit MP and SP
data within the selected word of the DIF UT translator.
Enter message; then verify inactive translations.

```
RC:FUNC;CHG;OPT(TRANS), ---:                    TRANSID_____,
ORNU _____,
ENTRY _____, WORDNO _____,
SIZE __,  DISP __,
BINOCT _,
NEWDATA _____ ,
OLDDATA _____ ,
REMARKS -------------------------------------------------- !
```

FIG. 1 — Blank RC Form 801

[1] Enter
   VER:UTYPE:DIF a!
   a = DIF member number

[2] Convert three rightmost
   octal digits in word 60
   to binary

[3] Record binary bits 7
   through 0 for later
   reference

[4] Using TG-4, Functional
   Listing, or other
   appropriate sources,
   determine firmware
   version data
   [NOTE 1]

[5] See CAUTION 1.
   Enter OP:RCFORM 801!

AND

[6] CRT displays
RC Form 801
per FIG. 1

Yes → Page 2

No

[7] Repeat
from Step 5

NOTE 1
PECC diagnostic
center may be
consulted for
current version
information

CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared

PERFORM FUNCTIONAL WORD CHANGE OF DIF-E1 CONTROLLER 0 FIRMWARE VERSION DATA (MP AND SP)

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[8] Read NOTES 2 and 3.
Using TTY and CRT
display of RC Form 801,
fill in blank fields on
RC Form 801 per TABLE A
and enter message

↓

(Page 3)

TABLE A

RC:FUNC;CHG;OPT(TRANS),a: TRANSID b,

ORNU c,

ENTRY d,   WORDNO e,

SIZE f, DISP g,

BINOCT h,

NEWDATA i,

OLDDATA j,

REMARKS_____ !

---

a = TST
b = UTDIF
c = RC order number
d = DIF member number
e = 48
f = 8
g = 0
h = B
i = Firmware version data in binary
    determined in Step 4
    (8 binary bits required)
j = Binary bits 7-0 recorded in Step 3

NOTES
2. The quantity of
   binary bits to be
   entered as NEWDATA
   must be equal to
   decimal number
   entered as SIZE
3. The quantity of
   binary bits to be
   entered as OLDDATA
   must be equal to
   quantity of bits
   entered as NEWDATA

PERFORM FUNCTIONAL WORD CHANGE OF DIF-E1 CONTROLLER 0
FIRMWARE VERSION DATA (MP AND SP)

[9] Was recent change SUCCESSFULLY TESTED and SUCCESSFULLY BUFFERED [TABLE B]

Yes → Page 4

No

[9] Analyze output message for error and repeat from Step 1, Page 1, with corrected input data

```
                        TABLE B
┌──────────────────────────────────────────────────────┐
│ RC ORNU a SUCCESSFULLY TESTED                          │
│                                                        │
│ RC ORNU a SUCCESSFULLY BUFFERED                        │
│                                                        │
│ RC:FUNC;CHG;OPT(TRANS),BUF:   TRANSID UTDIF,           │
│ ORNU a,                                                │
│ ENTRY b,              WORDNO 48,                       │
│ SIZE 8,               DISP 0,                          │
│ BINOCT B,                                              │
│ NEWDATA c,                                             │
│ OLDDATA d,                                             │
│ REMARKS _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _!  │
│ REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR      │
│ AFTER THE MESSAGE IS ACTIVATED                         │
│                                                        │
│ WORD 0     _____ _____ _____ _____                │
│            _____ _____ _____ _____                │
│ WORD 10    _____ _____ _____ _____                │
│                          •                            │
│                          •                            │
│ WORD 120   _____ _____ • _____                     │
├──────────────────────────────────────────────────────┤
│ a = RC order number                                   │
│ b = DIF member number                                 │
│ c = New data entered                                  │
│ d = Old data entered                                  │
└──────────────────────────────────────────────────────┘
```

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PERFORM FUNCTIONAL WORD CHANGE OF DIF-E1 CONTROLLER 0 FIRMWARE VERSION DATA (MP AND SP)

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```
┌─────────────────────┐
│ [11] Enter          │
│ RCACT:ORNU a!       │
│ a = RC order        │
│     number          │
└─────────────────────┘
          │
          ▼
       ╱────────────╲                    ╱──────────────╲
      ╱ [12] Was recent╲    Yes         ╱ [14] Does output╲        Yes
     ╱  change ACTIVATED ╲──────────────╱ message indicate  ╲───────────┤
     ╲  [TABLE C]        ╱              ╲ changed data field(s)╱
      ╲                 ╱                ╲ are correct for this╱
       ╲──────────────╱                  ╲ recent change     ╱
          │                               ╲───────────────╱
          │ No                                │
          ▼                                   │ No
┌─────────────────────┐                       ▼
│ [13] Determine      │             ┌─────────────────────┐
│ cause for reject;   │             │ [15] If data changes│
│ repeat from         │             │ require corrections:│
│ Step 11             │             │ repeat from         │
│                     │             │ Step 1, Page 1, using│
└─────────────────────┘             │ corrected data      │
                                    │ entries             │
                                    └─────────────────────┘
```

TABLE C
RC ORNU a ACTIVATED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTDIF,
ORNU a,
ENTRY b,   WORDNO 48,
SIZE 8,   DISP 0,
BINOCT B,
NEWDATA c,
OLDDATA d,
REMARKS_____ !
a = RC order number
b = DIF member number
c = New data entered
d = Old data entered

PERFORM FUNCTIONAL WORD CHANGE OF DIF-E1 CONTROLLER 0 FIRMWARE VERSION DATA (MP AND SP)

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SUMMARY
Call up RC Form 801 on CRT. Using TTY, fill in blank fields
on form to identify and to change terminal unit MP and SP
data within the selected word of the DIF UT translator.
Enter message; then verify inactive translations.

```
RC:FUNC;CHG;OPT(TRANS), ---:            TRANSID_____,
ORNU ------,
ENTRY -------, WORDNO -----,
SIZE --,  DISP --,
BINOCT -,
NEWDATA ----------------------- ,
OLDDATA ---------------------- ,
REMARKS ------------------------------------------------- !
```

FIG. 1 — Blank RC Form 801

[1] Enter
    VER:UTYPE:DIF a!
    a = DIF member number

[2] Convert second leftmost
    octal digit in word 0 to
    binary

[3] Record binary bits 20
    through 18 for later
    reference

[4] See CAUTION 1.
    Enter OP:RCFORM 801!

AND

[5] CRT displays
RC Form 801
per FIG. 1

Yes → Page 2

No

[6] Repeat
from Step 1

PERFORM FUNCTIONAL WORD CHANGE OF DIF-E1 MTHG DATA

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[7] Read NOTES 1 and 2.
Using TTY and CRT
display of RC Form 801,
fill in blank fields on
RC Form 801 per TABLE A
and enter message

Page 3

```
                          TABLE A
RC:FUNC;CHG;OPT(TRANS),a:        TRANSID b,

ORNU c,

ENTRY d,           WORDNO e,

SIZE f,            DISP g,

BINOCT h,

NEWDATA i,

OLDDATA j,

REMARKS_____ !
```

```
a = TST
b = UTDIF
c = RC order number
d = DIF member number
e = 0
f = 3
g = 18
h = B
i = 011 (for MF) or
    100 (for DTMF with or without 4 State) or
    101 (for MF 4 State)
j = Binary bits 20-18 recorded in Step 3
```

NOTES
1. The quantity of
   binary bits to be
   entered as NEWDATA
   must be equal to
   decimal number
   entered as SIZE
2. The quantity of
   binary bits to be
   entered as OLDDATA
   must be equal to
   quantity of bits
   entered as
   NEWDATA

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PERFORM FUNCTIONAL WORD CHANGE OF DIF-E1 MTHG DATA

```
[8] Was recent
change SUCCESSFULLY    Yes
TESTED and        ────────────▶   ( Page 4 )
SUCCESSFULLY
BUFFERED [TABLE B]

        │ No
        ▼

[9] Analyze output
message for error
and repeat from
Step 1, Page 1, with
corrected input data
```

TABLE B
RC ORNU a SUCCESSFULLY TESTED
RC ORNU a SUCCESSFULLY BUFFERED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTDIF, ORNU a, ENTRY b,   WORDNO 0, SIZE 3,   DISP 18, BINOCT B, NEWDATA c, OLDDATA d, REMARKS _!
REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR AFTER THE MESSAGE IS ACTIVATED
WORD 0   _____ _____ _____ _____   _____ _____ _____ _____ WORD 10   _____ _____ _____ _____   •   •   • WORD 120   _____ _____ • _____
a = RC order number b = DIF member number c = New data entered d = Old data entered

Flowchart

[10] Enter RCACT:ORNU a!
a = RC order number

↓

[11] Was recent change ACTIVATED [TABLE C]

— No → **[12] Determine cause for reject; repeat from Step 10**

— Yes → **[13] Does output message indicate changed data field(s) are correct for this recent change**

- Yes → ▌

- No → **[14] If data changes require corrections: repeat from Step 1, Page 1, using corrected data entries** → ▌

TABLE C

TABLE C
RC ORNU a ACTIVATED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTDIF, ORNU a,
ENTRY b,   WORDNO O,
SIZE 3,   DISP 18,
BINOCT B,
NEWDATA c,
OLDDATA d,
REMARKS_____ !
a = RC order number b = DIF member number c = New data entered d = Old data entered

List of Circuit Packs Required to Convert
DIF-E1 Domestic Frame to Multifrequency, DTMF, or 4 State
Capability (both controllers):

1. Two circuit packs each of the following:
   TM10B
   TM371
   TM372 or **TM684** [NOTE 1]
   TM373
   TM374

   NOTE 1: CN 8225MV must be applied before **TM684**
           can be used

2. Two circuit packs of one of the following:
   MC4A034A1 (for MF only capability)
   MC4A035A1 (for DTMF and/or 4 State capability)
   MC4A044A1 (for MF and/or 4 State capability)

3. Two circuit packs of one of the following:
   TM376 (when using MC4A034A1 circuit pack)
   TM377 (when using MC4A035A1 or MC4A044A1 circuit pack)

4. Four circuit packs of **TM375**.

CIRCUIT PACKS REQUIRED TO CONVERT ONE DIF-E1 DOMESTIC FRAME TO MF, DTMF, OR 4 STATE CAPABILITY

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At DIF-E1 frame to be converted:
[1] See WARNING 1 and NOTE 1. Remove circuit
    packs from controller 0 [TABLE A]

AND

[2] See WARNING 1. Install new circuit
    packs for controller 0 [TABLE B]
    if not already installed

TABLE A		
LOCATION	QTY	CIRCUIT PACK
170-025	1	**MC4A033A1/MC4A034A1**
170-055	1	**TM10**
170-097	1	**TM7**
152-007	1	**TM306**
152-013	1	**TM306**
152-019	1	**TM305**
152-025	1	**TM307**
152-031	1	**TM304**
152-037	1	**TM303**
152-043	1	**TM302**
152-103	1	**TM366**
152-115	1	**TM366**
144-049	1	**TM16**
144-097	1	**TM362/TM376**

TABLE B		
LOCATION	QTY	CIRCUIT PACK
170-025	1	**MC4A034A1** (for MF only capability) or
		MC4A035A1 (for DTMF and/or 4 State
		capability) or
		MC4A044A1 (for MF and/or 4 State capability)
170-055	1	**TM10B**
170-097	1	**TM371**
152-037	1	**TM374**
152-043	1	**TM373**
152-103	1	**TM375**
152-115	1	**TM375**
144-049	1	**TM372** or **TM684***
144-097	1	**TM376** (when using **MC4A034A1** circuit pack) or
		TM377 (when using **MC4A035A1** or **MC4A044A1**
		circuit pack)

*CN 8225MV must be applied before **TM684** can be used

NOTE 1
Some circuit packs
may have been
removed and replaced
earlier. Only
circuit packs listed
in TABLE A are to
be removed

WARNING 1
An antistatic
wrist strap must
be worn to
prevent
electrostatic
discharge and
possible damage
to circuit packs
while handling

REPLACE DIF-E1 CONTROLLER 0 CIRCUIT PACKS WITH NEW CIRCUIT PACKS
TO CONVERT CONTROLLER 0 TO MF, DTMF, OR 4 STATE

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At DIF-E1 frame to be converted:
[1] See WARNING 1 and NOTE 1. Remove circuit
    packs from controller 1 [TABLE A]

[2] See WARNING 1. Install new circuit
    packs for controller 1 [TABLE B]
    if not already installed

AND

TABLE A		
LOCATION	QTY	CIRCUIT PACK
170-189	1	TM7
170-231	1	TM10
170-261	1	MC4A033A1/MC4A034A1
152-171	1	TM366
152-183	1	TM366
152-243	1	TM302
152-249	1	TM303
152-255	1	TM304
152-261	1	TM307
152-267	1	TM305
152-273	1	TM306
152-279	1	TM306
144-189	1	TM362/TM376
144-237	1	TM16

TABLE B		
LOCATION	QTY	CIRCUIT PACK
170-189	1	TM371
170-231	1	TM10B
170-261	1	MC4A034A1 (for MF only capability) or MC4A035A1 (for DTMF and/or 4 State capability) or MC4A044A1 (for MF and/or 4 State capability)
152-171	1	TM375
152-183	1	TM375
152-243	1	TM373
152-249	1	TM374
144-189	1	TM376 (when using MC4A034A1 circuit pack) or TM377 (when using MC4A035A1 or MC4A044A1 circuit pack)
144-237	1	TM372 or TM684*

* CN 8225MV must be applied before TM684 can be used

NOTE 1
Some circuit packs may have been removed and replaced earlier. Only circuit packs listed in TABLE A are to be removed

WARNING 1
An antistatic wrist strap must be worn to prevent electrostatic discharge and possible damage to circuit packs while handling

REPLACE DIF-E1 CONTROLLER 1 CIRCUIT PACKS WITH NEW CIRCUIT PACKS TO CONVERT CONTROLLER 1 TO MF, DTMF, OR 4 STATE

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SUMMARY
Call up RC Form 801 on CRT. Using TTY, fill in blank fields
on form to change MP and SP firmware data within the selected
word of the DIF UT translator. Enter message; then verify.

[1] Enter
VER:UTYPE:DIF a!
a = DIF member number

[2] Convert second, third, and
fourth leftmost octal digits
in word 60 to binary

[3] Record binary bits 19
through 12 for later
reference

[4] Using TG-4, Functional
Listing, or other
appropriate sources,
determine firmware version
data [NOTE 1]

[5] See CAUTION 1.
Enter OP:RCFORM 801!

```
RC:FUNC;CHG;OPT(TRANS), ---:              TRANSID_____,
ORNU _____,
ENTRY _____, WORDNO _____,
SIZE __,  DISP __,
BINOCT _,
NEWDATA _____ ,
OLDDATA _____ ,
REMARKS _____ !
```

FIG. 1 — Blank RC Form 801

AND

[6] CRT displays
RC Form 801
per FIG. 1

Yes → Page 2

No

[7] Repeat
from Step 1

NOTE 1
PECC diagnostic
center may be
consulted for
current version
information

*CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared*

PERFORM FUNCTIONAL WORD CHANGE OF DIF-E1 CONTROLLER 1 FIRMWARE VERSION DATA (MP AND SP)

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[8] Read NOTES 2 and 3. Using TTY and CRT display of RC Form 801, fill in blank fields on RC Form 801 per TABLE A and enter message

↓

(Page 3)

```
                              TABLE A
RC:FUNC;CHG;OPT(TRANS),a:          TRANSID b,

ORNU c,

ENTRY d,        WORDNO e,

SIZE f,  DISP g,

BINOCT h,

NEWDATA i,

OLDDATA j,

REMARKS_____ !
```

```
a = TST
b = UTDIF
c = RC order number
d = DIF member number
e = 48
f = 8
g = 12
h = B
i = Firmware version data in binary
    determined in Step 4
    (8 binary bits required)
j = Binary bits 19-12 recorded in Step 3
```

NOTES
2. The quantity of binary bits to be entered as NEWDATA must be equal to decimal number entered as SIZE
3. The quantity of binary bits to be entered as OLDDATA must be equal to quantity of bits entered as NEWDATA

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PERFORM FUNCTIONAL WORD CHANGE OF DIF-E1 CONTROLLER 1 FIRMWARE VERSION DATA (MP AND SP)

[9] Was recent change SUCCESSFULLY TESTED and SUCCESSFULLY BUFFERED [TABLE B]

Yes → Page 4

No ↓

[10] Analyze output message for error; repeat from Step 1, Page 1, with corrected input data

TABLE B

RC ORNU a SUCCESSFULLY TESTED

RC ORNU a SUCCESSFULLY BUFFERED

RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTDIF,
ORNU a,
ENTRY b,   WORDNO 48,
SIZE 8,   DISP 12,
BINOCT B,
NEWDATA c,
OLDDATA d,
REMARKS _!

REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR
AFTER THE MESSAGE IS ACTIVATED

WORD 0   _____ _____ _____ _____

            _____ _____ _____ _____
WORD 10   _____ _____ _____ _____
                            •
                            •
                            •
WORD 120   _____ _____ _____

---

a = RC order number
b = DIF member number
c = New data entered
d = Old data entered

PERFORM FUNCTIONAL WORD CHANGE OF DIF-E1 CONTROLLER 1
FIRMWARE VERSION DATA (MP AND SP)

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```
┌─────────────────────────┐
│ [11] Enter              │
│ RCACT:ORNU a!           │
│ a = RC order            │
│     number              │
└─────────────────────────┘
             │
             ▼
      ╱─────────────╲                    ╱─────────────────────╲
     ╱  [12] Was      ╲      Yes        ╱  [14] Does output      ╲      Yes
    ╱   recent change  ╲──────────────▶╱  message indicate        ╲──────────────┤
    ╲   ACTIVATED      ╱               ╲  changed data field(s)    ╱
     ╲  [TABLE C]     ╱                 ╲  are correct for this   ╱
      ╲─────────────╱                    ╲  recent change        ╱
             │                             ╲─────────────────────╱
            No                                       │
             │                                      No
             ▼                                       │
┌─────────────────────────┐                          ▼
│ [13] Determine          │              ┌─────────────────────────┐
│ cause for reject;       │              │ [15] If data changes    │
│ repeat from             │              │ require corrections:    │
│ Step 11                 │              │ repeat from Step 1,     │──────┤
└─────────────────────────┘              │ Page 1, using           │
                                         │ corrected data          │
                                         │ entries                 │
                                         └─────────────────────────┘
```

TABLE C
RC ORNU a ACTIVATED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTDIF, ORNU a,
ENTRY b,   WORDNO 48,
SIZE 8,   DISP 12,
BINOCT B,
NEWDATA c,
OLDDATA d,
REMARKS_____ !
a = RC order number b = DIF member number c = New data entered d = Old data entered

PERFORM FUNCTIONAL WORD CHANGE OF DIF-E1 CONTROLLER 1 FIRMWARE VERSION DATA (MP AND SP)

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[1] At 1B MTC terminal, enter **VER:UTYPE:DIF** a!
a = Member number of growth associated DIF

[2] Are message format and member identification correct per TABLE A

No → [3] Determine cause and resolve; repeat from Step 1

Yes

[4] Using printout, verify unequipped status of growth DIU per word 0, 12, 13, or 14 in TABLE B, Page 7

(Page 2)

TABLE A

VER:UTMN;OPT(),CUR: FLN a,   UTYN DIF,

MEMN b,   ME OPER,
ENTRY ADDRESS c,   ENTRY SIZE 83,

CUR
WORD 0   ____ ____ ____ ____
          ____ ____ ____ ____

WORD 10   ____ ____ ____ ____
          ____ ____ ____ ____

WORD 20   ____ ____ ____ ____
          ____ ____ ____ ____

              •
              •
              •
              •

WORD 120 ____ ____ ____

a = Floor location number
b = Member number of growth associated DIF
c = Starting octal address for UT entry

TABLE C

[5] Is equipage state of growth DIU set to 00

No → **[6]** See CAUTION 1. Using RC Form 701, degrow submember equipage to unequipped [DLP-527]

Yes

[7] Using TABLE C, identify octal word associated with growth DIU

[8] If 4-state DIU being grown, using TABLE C, identify next octal word to word identified in Step 7 [NOTE 1]

[9] Using printout and TABLE B, Page 7, verify growth DIU version number per generic word(s) identified in Steps 7 and 8 [DLP-603]

AND

[10] Were version errors noted

No → Page 3

Yes

[11] See CAUTION 1. Using RC Form 801, perform functional word change to correct version number [DLP-525] → Page 3

TABLE C					
GROWTH DIU	OCTAL WORD	GROWTH DIU	OCTAL WORD	GROWTH DIU	OCTAL WORD
0	16	11	31	22	44
1	17	12	32	23	45
2	20	13	33	24	46
3	21	14	34	25	47
4	22	15	35	26	50
5	23	16	36	27	51
6	24	17	37	28	52
7	25	18	40	29	53
8	26	19	41	30	54
9	27	20	42	31	55
10	30	21	43		

NOTE 1
If 4-state DIU is being grown, the following odd numbered DIU must be unequipped or a PIU DIU (SM1B — non E&M signaling)

CAUTION 1
Depending on local procedures, supervisory or TELCO engineering approval must be obtained prior to performing any data change

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VERIFY DIF UT DATA ASSOCIATED WITH GROWTH DIU

```
+-------------------------+              +-------------------+
| [12] Using printout,    |              /                   \
| TABLE B, Page 7; and    |             /   [13] Were    No   \-------------------+
| office records, verify  |------------<    errors noted       >                  |
| growth DIU Digroup type |             \                     /                   |
| of protection switching |              \                   /                    |
| word(s) identified in   |               +--------+--------+                     |
| Steps 7 and 8, Page 2   |                        |                               |
+-------------------------+                       Yes                             |
                                                   |                              |
                                                   v                              |
                                    +--------------------------+                  |
                                    | [14] See CAUTION 2.      |                  |
                                    | Using RC Form 801,       |            +-----v-----+
                                    | perform functional       |            |           |
                                    | word change to correct   |----------->|  Page 4   |
                                    | Digroup type of          |            |           |
                                    | protection switching     |            +-----------+
                                    | [DLP-525]                |
                                    +--------------------------+
```

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VERIFY DIF UT DATA ASSOCIATED WITH GROWTH DIU

[15] Using printout, TABLE B, Page 7;
and office records, verify growth
DIU to TSI port assignment per
word(s) identified in Steps 7
and 8, Page 2 [DLP-584]

[16] Were
discrepancies
noted in Step 15

No

Yes

[17] Refer problem
to office supervisor/
installer to determine
error and decide on
corrective action

[18] Error
was found to
be in

Office
record

UT entry
data

[19] Take appropriate
corrective action as
determined by
regional engineering
and as approved by
office supervisor

Page 5

VERIFY DIF UT DATA ASSOCIATED WITH GROWTH DIU

[20] Using printout, TABLE B, Page 7,
and office records, verify Type
Hardware per word(s) identified
in Steps 7 and 8, Page 2

[21] Using TABLE D, identify
octal word associated with
growth DIU

[22] If 4-state DIU being grown,
using TABLE D, identify next
octal word to word identified
in Step 21 [NOTE 2]

AND → Page 6

Using printout, TABLE B, Page 7,
and office records:
[23] Verify Type of Digroup per
word(s) identified in Steps
21 and 22

[24] Verify Type of Hardware for
Digroup 5 per word(s) identified
in Steps 21 and 22

TABLE D					
GROWTH DIU	OCTAL WORD	GROWTH DIU	OCTAL WORD	GROWTH DIU	OCTAL WORD
0	61	11	74	22	107
1	62	12	75	23	110
2	63	13	76	24	111
3	64	14	77	25	112
4	65	15	100	26	113
5	66	16	101	27	114
6	67	17	102	28	115
7	70	18	103	29	116
8	71	19	104	30	117
9	72	20	105	31	120
10	73	21	106		

NOTE 2
If 4-state DIU is
being grown, the
following odd
numbered DIU must be
unequipped or a PIU
DIU (SM1B — non E&M
signaling)

VERIFY DIF UT DATA ASSOCIATED WITH GROWTH DIU

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```
┌─────────────────────────┐
│  [25] Were        No ───┼──────────┐
│  errors noted           │          │
└───────────┬─────────────┘          │
            │ Yes                     │
            ▼                         │
┌─────────────────────┐              │
│ [26] See CAUTION 3. │              │
│ Using RC Form 702,  ├──────────────┴───────│
│ perform functional  │
│ assignment word     │
│ change to correct   │
│ error(s) [DLP-646]  │
└─────────────────────┘
```

VERIFY DIF UT DATA ASSOCIATED WITH GROWTH DIU

	TABLE B
ENTRY WORD (OCTAL)	**UT ENTRY DATA AND WORD CONFIGURATION**

ENTRY WORD 0:

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

0	W	W	Z	Z	Z	1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	1

DIU 7	DIU 6	DIU 5	DIU 4	DIU 3	DIU 2	DIU 1	DIU 0

SUBMEMBER EQUIPAGE (DIU 0-7)

XX = Equipage Status of DIU   Y = Variable Octal Numbers
    00 = Unequipped
    11 = Operational

ENTRY WORD 12:

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values →

W	Z	Z	Z	Z	Z	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

DIU 15	DIU 14	DIU 13	DIU 12	DIU 11	DIU 10	DIU 9	DIU 8

SUBMEMBER EQUIPAGE (DIU 8-15)

XX = Equipage Status of DIU   Y = Variable Octal Numbers
    00 = Unequipped
    11 = Operational

VERIFY DIF UT DATA ASSOCIATED WITH GROWTH DIU

TABLE B (Contd)	
ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

Entry Word 13:

entry data octal output	Y		Y		Y		Y		Y		Y		Y		Y	
bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	W	Z	Z	Z	Z	Z	0	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

DIU 23	DIU 22	DIU 21	DIU 20	DIU 19	DIU 18	DIU 17	DIU 16

SUBMEMBER EQUIPAGE (DIU 16-23)

XX = Equipage Status of DIU   Y = Variable Octal Numbers
  00 = Unequipped
  11 = Operational

Entry Word 14:

entry data octal output	0		Y		Y		Y		Y		Y		Y		Y	
bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	0	0	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	DIU 33	DIU 32	DIU 31	DIU 30	DIU 29	DIU 28	DIU 27	DIU 26	DIU 25	DIU 24
	SP B	SP A								

SPARE DIU EQUIPAGE   SUBMEMBER EQUIPAGE (DIU 24-31)

XX = Equipage Status of DIU   Y = Variable Octal Numbers
  00 = Unequipped
  11 = Operational

TABLE B (Contd)

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

16 through 55	entry data octal output →
	bit position →
	binary values →
	
	X...X = Converts to decimal DIU-TSI level assignment as reflected in office record drawing T-nnnn-Hn-467 or equivalent
	
	UU = Type Hardware (Octal)
	    00 = DIU unequipped
	    01 = DIU hardware pack is SM1B
	    02 = Unassigned
	    03 = Unassigned
	    04 = Unassigned
	    05 = Unassigned
	    06 = DIU is used for MF service circuit
	    07 = DIU is used for DTMF service circuit
	    10 = Unassigned
	    11 = DIU hardware pack is SM9
	    12 = DIU hardware pack is SM10
	
	V = Digroup Type of Protection Switching
	    0 = Trunks on Digroup not to be removed when DIU protection switched
	    1 = Trunks on Digroup to be removed when DIU protection switched
	
	Y = Variable Octal Numbers
	
	ZZZ = Version numbers of DIUs as reflected in appropriate office record and shipping info

Bit configuration diagram:

	U		U		Y			Y			Y			Y		Y		Y	

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
O	O	W	W	W	W	Z	Z	Z	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X

| | | TYPE HARDWARE | DIU VERSION NUMBER | 5 4 3 2 1 — DIGROUP TYPE OF PROT. SW | TSI MEMBER NUMBER | S P C | TSI PORT NO. |

DIU TO TSI LEVEL ASSIGNMENT

VERIFY DIF/DIF-E1 UT TRANSLATOR

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

entry data octal output →

Y	Y	Y	Y	Y	Y	Y	Y

bit position →

23 22 21 20	19 18 17 16	15 14 13 12	11 10 9 8	7 6 5 4	3 2 1 0

binary values →

X X X X	Z Z Z Z	Z Z Z Z	Z Z Z Z	Z Z Z Z	Z Z Z Z
TYPE OF HARDWARE FOR DIGROUP 5	TYPE OF DIGROUP 5	TYPE OF DIGROUP 4	TYPE OF DIGROUP 3	TYPE OF DIGROUP 2	TYPE OF DIGROUP 1

XXXX = Type of Hardware for Digroup 5
    0000 = Unassigned
    0001 = SM1B
    1001 = SM9
    1010 = SM10

    Y = Variable octal number

ZZZZ = Type of Digroup
    0000 = Unassigned
    0001 = POTS-SF (SF+RB+POTS+ZCS)
    0010 = POTS-SF (SF+RB+POTS+B8ZS)
    0011 = 4ST/INT-SF (SF+RB+4ST+ZCS)
    0100 = 4ST/INT-ESF (ESF+RB+4ST+B8ZS)
    0101 = POTS-64kR (ESF+RB+POTS+ZCS)
    0110 = POTS-ESF (ESF+RB+POTS+B8ZS)
    0111 = POTS-PCC (ESF+64CC (B8ZS))
    1000 = POTS-PCC (ESF+PCC (B8ZS))

ENTRY WORD (OCTAL): 61 through 120

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VERIFY DIF/DIF-E1 UT TRANSLATOR

```
┌─────────────┐         ╱─────────────╲              ╱─────────────╲
│ [1] Enter   │        ╱ [2] Was message╲    Yes    ╱ [4] Does output╲        Yes
│ message     │───────▶│ accepted and did │────────▶│ message indicate │──────────────────────────┐
│ per TABLE A │        ╲ diagnostic run  ╱          │ phases 1 and 2   │                          │
└─────────────┘         ╲────────┬──────╱           │ ATP, and phases  │                          │
                                 │                   ╲ 3/4 NTR         ╱                           │
                              No │                    ╲───────┬───────╱                            │
                                 ▼                         No │                                    │
                        ┌─────────────┐                      ▼                                     │
                        │ [3] Analyze │              ╱─────────────╲       Yes   ┌──────────────┐  │
                        │ output message;           ╱ [5] Is this   ╲───────────▶│ [7] Refer trouble│
                        │ repeat from  │           │ a growth job    │           │ to installer for │─┐
                        │ Step 1 with  │            ╲               ╱            │ resolution; ATP  │ │
                        │ corrected data│            ╲──────┬──────╱             │ required         │ │
                        └─────────────┘                  No │                    └──────────────┘  │ │
                                                            ▼                                       │ │
                                                   ┌─────────────┐                                  │ │
                                                   │ [6] Clear DIF│                                 │ │
                                                   │ diagnostic failure;│───────────────────────────┘ │
                                                   │ ATP required │                                    │
                                                   │ [TOP 234-151-055]│                                │
                                                   └─────────────┘                                     │
```

TABLE A
DGN:DIF a,DIU b:PH c,GROWTH!
a = Member number of growth DIF
b = Submember number of growth DIU
c = 1-4 (for MF or DTMF DIU) or
1-3 (for all other DIUs)

DIAGNOSE GROWTH DIU WITH SME IN GROWTH

```
┌─────────────┐        ╱────────────╲              ╱────────────╲
│ [1] Enter   │       ╱ [2] Was      ╲    Yes      ╱ [4] Does output╲   Yes
│ message     │──────▶│ message       ├──────────▶│ message indicate ├──────────────┐
│ per TABLE A │       │ accepted and did│          │ ATP on phases    │              │
└─────────────┘       ╲ diagnostic run ╱           ╲ run             ╱               │
                       ╲──────┬───────╱              ╲──────┬───────╱                │
                              │ No                          │ No                     │
                              ▼                             ▼                        │
                       ┌─────────────┐              ╱────────────╲                   │
                       │ [3] Analyze │             ╱ [5] Is this  ╲   Yes   ┌─────────────┐
                       │ output message;│         │  a growth job  ├───────▶│ [7] Refer trouble│
                       │ repeat from  │           ╲               ╱         │ to installer for │──────┐
                       │ Step 1 with  │            ╲──────┬──────╱          │ resolution; ATP  │      │
                       │ corrected data│                  │ No              │ required         │      │
                       └─────────────┘                    ▼                 └─────────────┘      │
                                                   ┌─────────────┐                               │
                                                   │ [6] Clear DIF│                              │
                                                   │ diagnostic failure;│                        │
                                                   │ ATP required │────────────────────────────┤
                                                   │ [TOP 234-151-055]│                          │
                                                   └─────────────┘
```

TABLE A
DGN:DIF a,DIU b:PH c,GROWTH!
a = Member number of growth DIF
b = Submember number of growth DIU
c = 1-4 (for MF or DTMF DIU) or 1-3 (for all other DIUs)

DIAGNOSE GROWTH DIU WITH SME IN SPECIAL GROWTH

[1] Enter
    DUMP:DIF a,CREG!
    a = Member number
        DIF-E1 being
        converted
        [TABLE A]

CRT displays
output message
per NOTE 1

Using TTY output and TABLE B, Page 2:
    [2] Locate octal word 0
        and verify that
        controller 0 software
        status is active

AND

[4] Were
discrepancies
noted in
Steps 2 and 3

No

[3] Locate octal word 1
    and verify that
    controller 0 hardware
    status is active

[5] Determine
reason switch
request denied

Yes

[6] Enter
SW:DIF a!

AND

[7] Repeat from
Step 1

TABLE A
DUMP: DIF a, CREG!
___ ___ ___ ___ ___ ___ ___ ___
___ ___ ___ ___ ___ ___ ___ ___
___ ___ ___ ___ ___ ___ ___ ___
•
•
•
•
___ ___ ___ ___ ___ ___ ___ ___
___ ___ ___ ___ ___ ___ ___ ___
a = Member number of DIF-E1 being converted

NOTE 1
The first six lines
of output message
are dumps from
controller 0
registers. The last
six lines are dumps
from controller 1
registers

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VERIFY DIF-E1 CONTROLLER 0 IS ACTIVE

TABLE B																						

ENTRY WORD (OCTAL)	UT ENTRY DATA AND WORD CONFIGURATION

	entry data octal output →	Y	Y	Y	Y	Y	Y	Y	Y
0 and 1	bit position →	23 22 21	20 19 18	17 16 15	14 13 12	11 10 9	8 7	6 5 4	3 2 1 0
	binary values →						Z		

Z = Controller 0/1 Status
    0 = Inactive
    1 = Active

Y = Variable Octal Number

VERIFY DIF-E1 CONTROLLER 0 IS ACTIVE

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SUMMARY
Using Trunk Status message in TABLE A verifies that growth service circuits are preassigned to TSG and in CAD disabled state.

[1] Enter input message per TABLE A to verify MF or DTMF service circuits associated with growth DIU

[2] Does output message show growth service circuits preassigned and in CAD disabled state [TABLE B]

Yes

No

[3] Refer to appropriate support organization to assign service circuit trunks; repeat from Step 1

TABLE A
OP:TRKSTAT,CIN a SVC b;SUM:NUM 16,STAT CAD.DSA!
a = Base traffic number of service circuit associated with growth DIU
b = *MFR**** or *DMRV*** for Receivers   *MFX**** or *DMXM*** for Transmitters

†DIF	DIU	CKT	†TRAFFIC #
4	1	00	400
4	18	16	416
4	9	32	432
4	26	48	448
10	1	00	1000
10	18	16	1016
10	9	32	1032
10	26	48	1048

† For DIF numbers 2 to 23, use DIF number for first number of traffic number

i.e., DIF 12 Traffic numbers = 1200, 1216, 1232, and 1248

TABLE B
SAMPLE OUTPUT MESSAGE
OP:TRKSTAT CAD.DSA, CIN a SVC b 51T NUM, SUM COMPLETED TRK COUNT 16 06/27/84 08:56:34 #040
a = Base traffic number of service circuits associated with growth DIU b = *MFR**** or *DMRV*** for Receivers   *MFX**** or *DMXM*** for Transmitters

VERIFY GROWTH MF OR DTMF DIU SERVICE CIRCUITS ARE ASSIGNED TO TSG

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[1] Enter input message per TABLE A to test MF or DTMF DIU transmitter or receiver service circuits

[2] Was message accepted and did test run [TABLE A]

Yes

No

[3] Analyze output message; repeat from Step 1 using corrected data

[4] Does output message indicate ATP [TABLE A]

Yes

No

[5] Clear equipment troubles [TOP 234-151-055]; repeat from Step 1

[6] Have all MF or DTMF service circuits associated with growth DIU been tested

Yes

No

[7] Repeat from Step 1 for each MF transmitter or receiver still to be tested

TABLE A	
INPUT MESSAGE	OUTPUT MESSAGE
TEST:TRK,CIN a SVC b;SVC:TSG,STAT MTC.LK0,PALL!	TEST:TRK,CIN a SVC b;SVC,ATP
a = Base traffic number of first service circuit associated with growth DIU b = *MFR**** or *DMRV*** for Receivers *MFX**** or *DMXM*** for Transmitters	

TEST MF OR DTMF TRANSMITTER AND/OR RECEIVER SERVICE CIRCUITS OF GROWTH DIU

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[1] Using compool, determine
    address for OD4DIFTYPE

[2] At MTC, enter message
    DUMP:CSS,ADR a,L 32!
        a = Address determined
            in Step 1

[3] Using printout and TABLE A,
    record data word equal to
    growth associated DIF
    member number

[4] Convert two rightmost octal
    digits of data word (Step 2)
    to binary

AND → (Page 2)

TABLE A			
DUMP:CSS,INDIR 0,ADR a,INC +0 COMPLETED			
a	(WORD 0)	_____ _____ _____	
	(WORD 4)	_____ _____ _____	
a + 10	(WORD 8)	_____ _____ _____	
	(WORD 12)	_____ _____ _____	
a + 20	(WORD 16)	_____ _____ _____	
	(WORD 20)	_____ _____ _____	
a + 30	(WORD 24)	_____ _____ _____	
	(WORD 28)	_____ _____ _____	
a = Address determined in Step 1			

VERIFY DIF TYPE TABLE

[5] Verify that bits 4 through 0 are set per TABLE B [NOTE 1] for associated frame [FIG. 1]

[6] Are binary bits set per TABLE B

Yes

No

Page 3

TABLE B		
FRAME	MTHG	BITS 4-0
DTMF DIF-E1*	4	01000
DIF (J68960A)	0	00100
MF DIF-E1*	3 or 5	00001
Voice DIF-E1*	1	10000
* DIF-E1 is J5X059B		

entry data
octal output →
bit position →

	Y			Y		
5	4	3	2	1	0

binary values →

0	X	X	X	0	X
		D T M F			M F

VOICE
DIF-E1
(J5X059B)

DIF
(J68960A)

FIG. 1

NOTE 1
MTHG column in TABLE A is associated with Word 0 in unit type translator of DIF type being grown

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VERIFY DIF TYPE TABLE

[7] Record binary value of
    bits 4 through 0 for use as
    OLDDATA in word change ———

AND

[8] See CAUTION 1.
    Enter OP:RCFORM 800! ———

[9] CRT displays
RC Form 800
per FIG. 2

Yes → Page 4

No

[10] Repeat
from Step 8

```
RC:FUNC;CHG;OPT (ABSOLUTE),___:        FSONLY _,   ADDRESS _____,

ORNU _____,

WORDNO ____,

SIZE __,  DISP  __,

BINOCT _,

NEWDATA _____,

OLDDATA _____,

REMARKS _____!
```

FIG. 2 — Blank RC Form 800

VERIFY DIF TYPE TABLE

CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared

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[11] Read NOTES 1 and 2.
Using TTY and CRT
display of RC Form 800,
fill in blank fields on
RC Form 800 per TABLE C
and enter message

Page 5

TABLE C
RC:FUNC;CHG;OPT(ABSOLUTE),a: FSONLY b,   ADDRESS c,
ORNU d,
WORDNO e,
SIZE f,   DISP g,
BINOCT h,
NEWDATA i,
OLDDATA j,
REMARKS _____!

```
a = TST
b = N
c = Address determined in Step 1, Page 1
d = RC order number
e = DIF member number
f = 5
g = 0
h = B
i = 01000 (for DTMF frame)
    00100 (for DIF J68960A)
    00001 (for MF frame)
    10000 (for DIF-E1 J5X059B)
j = Binary bits 4 through 0 recorded in Step 7, Page 3
```

NOTES
1. The quantity of
   binary bits to
   be entered as
   NEWDATA must be
   equal to
   decimal number
   entered as **SIZE**
2. The quantity of
   binary bits to
   be entered as
   OLDDATA must be
   equal to
   quantity of bits
   entered as
   NEWDATA

VERIFY DIF TYPE TABLE

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[12] Was recent change SUCCESSFULLY TESTED and SUCCESSFULLY BUFFERED [TABLE D]

Yes →

[14] Enter message RCACT:ORNU a!
a = RC order No.

[15] Was recent change ACTIVATED [TABLE E, Page 6]

Yes → Page 6

No ↓ (from [12])

[13] Analyze output message for error; repeat from Step 8, Page 3, with corrected input data

No ↓ (from [15])

[16] Determine cause for reject and resolve; repeat from Step 14

TABLE D
RC ORNU a SUCCESSFULLY TESTED
RC ORNU a SUCCESSFULLY BUFFERED
RC:FUNC;CHG;OPT(ABSOLUTE),BUF: FSONLY N,ADDRESS a, ORNU b, WORDNO c, SIZE 5,   DISP 0, BINOCT B, NEWDATA d, OLDDATA e, REMARKS ---!
a = Address determined in Step 1, Page 1 b = RC Order number c = DIF member number d = New data entered e = Old data entered

VERIFY DIF TYPE TABLE

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```
 _____
/                \
| [17] Does output |
| message indicate |——— Yes ———|
| changed data fields |
| are correct      |
\ [TABLE E]       /
 _____/
        |
        No
        |
        v
 _____
| [18] Analyze output |
| message for error;  |
| repeat from Step 8, |
| Page 3, with        |
| corrected input data|
|_____|
```

TABLE E

```
RC ORNU a ACTIVATED

RC:FUNC;CHG;OPT(ABSOLUTE),BUF:  FSONLY N,ADDRESS a,
ORNU b,
WORDNO c,
SIZE 5,        DISP 0,
BINOCT B,
NEWDATA d,
OLDDATA e,
REMARKS -------------------------------------------------!

a = Address determined in Step 1, Page 1
b = RC Order number
c = DIF member number
d = New data entered
e = Old data entered
```

VERIFY DIF TYPE TABLE

[1] See NOTES 1 and 2. Enter
    message per TABLE A

[2] Using TTY printout, locate
    and record octal value
    for TSGN

[3] Enter message per TABLE B
    using recorded octal
    value (Step 2)

AND

[4] Does printout
indicate ASN under
STATUS column for
any circuit

Yes

No

[5] Refer to
appropriate support
organization to
assign receivers or
transmitters.
Repeat from Step 1

TABLE A
VER:TRKNAME,CIN a SVC b;DETL!

a = Base traffic number of service circuit associated
    with growth DIU

b = *MFR**** or *DMRV*** when testing transmitters
    *MFX**** or *DMXM*** when testing receivers

†DIF	DIU	CKT	†TRAFFIC #
4	1	00	400
4	18	16	416
4	9	32	432
4	26	48	448
10	1	00	1000
10	18	16	1016
10	9	32	1032
10	26	48	1048

† For DIF numbers 2 to 31, use DIF number for first
  number of traffic number
i.e., DIF 12 Traffic numbers = 1200, 1216, 1232, and 1248

TABLE B
VER:TSG:TSGN O'a!
a = octal value recorded in Step 2

NOTES
1. When testing
   receiver service
   circuits,
   transmitter must
   be assigned and
   active.
2. When testing
   transmitter
   service circuits,
   receiver must be
   assigned and
   active

VERIFY UNIT IS ACTIVE

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SUMMARY
Call up RC Form 801 on CRT. Using TTY, fill in blank fields
on form to identify and to change terminal unit MP and SP
data within the selected word of the DIF UT translator.
Enter message; then verify inactive translations.

```
RC:FUNC;CHG;OPT(TRANS), ---:                    TRANSID_____,
ORNU ------,
ENTRY -------, WORDNO -----,
SIZE --,  DISP --,
BINOCT -,
NEWDATA ----------------------- ,
OLDDATA ----------------------- ,
REMARKS --------------------------------------------------- !
```

FIG. 1 — Blank RC Form 801

[1] Enter
   VER:UTYPE:DIF a!
   a = DIF member number

[2] Convert first and second
    leftmost octal digits in octal
    words 56 and 57 to binary

[3] Record binary bits 23
    through 18 for later
    reference

[4] See CAUTION 1.
    Enter **OP:RCFORM 801!**

AND

[5] CRT displays
RC Form 801
per FIG. 1

Yes → Page 2

No

[6] Repeat
from Step 1

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PERFORM FUNCTIONAL WORD CHANGE OF DIU TYPE DATA

[7] Read NOTES 1 and 2.
Using TTY and CRT
display of RC Form 801,
fill in blank fields on
RC Form 801 per TABLE A
and enter message

Page 3

```
                          TABLE A
RC:FUNC;CHG;OPT(TRANS),a:          TRANSID b,

ORNU c,

ENTRY d,              WORDNO e,

SIZE f,            DISP g,

BINOCT h,

NEWDATA i,

OLDDATA j,

REMARKS_____ !
```

```
a = TST
b = UTDIF
c = RC order number
d = DIF member number
e = 46 (for DIU 32)
    47 (for DIU 33)
f = 6
g = 18
h = B
i = 000001 (for SM1B circuit pack)
    001001 (for SM9 circuit pack)
    001010 (for SM10 circuit pack)
j = Binary bits 23-18 recorded in Step 3, Page 1
```

NOTES
1. The quantity of
   binary bits to be
   entered as NEWDATA
   must be equal to
   decimal number
   entered as SIZE
2. The quantity of
   binary bits to be
   entered as OLDDATA
   must be equal to
   quantity of bits
   entered as
   NEWDATA

Revised

PERFORM FUNCTIONAL WORD CHANGE OF DIU TYPE DATA

```
┌─────────────────────────────┐
│ [8] Was recent             │                    ╭──────────────────╮
│ change SUCCESSFULLY         │  Yes               │    Page 4         │
│ TESTED and                  │ ─────────────────▶ │                  │
│ SUCCESSFULLY                │                    ╰──────────────────╯
│ BUFFERED [TABLE B]          │
└─────────────────────────────┘
              │ No
              ▼
┌─────────────────────────────┐
│ [9] Analyze output          │
│ message for error;          │
│ repeat from Step 1,         │
│ Page 1, with                │
│ corrected input             │
│ data                        │
└─────────────────────────────┘
```

TABLE B
RC ORNU a SUCCESSFULLY TESTED
RC ORNU a SUCCESSFULLY BUFFERED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTDIF, ORNU a, ENTRY b,   WORDNO c, SIZE 6,   DISP 18, BINOCT B, NEWDATA d, OLDDATA e, REMARKS _!
REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR AFTER THE MESSAGE IS ACTIVATED

```
WORD 0      _____  _____  _____  _____
            _____  _____  _____  _____
WORD 10     _____  _____  _____  _____
                              •
                              •
                              •
WORD 120    _____  _____  _____
```

a = RC order number
b = DIF member number
c = Word number entered
d = New data entered
e = Old data entered

```
┌─────────────────────────┐
│ [10] Enter              │
│ RCACT:ORNU a!           │
│ a = RC order            │
│      number             │
└─────────────────────────┘
             │
             ▼
```

```
     ┌───────────────────┐              ┌───────────────────┐
    ╱                     ╲            ╱ [13] Does output     ╲
   ╱ [11] Was recent       ╲   Yes    │ message indicate      │   Yes   ┤
  │  change ACTIVATED        ├───────→ │ changed data field(s) ├───────┤
   ╲ [TABLE C]              ╱          │ are correct for this  │
    ╲                     ╱            ╲ recent change        ╱
     └───────────────────┘              └───────────────────┘
             │ No                                │ No
             ▼                                   ▼
```

```
┌─────────────────────────┐      ┌─────────────────────────┐
│ [12] Determine          │      │ [14] If data changes    │
│ cause for reject;       │      │ require corrections:    │
│ repeat from             │      │ repeat from Step 1,     │──────┤
│ Step 10                 │      │ Page 1, using           │
│                         │      │ corrected data          │
└─────────────────────────┘      │ entries                 │
                                 └─────────────────────────┘
```

TABLE C
RC ORNU a ACTIVATED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTDIF, ORNU a,
ENTRY b,   WORDNO c,
SIZE 6,   DISP 18,
BINOCT B,
NEWDATA d,
OLDDATA e,
REMARKS_____ !
a = RC order number b = DIF member number c = Word number entered d = New data entered e = Old data entered

[1] Obtain CIN assignments of TANTOTANs
on SPC being converted

[2] At MTCE channel, enter message for
one TANTOTAN on list in Step 1
ORD:TANTOTAN;a,**CIN** b:**CIN** c!
a = **RLS** (to take down TANTOTAN) or
CONN (to connect TANTOTAN)
b = CIN of First Trunk
c = CIN of Second Trunk

AND

[3] Was
COMPLETED - SUCCESS
message received

Yes

[5] Have all
TANTOTANs assigned
to SPC being
converted been
taken down

Yes

No

No

[4] Determine
cause and
resolve; repeat
from Step 2

[6] Repeat from
Step 2 for next
TANTOTAN on list
in Step 1

TAKE DOWN OR CONNECT TANTOTAN CONNECTIONS

[1] Enter SME verify message per TABLE A for removed terminal unit

[2] Does output data [TABLE B] indicate correct number for TGR frame and removed terminal unit

Yes → Page 2

No

[3] Determine cause and resolve; repeat from Step 1

TABLE A
VER:UTYPE:TGR a,SME b!

a = Member number of TGR
b = Submember number of TGR

Terminal Unit	Index Number
0	32
1	33
2	34
3	35
4	36
5	37
6	38
7	39
8	40
9	41
10	42
11	43
12	44
13	45
14	46
15	47

TABLE B
VER:UTMN;OPT(SME),CUR: FLN a, UTYN TGR, MEMN b,   ME OPER, SUBMEM c,   SME OPER, TERM d, ADR   (WORD 0)   UTYPE DATA   (WORD 3) e TERM USE i MATE USE i   TERM NUM f TGR g SLC TRANS DATA ADR   SLC DATA h   (WORD 0)   (WORD 3)

a = Floor location number
b = Member number of TGR
c = Index number of growth terminal unit
d = Growth terminal unit number
e = Starting octal address of UTYPE DATA
f = Submember number of mate terminal unit
g = Member number of TGR containing mate
    terminal unit
h = Starting address of SLC DATA
i = DOM or INTL

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DISABLE DIRECT SIGNALING TRAFFIC CONFIGURATION

[4] Using printout and
    TABLE B, Page 1, record
    UTYPE data word 2 ───────┐

[5] Convert second and
    third leftmost octal
    digits of data word
    2 (Step 4) to binary ───► (AND) ──────► [7] Are binary   Yes ──────┤
                                               bits 17 and
                                               18 set to 00
[6] Determine if bits   │
    17 and 18 are 00   │ No
    [FIG. 1] ──────────────┘   ▼
                                               (Page 3)

entry data octal output ──►	O		Y		Y		Y		Y		Y		Y		Y	

bit position ──►

23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

binary values ──►

O	O	O	Z	W	U	U	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

| GENERIC SIGNALING TYPE | | | | | DIR. SIG. CONFIG. | | SP MEMBER NUMBER | | | | | MATRIX | | SP ROW NUMBER | | | | | | SP COLUMN NUMBER | | | |

RESERVE VOICE FREQUENCY LINK TRUNK SCANNER NUMBER

FIG. 1

DISABLE DIRECT SIGNALING TRAFFIC CONFIGURATION

[8] See CAUTION 1. Enter
OP:RCFORM 801!

CRT displays
RC Form 801
per TABLE D

[9] Determine from TABLE C, UT decimal
word corresponding to removed
terminal unit and record

AND

Page 4

[10] Using TTY and CRT display of
RC Form 801, fill in blank
fields on RC Form 801 per
TABLE D and enter message

TABLE D
RC:FUNC;CHG;OPT(TRANS),a: TRANSID b,
ORNU c,
ENTRY d,   WORDNO e,
SIZE f,   DISP g,
BINOCT h,
NEWDATA i,
OLDDATA j,
REMARKS_____ !

a = TST	f = 2
b = UTTGR	g = 17
c = RC order number	h = B
d = Member number of TGR	i = 00
containing growth	j = Old data from
terminal unit	Step 6, Page 2
e = UT decimal word number	
previously recorded	
in Step 9	

TABLE C			
GROWTH TERMINAL UNIT	UT DECIMAL WORD	GROWTH TERMINAL UNIT	UT DECIMAL WORD
0	19	8	51
1	23	9	55
2	27	10	59
3	31	11	63
4	35	12	67
5	39	13	71
6	43	14	75
7	47	15	79

DISABLE DIRECT SIGNALING TRAFFIC CONFIGURATION

```
┌─────────────────────────┐
│  [11] Was recent        │ Yes    ╭──────────╮
│  change SUCCESSFULLY     ├──────▶ │  Page 5  │
│  TESTED and             │        ╰──────────╯
│  SUCCESSFULLY            │
│  BUFFERED [TABLE E]      │
└────────────┬────────────┘
             │ No
             ▼
┌─────────────────────────┐
│ [12] Analyze output     │
│ message for error;      │
│ repeat from             │
│ Step 1, Page 1, with    │
│ corrected input data    │
└─────────────────────────┘
```

TABLE E
RC ORNU a SUCCESSFULLY TESTED
RC ORNU a SUCCESSFULLY BUFFERED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR, ORNU a,
ENTRY b,   WORDNO c,
SIZE 2,   DISP 17,
BINOCT B,
NEWDATA 00,
OLDDATA d,
REMARKS _!
REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR AFTER THE MESSAGE IS ACTIVATED
WORD 0   _____ _____ _____ _____   _____ _____ _____ _____
WORD 10   _____ _____ _____

a = RC order number
b = Member number of TGR containing growth
    terminal unit
c = UT decimal word number previously recorded in
    Step 9, Page 3
d = Old data from Step 6, Page 2

DISABLE DIRECT SIGNALING TRAFFIC CONFIGURATION

```
┌─────────────────────┐
│ [13] Enter          │
│ RCACT:ORNU a!       │
│ a = RC order        │
│       number        │
└─────────────────────┘
          │
          ▼
    ╱─────────────╲                    ╱──────────────────╲
   ╱ [14] Was recent╲    Yes          ╱ [16] Does output    ╲    Yes
  ╱  change ACTIVATED ╲──────────────▶  message indicate     ╲────────┤
  ╲  [TABLE F]        ╱               ╲  changed data field(s) ╱
   ╲                 ╱                 ╲  are correct for this ╱
    ╲───────────────╱                  ╲  recent change      ╱
          │                             ╲──────────────────╱
          │ No                                   │
          ▼                                       │ No
┌─────────────────────┐                          ▼
│ [15] Determine      │               ┌─────────────────────┐
│ cause for reject;   │               │ [17] If data changes│
│ repeat from         │               │ require corrections,│
│ Step 13             │               │ repeat from Step 1, │────┤
└─────────────────────┘               │ Page 1, using       │
                                      │ corrected           │
                                      │ data entries        │
                                      └─────────────────────┘
```

TABLE F
RC ORNU a ACTIVATED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR, ORNU a,
ENTRY b,   WORDNO c,
SIZE 2,   DISP 17,
BINOCT B,
NEWDATA 00,
OLDDATA d,
REMARKS‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗ !

a = RC order number
b = Member number of TGR containing growth
    terminal unit
c = UT decimal word number previously recorded in
    Step 9, Page 3
d = Old data from Step 6, Page 2

DISABLE DIRECT SIGNALING TRAFFIC CONFIGURATION

```
┌─────────────────────────┐
│ [1] Using TABLE A,      │
│ identify octal DIU      │          ╭──────────────╮
│ type for DIU being      │────────▶ │   Page 2     │
│ changed and record      │          ╰──────────────╯
└─────────────────────────┘
```

TABLE A			
DIU TYPE (Octal)	DIU	DIU TYPE (Octal)	DIU
01	DIU is a voice digital interface unit	34	4-State DIU (**SM10** pack)
02	MF DIU	37	64CCC DIU [Fe+B8ZS] (**SM10** pack)
03	DTMF DIU	40	DMI DIU [D4+ZCS] (**SM10** pack)
10	4-State DIU (**SM9** pack)	41	DMI DIU [Fe+B8ZS] (**SM10** pack)
13	64CCC DIU [Fe+B8ZS] (**SM9** pack)	42	SM1B Function DIU [D4+ZCS] (**SM10** pack)
14	DMI DIU [D4+ZCS] (**SM9** pack)	43	SM1B Function DIU [Fe+ZCS] (**SM10** pack)
15	DMI DIU [Fe+B8ZS] (**SM9** pack)	46	DIU [D4 only] (**SM10** pack)
16	SM1B Function DIU [D4+ZCS] (**SM9** pack)	47	DIU [D4+B8ZS] (**SM10** pack)
17	SM1B Function DIU [Fe+ZCS] (**SM9** pack)	51	DMI DIU [Fe+ZCS] (**SM10** pack)
22	DIU [D4 only] (**SM9** pack)	52	4-State DIU [D4+B8ZS] (**SM10** pack)
23	DIU [D4+B8ZS] (**SM9** pack)	53	4-State DIU [Fe+B8ZS] (**SM10** pack)
25	DMI DIU [Fe+ZCS] (**SM9** pack)	54	DIU [Fe+B8ZS] (**SM10** pack)
26	4-State DIU [D4+B8ZS] (**SM9** pack)	60	64CCC with Per Call Control [Fe+B8ZS] (**SM10** pack)
27	4-State DIU [Fe+B8ZS] (**SM9** pack)		
30	DIU [Fe+B8ZS] (**SM9** pack)		

CHANGE DIU TYPE VALUE

[2] Enter
    `VER:UTYPE:DIF a!`
    a = DIF member number

[3] Using TABLE B, identify
    octal word associated with
    growth DIU and record
    associated decimal value

AND → (Page 3)

[4] Using TTY output and FIG. 1,
    identify octal word (Step 3)
    and record first and second
    leftmost octal digits for
    later reference

entry data
octal output →

U	U	Y

bit position →

23	22	21	20	19	18	17	16

binary values →

W	W	W	W	W	W	Z	Z

DIU TYPE

Fig. 1 — Entry Words 16 Through 55 Layout

TABLE B								
GROWTH DIU	OCTAL WORD	DECIMAL WORD	GROWTH DIU	OCTAL WORD	DECIMAL WORD	GROWTH DIU	OCTAL WORD	DECIMAL WORD
0	16	14	11	31	25	22	44	36
1	17	15	12	32	26	23	45	37
2	20	16	13	33	27	24	46	38
3	21	17	14	34	28	25	47	39
4	22	18	15	35	29	26	50	40
5	23	19	16	36	30	27	51	41
6	24	20	17	37	31	28	52	42
7	25	21	18	40	32	29	53	43
8	26	22	19	41	33	30	54	44
9	27	23	20	42	34	31	55	45
10	30	24	21	43	35			

CHANGE DIU TYPE VALUE

```
┌─────────────────────┐          ╱──────────────────╲           ╭──────────────╮
│                     │         ╱                    ╲   Yes     │              │
│ [5] See CAUTION 1.  │        ╱  [6] CRT displays    ╲─────────▶│   Page 4     │
│ Enter op:rcform 801!│───────▶│  RC Form 801          │         │              │
│                     │        ╲  per FIG. 2          ╱          ╰──────────────╯
│                     │         ╲                    ╱
└─────────────────────┘          ╲────────┬─────────╱
                                          │ No
                                          ▼
                                 ┌──────────────────┐
                                 │                  │
                                 │  [7] Repeat      │
                                 │  from Step 5     │
                                 │                  │
                                 └──────────────────┘
```

```
┌───────────────────────────────────────────────────────────────────────┐
│                                                                         │
│   RC:FUNC;CHG;OPT(TRANS), ---:              TRANSID_____,             │
│   ORNU ------,                                                          │
│   ENTRY _____, WORDNO _____,                                         │
│   SIZE __,  DISP __,                                                    │
│   BINOCT _,                                                             │
│   NEWDATA ----------------------- ,                                    │
│   OLDDATA ----------------------- ,                                    │
│   REMARKS ------------------------------------------------- !          │
│                                                                         │
└───────────────────────────────────────────────────────────────────────┘
```

FIG. 2 — Blank RC Form 801

CAUTION 1
Calling up RC form will cause all CRT data to be cleared

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CHANGE DIU TYPE VALUE

```
┌─────────────────────────┐
│ [8] Read NOTE 1.        │
│ Using terminal and CRT  │
│ display of RC Form 801, │
│ fill in blank fields on │
│ RC Form 801 per TABLE C │
│ and enter message       │
└─────────────────────────┘
            │
            ▼
       ╭─────────────╮
       │   Page 5    │
       ╰─────────────╯
```

TABLE C
RC:FUNC;CHG;OPT(TRANS),a: TRANSID b,
ORNU c,
ENTRY d,   WORDNO e,
SIZE f,   DISP g,
BINOCT h,
NEWDATA i,
OLDDATA j,
REMARKS_____ !

a = TST
b = UTDIF
c = RC order number
d = DIF member number
e = decimal word recorded in Step 3, Page 2
f = 6
g = 18
h = 0
i = octal digits recorded in Step 1, Page 1
j = octal digits recorded in Step 4, Page 2

NOTE 1
The quantity of octal digits to be entered as **OLDDATA** must be equal to quantity of digits entered as **NEWDATA**

CHANGE DIU TYPE VALUE

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[9] Was recent change SUCCESSFULLY TESTED and SUCCESSFULLY BUFFERED [TABLE D]

Yes → Page 6

No ↓

[10] Analyze output message for error; repeat from Step 5, Page 3, with corrected input data

TABLE D

REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR AFTER THE MESSAGE IS ACTIVATED

WORD 0 _____ _____ _____ _____
       _____ _____ _____ _____
WORD 10 _____ _____ _____ _____
                        •
                        •
                        •
WORD 60 _____

RC ORNU a SUCCESSFULLY TESTED

RC ORNU a SUCCESSFULLY BUFFERED

RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTDIF,
ORNU a,
ENTRY b,   WORDNO c,
SIZE 6,   DISP 18,
BINOCT 0,
NEWDATA d,
OLDDATA e,
REMARKS _!

a = RC order number
b = DIF member number
c = Word number entered
d = New data entered
e = Old data entered

CHANGE DIU TYPE VALUE

```
┌─────────────────────┐                                    ┌──────────────────────────────────────────────┐
│ [11] Enter          │                                    │                  TABLE E                     │
│ RCACT:ORNU a!       │                                    ├──────────────────────────────────────────────┤
│ a = RC order        │                                    │ RC ORNU a ACTIVATED                          │
│     number          │                                    │                                              │
└─────────────────────┘                                    │ RC:FUNC;CHG;OPT(TRANS),BUF:  TRANSID UTDIF,  │
```

[11] Enter RCACT:ORNU a!
a = RC order number

[12] Was recent change **ACTIVATED** [TABLE E]

— Yes → [14] Does output message indicate changed data field(s) are correct for this recent change

— No → [13] Determine cause for reject; repeat from Step 11

[14] — Yes → (end)

[14] — No → [15] If data changes require corrections, repeat from Step 5, Page 3, using corrected data entries

[1] See NOTE 1. Determine signal link
    number to be removed from service ────────────┐

[2] Notify signal transfer point (STP)
    office that signal link will now be
    removed from service ──────────────────────▶ (AND) ──┤

[3] At TTY, enter   System responds
    RMV:SIGLK a!   RMV:SIGLK a COMPL
    (a = signal link number) ──────▶(●)─────────┘

REMOVE CCIS SIGNAL LINK FROM SERVICE

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NOTE: For power switch and fuse locations, first digit
      indicates in which bay or frame the unit is located.
      0 = Bay 0, Basic Frame
      1 = Bay 1, Basic Frame
      2 = 1st Supplementary Frame
      3 = 2nd Supplementary Frame

1. Identify power switch associated with amplifier
   and pad unit [TABLE A]

End of procedure

TABLE A	
UNIT	PWR SWITCH LOCATION
TERM 00	054-27
TERM 01	054-31
TERM 02	054-35
TERM 03	154-27
TERM 04	154-31
TERM 05	154-35
TERM 06	254-27
TERM 07	254-31
TERM 08	254-35
TERM 09	254-39
TERM 10	254-43
TERM 11	354-27
TERM 12	354-31
TERM 13	354-35
TERM 14	354-39
TERM 15	354-43

IDENTIFY POWER SWITCH LOCATION

[1] If D4 channel units are associated
    with terminal to be adjusted, ensure
    channel unit pads have been adjusted
    for 0 drop across the 4 ESS switch

[2] At TTY, enter
    VER:TRKNAME,CIN a MIS*TERM*** b:OTAN!
    a = traffic number (TFN) of terminal =
        TGR number times 16 plus terminal
        number within TGR
    b = office identity

[3] Record octal TAN (OTAN) from output
    (Step 2) for later reference

(AND) → (Page 3)

[4] At terminal associated with
    AMP/PAD to be adjusted, remove
    terminal modem interface (TMI)
    unit

[5] On facility test panel at location
    27-37, connect transmission measuring
    set (TMS) [600 ohm terminated] to
    RCV-B (a) (a = terminal to be adjusted)
    test jack [FIG. 1, Page 2, for domestic,
    FIG. 2 for international]

ADJUST AMPLIFIER AND PAD ON AMP/PAD UNIT USING RMS-D2

FIG. 1 — TMS and Loopback Connections — Domestic

TJ( ) TJ( )

XMT A( ) XMT B (a)
RCV   RCV
XMT A( ) XMT B (a)
RCV -13.0 RCV
XMT A( ) XMT B (a)
RCV   RCV

AT1 AT2 FIXED
0-1.5 0-15 8

-13.0

-20 TO +24

4 *ESS* SWITCH

VIU OR D4 WITH DT OR DIF

VIU OR D4 WITH DT OR DIF

-13.0

RMS-D2
1004 Hz
-10 dBm
3.0 dB

TOC

a = TERMINAL UNIT WITHIN FRAME

TMS

RECEIVE TEST (STEP 5)

FIG. 1 — TMS and Loopback Connections — Domestic

FIG. 2

TJ( ) TJ( )

XMT A( ) XMT B (a)
RCV   RCV
XMT A( ) XMT B (a)
RCV -11.0 RCV
XMT A( ) XMT B (a)
RCV   RCV

AT1 AT2 FIXED
0-1.5 0-15 8

-11.0

-20 TO +24

-13.0

4 *ESS* SWITCH

VIU OR D4 WITH DT OR DIF

VIU OR D4 WITH DT OR DIF

-13.0

RMS-D2
1004 Hz
-10 dBm
3.0 dB

TOC

a = TERMINAL UNIT WITHIN FRAME

TMS

RECEIVE TEST (STEP 5)

FIG. 2 — TMS and Loopback Connections — International (CCITT)

ADJUST AMPLIFIER AND PAD ON AMP/PAD UNIT USING RMS-D2

Request TOC to [using trunk
work station (TWS)]:

    [6] Enter signon command ──────────────────┐

    [7] Activate circuit via OTAN
        (enter **113/**a [a = OTAN
        recorded in Step 3, Page 1]) ──────┐

    [8] Obtain DYNAMIC TEST CONTROL
        MENU (enter **705**) ───────────→ (**AND**) ──→ (Page 4)

    [9] Select SETC (depress
        A and **PF5** keys) ──────┘

    [10] Send 1004 Hz tone at −10 dBm
        (enter **721/0/1/-10**) ──────┘

ADJUST AMPLIFIER AND PAD ON AMP/PAD UNIT USING RMS-D2

[11] At terminal power switch, depress **ON** pushbutton

PWR OFF
lamp off

[12] Read TMS meter

AND

[13] See FIG. 3. At AMP/PAD unit, adjust amplifier to read:
—13 dBm for domestic [FIG. 1, Page 2]
—11 dBm for international [FIG. 2, Page 2]

[14] Did amplifier adjust to proper reading

Yes → Page 5

No

[15] Determine cause and resolve; repeat from Step 12

AT1

0.1   0.2   0.4   0.8

AT2

1.0   2.0   4.0   8.0

GN

GN
ADJ

0
DB

-13
DB

GN
-2 -1 +1

309A

FIG. 3 — CCIS Amplifier and Pad Unit

ADJUST AMPLIFIER AND PAD ON AMP/PAD UNIT USING RMS-D2

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At facility test panel:
    [16] Remove TMS ─────────────────┐

    [17] Patch **RCV-B** (a) (a = terminal
         to be adjusted) test jack to
         XMT-B (a) test jack [FIG. 4,
         Page 6 or FIG. 5] ─────┐

    [18] See FIG. 3, Page 4. At AMP/PAD
         unit, pre-set **AT1** and **AT2**
         to 7.9 ──────────────►(AND)──────►(Page 7)

Request TOC to (using TWS):
    [19] Release tone (depress
         E and **PF1** keys) ─────┘

    [20] Send 1004 Hz tone at 0 dBm
         (enter **721/0/1/0**) ───────┘

ADJUST AMPLIFIER AND PAD ON AMP/PAD UNIT USING RMS-D2

FIG. 4 — Loopback Connections — Domestic

FIG. 5 — Loopback Connections — International (CCITT)

ADJUST AMPLIFIER AND PAD ON AMP/PAD UNIT USING RMS-D2

[21] Read NOTE 1

[22] Request TOC to set up
terminal to measure
(depress **B** and **PF4** keys)

[23] Request TOC to read terminal
and direct adjustment of PAD
attenuators to:
−22 dBm for domestic [FIG. 4, Page 6]
−20 dBm for international [FIG. 5,
Page 6]

AND

[24] Does
terminal read
proper value

Yes → Page 8

No

[25] Have PAD
attenuators been
adjusted over
entire range

Yes → [27] Determine
cause and
resolve; repeat
from Step 22

No

[26] See FIG. 3, Page 4.
At AMP/PAD unit, adjust
AT2 and **AT1** for proper
reading on terminal;
repeat from Step 22

NOTE 1
Steps 22 and 23 must
be performed for
each PAD attenuator
adjustment. TWS
terminal will not
continuously sample
level readings

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ADJUST AMPLIFIER AND PAD ON AMP/PAD UNIT USING RMS−D2

[28] Request TOC to (using TWS),
     release TAT 0 (depress
     A and **PF6** keys) ─────────────────────┐

[29] At facility test panel,
     disconnect loop patch ──────────────────┐

[30] At terminal power switch,
     depress **ROS/OFF** switch ───→( )─── **PWR OFF**
                                           lamp lights ──→(AND)──┤

[31] Install terminal modem
     interface unit ────────────────────────┘

[32] At terminal power switch,
     depress **ON** pushbutton ───→( )─── **PWR OFF**
                                           lamp off ──────┘

TABLE A

OP:SLKSTAT;SLK ab!

a = Member number of TGR containing converted terminal

b = Submember number of converted terminal

---

[1] Enter input message per TABLE A

[2] Does output message indicate VFL is SELF LOOPED per TABLE B — Yes

No

[3] Determine cause and resolve; repeat from Step 1

FIRST TERMINAL UNIT

MATE TERMINAL UNIT

TABLE B

REPT:SLKSTAT;SLK a;b

SLK	STAT	LS	SLC	TGR	TER	STAT	DSM	DSS	VFL	STAT
a	INS	d	e	f	h	INS	j	k	SELF LOOPED	ACT/STBY
										ACT/STBY
c	INS	d	e	g	i	INS	j	l	SELF LOOPED	ACT/STBY
										ACT/STBY

a = Signaling link associated with converted terminal unit
b = Reason for status change
c = Signaling link associated with mate terminal
d = Link state
e = Signaling link complement number
f = TGR frame member number containing converted terminal unit
g = TGR containing mate terminal
h = First terminal unit number
i = Mate terminal unit number
j = Associated data set frame member number
k = Data set associated with converted terminal unit ⎫ if enhanced
l = Data set associated with mate terminal ⎭ terminal units

VERIFY SELF LOOPED STATUS OF SLK

[1] Enter SME verify message per TABLE A for terminal unit to be converted

→

[2] Does output data [TABLE B] indicate correct number for TGR frame and growth terminal unit

No →

[3] Determine cause and resolve; repeat from Step 1

Yes ↓

(Page 2)

TABLE A

VER:UTYPE:TGR a,SME b!

a = Member number of TGR
b = Submember index number

Terminal Unit	Index Number
0	32
1	33
2	34
3	35
4	36
5	37
6	38
7	39
8	40
9	41
10	42
11	43
12	44
13	45
14	46
15	47

TABLE B

VER:UTMN;OPT(SME),CUR: FLN a,   UTYN TGR,

MEMN b,   ME OPER,
SUBMEM c,   SME OPER,
TERM d,
ADR   UTYPE DATA
e   (WORD 0) _____ _____ (WORD 3)

TERM USE i
MATE USE i   TERM NUM f   TGR g

SLC TRANS DATA

ADR   SLC DATA
h   (WORD 0) _____ _____ (WORD 3)

---

a = Floor location number
b = Member number of TGR
c = Index number of growth terminal unit
d = Growth terminal unit number
e = Starting octal address of UTYPE DATA
f = Submember number of mate terminal unit
g = Member number of TGR containing mate terminal unit
h = Starting address of SLC DATA
i = DOM or INTL

VERIFY TERMINAL UNIT DATA OF TGR UT TRANSLATOR

```
┌──────────────────┐                              ┌──────────────────┐     ┌──────────────────┐
│[4] Using output  │        ╱[5] Is OPERATIONAL╲  │[6] Record binary │     │[7] Using RC      │
│data,             │       ╱                    ╲ │value in bit      │     │Form 801, change  │
│verify OPERATIONAL├──────▶  TYPE data correct   ──No──▶│positions 20 │────▶│OPERATIONAL TYPE  │
│TYPE data is set  │       ╲                    ╱ │through 17 for use│     │[DLP-627]. Record │
│to correct value  │        ╲                  ╱  │as OLDDATA        │     │ORNU for later use│
│per word 0 in     │          ╲──────────────╱    └──────────────────┘     └──────────────────┘
│TABLE C, Page 5   │               │
└──────────────────┘              Yes
                                   │
                                   ▼
                        ┌──────────────────┐
                        │[8] Using output  │        ╱[9] Is SYNCPOL ╲     Yes
                        │data,             │       ╱                 ╲
                        │verify SYNCPOL    ├──────▶   data correct    ──────┐
                        │data is set to 0  │       ╲                 ╱      │
                        │per word 1 in     │        ╲               ╱       │
                        │TABLE C, Page 5   │          ╲───────────╱         │
                        └──────────────────┘               │               │
                                                          No               │
                                                           ▼               │
                                              ┌──────────────────┐         │
                                              │[10] Using RC     │         ▼
                                              │Form 801, change  │    ╭──────────╮
                                              │SYNCPOL [DLP-628].├───▶│  Page 3  │
                                              │Record ORNU for   │    ╰──────────╯
                                              │later use         │
                                              └──────────────────┘
```

```
┌─────────────────────┐                      ┌─────────────────────┐      ┌─────────────────────┐
│ [11] Using output   │                      │ [13] Record binary  │      │ [14] Using RC       │
│ data,               │      ╱[12] Is STYPE╲  │ value in bit        │      │ Form 801, change    │
│ verify STYPE is set │─────▶│  data correct │ │ positions 20        │─────▶│ STYPE [DLP-629].    │
│ to correct value per│  ╲            ╱  No   │ through 17 for use  │      │ Record ORNU for     │
│ word 1 in TABLE C,  │      ╲       ╱         │ as OLDDATA          │      │ later use           │
│ Page 5              │        │                └─────────────────────┘      └─────────────────────┘
└─────────────────────┘      Yes
```

[11] Using output data, verify STYPE is set to correct value per word 1 in TABLE C, Page 5

[12] Is STYPE data correct — No → [13] Record binary value in bit positions 20 through 17 for use as OLDDATA → [14] Using RC Form 801, change STYPE [DLP-629]. Record ORNU for later use

Yes ↓

[15] Using output data, verify DIRECT SIGNALING CONFIGURATION is set to 00 per word 2 in TABLE C, Page 6

[16] Is DIRECT SIGNALING CONFIGURATION data correct — Yes → Page 4

No ↓

[17] Record binary value in bit positions 18 and 17 for use as OLDDATA → [18] Using RC Form 801, change DIRECT SIGNALING CONFIGURATION [DLP-630]. Record ORNU for later use → Page 4

VERIFY TERMINAL UNIT DATA OF TGR UT TRANSLATOR

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```
┌─────────────────────┐
│ [19] Using output data,          ⬡ [20] Are CCDSM          Yes
│ verify CCDSM and CCDSS   ──────▶   and CCDSS values    ──────── |
│ are set to correct               correct
│ values per word 3 in
│ TABLE C, Page 6
└─────────────────────┘                    │ No
                                           ▼
                              ┌─────────────────────┐
                              │ [21] Record binary
                              │ values in bit positions
                              │ 23 through 16 for use
                              │ as OLDDATA
                              └─────────────────────┘
                                           │
                                           ▼
                              ┌─────────────────────┐
                              │ [22] Using RC Form 801,
                              │ change CCDSM and CCDSS   ──────── |
                              │ [DLP-631]. Record ORNU
                              │ for later use
                              └─────────────────────┘
```

TABLE C

UT DATA AND WORD CONFIGURATION

| ENTRY WORD (OCTAL) | | | | | | | | | |

Entry word 0

entry data octal output	0	2	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	0	0	0	0	1	0	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Fields:
- TERMINAL UNIT VERSION NUMBER (bits 23–21)
- OPERATIONAL TYPE (bits 20–17)
- SP MEMBER NUMBER (bits 16–12)
- MATRIX (bits 11–10)
- SP ROW NUMBER (bits 9–4)
- SP COLUMN NUMBER (bits 3–0)
- TERMINAL UNIT TRUNK SCANNER NUMBER (bits 16–0)

Y = Variable octal numbers

Entry word 1

entry data octal output	4	Y	Y	Y	Y	Y	Y	Y

bit position	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
binary values	1	0	0	Z	Z	Z	Z	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Fields:
- LOOP (bit 23)
- SYNCPOL (bit 21)
- STYPE (bits 20–17)
- SP MEMBER NUMBER (bits 16–12)
- MATRIX (bits 11–10)
- SP ROW NUMBER (bits 9–4)
- SP COLUMN NUMBER (bits 3–0)
- PRIMARY VOICE FREQUENCY LINK TRUNK SCANNER NUMBER (bits 16–0)

Y = Variable octal numbers

Z...Z = Converts to STYPE data as reflected in equipment list for CCIS frame
- = 0 for Domestic Terminal Unit (IGFET Memory) (J99360A-1, List 1)
- 1 for Cost Reduced Terminal Bipolar Memory
- 4 for Domestic Terminal Unit (Bipolar Memory) (J99360C-1, List 1 and 4)

TABLE C (Contd)

ENTRY WORD (OCTAL)	UT DATA AND WORD CONFIGURATION
2	entry data octal output → `0` `Y` `Y` `Y` `Y` `Y` `Y` `Y` bit position → 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 binary values → 0 0 0 Z W 0 0 X X X X X X X X X X X X X X X X X GENERIC SIGNALING TYPE · DIR. SIG. CONFIG. · SP MEMBER NUMBER · MATRIX · SP ROW NUMBER · SP COLUMN NUMBER RESERVE VOICE FREQUENCY LINK TRUNK SCANNER NUMBER Y = Variable octal numbers
3	entry data octal output → `0` `0` `Y` `Y` `Y` `Y` `Y` `Y` bit position → 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 binary values → 0 0 0 0 0 0 0 0 V V V V V V V V V V V V V V V V CCDSM · CCDSS · SIGNALING LINK COMPLEMENT INDEX · TGR NO. · TERMINAL NO. BACKUP TERMINAL Y = Variable octal numbers

SUMMARY
Call up RC Form 801 on CRT. Using terminal, fill in blank
fields on form to identify and to change terminal unit
OPERATIONAL TYPE data within the selected word of the TGR
UT translator. Enter message, then verify inactive
translations.

TABLE A			
TERMINAL UNIT	UT DECIMAL WORD	TERMINAL UNIT	UT DECIMAL WORD
0	17	8	49
1	21	9	53
2	25	10	57
3	29	11	61
4	33	12	65
5	37	13	69
6	41	14	73
7	45	15	77

[1] See CAUTION 1. Enter
    OP:RCFORM 801!

CRT displays
RC Form 801
per FIG. 1

AND → Page 2

[2] Determine from TABLE A UT
    decimal word corresponding
    to terminal unit being
    converted and record

```
RC:FUNC;CHG;OPT(TRANS), ---:          TRANSID_____,
ORNU ------,
ENTRY _____, WORDNO _____,
SIZE --,  DISP --,
BINOCT -,
NEWDATA ---------------------- ,
OLDDATA ---------------------- ,
REMARKS ------------------------------------------------ !
```

FIG. 1 — Blank RC Form 801

CAUTION 1
*Calling up
RC form will
cause all CRT
data to be
cleared*

**PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL
UNIT OPERATIONAL TYPE DATA**

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[3] Read NOTES 1 and 2.
Using terminal and CRT
display of RC Form 801,
fill in blank fields on
RC Form 801 per TABLE B
and enter message

↓

Page 3

TABLE B

RC:FUNC;CHG;OPT(TRANS),a: TRANSID b,

ORNU c,

ENTRY d,   WORDNO e,

SIZE f, DISP g,

BINOCT h,

NEWDATA i,

OLDDATA j,

REMARKS_____ !

---

a = TST
b = UTTGR
c = RC order number
d = Member number of TGR containing
    terminal unit being converted
e = UT decimal word determined in Step 2, Page 1
f = 4
g = 17
h = B
i = 0101
j = Old data recorded in verify

NOTES
1. The quantity of
   binary bits to be
   entered as NEWDATA
   must be equal to
   decimal number
   entered as SIZE.
2. The quantity of
   binary bits to be
   entered as OLDDATA
   must be equal to
   quantity of bits
   entered as NEWDATA

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT OPERATIONAL TYPE DATA

```
┌─────────────────────────┐          ┌──────────────┐       │
│ [4] Was recent          │   Yes    │ [6] Record   │       │
│ change SUCCESSFULLY      │ ──────►  │ ORNU for     │ ──────┤
│ TESTED and              │          │ later use    │       │
│ SUCCESSFULLY            │          └──────────────┘       │
│ BUFFERED [TABLE C]      │
└─────────────────────────┘
            │ No
            ▼
┌─────────────────────────┐
│ [5] Analyze output      │
│ message for error       │
│ and repeat from         │
│ Step 1, Page 1, with    │
│ corrected input data    │
└─────────────────────────┘
```

TABLE C
RC ORNU a SUCCESSFULLY TESTED
RC ORNU a SUCCESSFULLY BUFFERED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR, ORNU a, ENTRY b,   WORDNO c, SIZE 4,   DISP 17, BINOCT B, NEWDATA 0101, OLDDATA d, REMARKS _!
REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR AFTER THE MESSAGE IS ACTIVATED
WORD 0   _____ _____ _____ _____   _____ _____ _____ _____ WORD 10   _____ _____ _____
a = RC order number b = Member number of TGR containing terminal unit   being converted c = UT decimal word determined in Step 2, Page 1 d = Old data recorded in verify

**PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL
UNIT OPERATIONAL TYPE DATA**

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SUMMARY
Call up RC Form 801 on CRT. Using terminal, fill in blank
fields on form to identify and to change terminal unit
SYNCPOL data within the selected word of the TGR UT
translator. Enter message, then verify inactive
translations.

```
RC:FUNC;CHG;OPT(TRANS), ---:                TRANSID_____,
ORNU ------,
ENTRY _____, WORDNO _____,
SIZE __,  DISP __,
BINOCT _,
NEWDATA ----------------------- ,
OLDDATA ----------------------- ,
REMARKS -------------------------------------------------- !
```

FIG. 1 — Blank RC Form 801

[1] See CAUTION 1. Enter
    OP:RCFORM 801!

CRT displays
RC Form 801
per FIG. 1

AND → Page 2

[2] Determine from TABLE A UT
    decimal word corresponding
    to terminal unit being
    converted and record

TABLE A			
TERMINAL UNIT	UT DECIMAL WORD	TERMINAL UNIT	UT DECIMAL WORD
0	18	8	50
1	22	9	54
2	26	10	58
3	30	11	62
4	34	12	66
5	38	13	70
6	42	14	74
7	46	15	78

CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared

**PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL
UNIT SYNCPOL DATA**

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[3] Read NOTES 1 and 2.
Using terminal and CRT
display of RC Form 801,
fill in blank fields on
RC Form 801 per TABLE B
and enter message

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TABLE B
RC:FUNC;CHG;OPT(TRANS),a: TRANSID b, ORNU c, ENTRY d,   WORDNO e, SIZE f, DISP g, BINOCT h, NEWDATA i, OLDDATA j, REMARKS_____ !
a = TST b = UTTGR c = RC order number d = Member number of TGR containing   terminal unit being converted e = UT decimal word determined in Step 2, Page 1 f = 1 g = 21 h = B i = 0 j = 1

NOTES
1. The quantity of
   binary bits to be
   entered as NEWDATA
   must be equal to
   decimal number
   entered as SIZE.
2. The quantity of
   binary bits to be
   entered as OLDDATA
   must be equal to
   quantity of bits
   entered as NEWDATA

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL
UNIT SYNCPOL DATA

```
                           ┌──────────────────┐
  ╱────────────────────╲   │ [6] Record       │
 ╱ [4] Was recent       ╲  │ ORNU for         │───────┤
│  change SUCCESSFULLY    │ │ later use        │
│  TESTED and            │  └──────────────────┘
│  SUCCESSFULLY       Yes│─────►
 ╲ BUFFERED [TABLE C]   ╱
  ╲────────────────────╱
           │ No
           ▼
  ┌──────────────────┐
  │ [5] Analyze output│
  │ message for error │
  │ and repeat from   │
  │ Step 1, Page 1, with│
  │ corrected input data│
  └──────────────────┘
```

TABLE C
RC ORNU a SUCCESSFULLY TESTED
RC ORNU a SUCCESSFULLY BUFFERED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR, ORNU a,   ENTRY b,   WORDNO c,   SIZE 1,   DISP 21,   BINOCT B,   NEWDATA 0,   OLDDATA 1,   REMARKS _!
REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR AFTER THE MESSAGE IS ACTIVATED
WORD 0   _____ _____ _____ _____   _____ _____ _____ _____   WORD 10   _____ _____ _____
a = RC order number   b = Member number of TGR containing terminal unit   being converted   c = UT decimal word determined in Step 2, Page 1

SUMMARY
Call up RC Form 801 on CRT. Using terminal, fill in blank
fields on form to identify and to change terminal unit
STYPE data within the selected word of the TGR UT
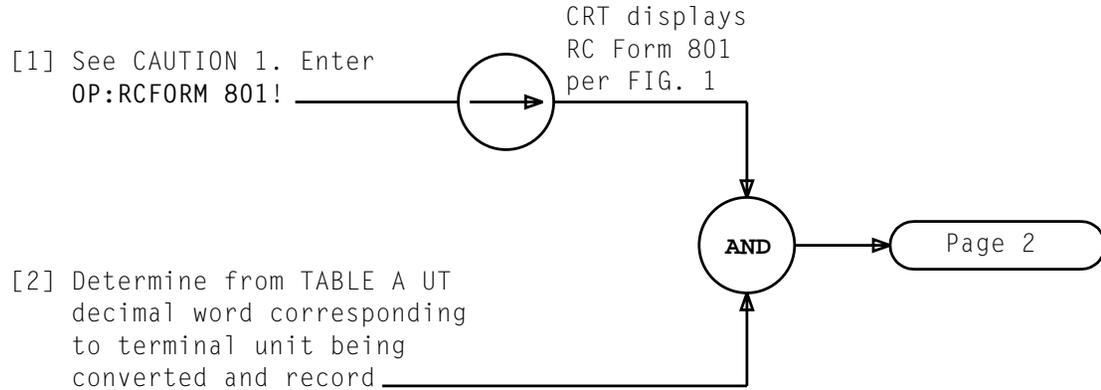translator. Enter message, then verify inactive
translations.

```
RC:FUNC;CHG;OPT(TRANS), ---:            TRANSID_____,
ORNU ------,
ENTRY _____, WORDNO _____,
SIZE __,  DISP __,
BINOCT _,
NEWDATA _____ ,
OLDDATA _____ ,
REMARKS ---------------------------------------------- !
```

FIG. 1 — Blank RC Form 801

[1] See CAUTION 1. Enter
    OP:RCFORM 801!

CRT displays
RC Form 801
per FIG. 1

AND → Page 2

[2] Determine from TABLE A UT
    decimal word corresponding
    to terminal unit being
    converted and record

[3] Determine from TABLE B
    new data corresponding to
    terminal unit type to be
    converted

TABLE A			
TERMINAL UNIT	UT DECIMAL WORD	TERMINAL UNIT	UT DECIMAL WORD
0	18	8	50
1	22	9	54
2	26	10	58
3	30	11	62
4	34	12	66
5	38	13	70
6	42	14	74
7	46	15	78

TABLE B	
TERMINAL UNIT TYPE	NEW DATA
Domestic Terminal Unit (IGFET Memory) (J99360A-1, List 1)	0000
Domestic Terminal Unit (Bipolar Memory) (J99360C-1, List 1)	0001
Domestic Terminal Unit (Bipolar Memory) (J99360C-1, List 1 and 4)	0100

CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT STYPE DATA

Revised

[4] Read NOTES 1 and 2. Using terminal and CRT display of RC Form 801, fill in blank fields on RC Form 801 per TABLE C and enter message

Page 3

```
                              TABLE C

RC:FUNC;CHG;OPT(TRANS),a:          TRANSID b,

ORNU c,

ENTRY d,        WORDNO e,

SIZE f,  DISP g,

BINOCT h,

NEWDATA i,

OLDDATA j,

REMARKS_____ !
```

```
a = TST
b = UTTGR
c = RC order number
d = Member number of TGR containing
    terminal unit being converted
e = UT decimal word determined in Step 2, Page 1
f = 4
g = 17
h = B
i = New data determined in Step 3, Page 1
j = Old data recorded in verify
```

NOTES
1. The quantity of binary bits to be entered as NEWDATA must be equal to decimal number entered as SIZE.
2. The quantity of binary bits to be entered as OLDDATA must be equal to quantity of bits entered as NEWDATA

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT STYPE DATA

```
┌─────────────────────────┐
│        [5] Was recent   │          ┌──────────────┐
│       change SUCCESSFULLY│   Yes    │ [7] Record   │        ┃
│        TESTED and        ├─────────▶│ ORNU for     ├────────┃
│        SUCCESSFULLY      │          │ later use    │        ┃
│        BUFFERED [TABLE D]│          └──────────────┘
└────────────┬────────────┘
          No │
             ▼
┌─────────────────────────┐
│  [6] Analyze output     │
│  message for error      │
│  and repeat from        │
│  Step 1, Page 1, with   │
│  corrected input data   │
└─────────────────────────┘
```
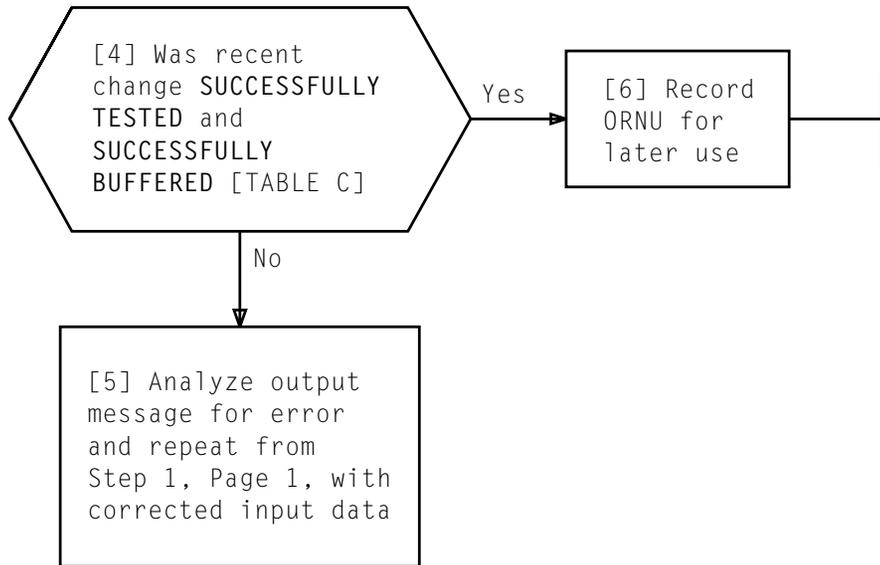
TABLE D
RC ORNU a SUCCESSFULLY TESTED
RC ORNU a SUCCESSFULLY BUFFERED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR, ORNU a, ENTRY b,   WORDNO c, SIZE 4,   DISP 17, BINOCT B, NEWDATA d, OLDDATA e, REMARKS _!
REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR AFTER THE MESSAGE IS ACTIVATED
WORD 0   _____ _____ _____ _____   _____ _____ _____ _____ WORD 10   _____ _____ _____
a = RC order number b = Member number of TGR containing terminal unit   being converted c = UT decimal word determined in Step 2, Page 1 d = New data determined in Step 3, Page 1 e = Old data recorded in verify

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL

UNIT STYPE DATA

SUMMARY

Call up RC Form 801 on CRT. Using terminal fill in blank fields on form to identify and to change terminal unit DIRECT SIGNALING CONFIGURATION data within the selected word of the TGR UT translator. Enter message, then verify inactive translations.

```
RC:FUNC;CHG;OPT(TRANS), ---:                    TRANSID_____,
ORNU _____,
ENTRY _____, WORDNO _____,
SIZE __,  DISP __,
BINOCT _,
NEWDATA ----------------------- ,
OLDDATA ----------------------- ,
REMARKS --------------------------------------------- !
```

FIG. 1 — Blank RC Form 801

[1] See CAUTION 1. Enter
    OP:RCFORM 801!

CRT displays
RC Form 801
per FIG. 1

AND → Page 2

[2] Determine from TABLE A UT
    decimal word corresponding
    to terminal unit being
    converted and record

TABLE A			
TERMINAL UNIT	UT DECIMAL WORD	TERMINAL UNIT	UT DECIMAL WORD
0	19	8	51
1	23	9	55
2	27	10	59
3	31	11	63
4	35	12	67
5	39	13	71
6	43	14	75
7	47	15	79

CAUTION 1
Calling up RC form will cause all CRT data to be cleared

Revised

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PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT DIRECT SIGNALING CONFIGURATION DATA

[3] Read NOTES 1 and 2.
Using terminal and CRT
display of RC Form 801,
fill in blank fields on
RC Form 801 per TABLE B
and enter message

Page 3

TABLE B
RC:FUNC;CHG;OPT(TRANS),a:　　　　　TRANSID b,
ORNU c
ENTRY d,　　　WORDNO e,
SIZE f, DISP g,
BINOCT h,
NEWDATA i,
OLDDATA j,
REMARKS _!

a = TST
b = UTTGR
c = RC order number
d = Member number of TGR containing
　　terminal unit being converted
e = UT decimal word determined in Step 2, Page 1
f = 2
g = 17
h = B
i = 00
j = Old data recorded in verify

NOTES
1. The quantity of
   binary bits to be
   entered as
   NEWDATA must be
   equal to decimal
   number entered as
   SIZE.
2. The quantity of
   binary bits to be
   entered as
   OLDDATA must be
   equal to quantity
   of bits entered
   as NEWDATA

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**PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL
UNIT DIRECT SIGNALING CONFIGURATION DATA**

```
┌─────────────────────────┐            ┌──────────────┐       ┃
│  [4] Was recent         │            │ [6] Record   │       ┃
│  change SUCCESSFULLY     │    Yes     │ ORNU for     │───────┃
│  TESTED and             │─────────▶ │ later use    │       ┃
│  SUCCESSFULLY           │            │              │       ┃
│  BUFFERED [TABLE C]     │            └──────────────┘
└─────────────────────────┘
              │ No
              ▼
┌─────────────────────────┐
│ [5] Analyze output      │
│ message for error       │
│ and repeat from         │
│ Step 1, Page 1, with    │
│ corrected input data    │
└─────────────────────────┘
```
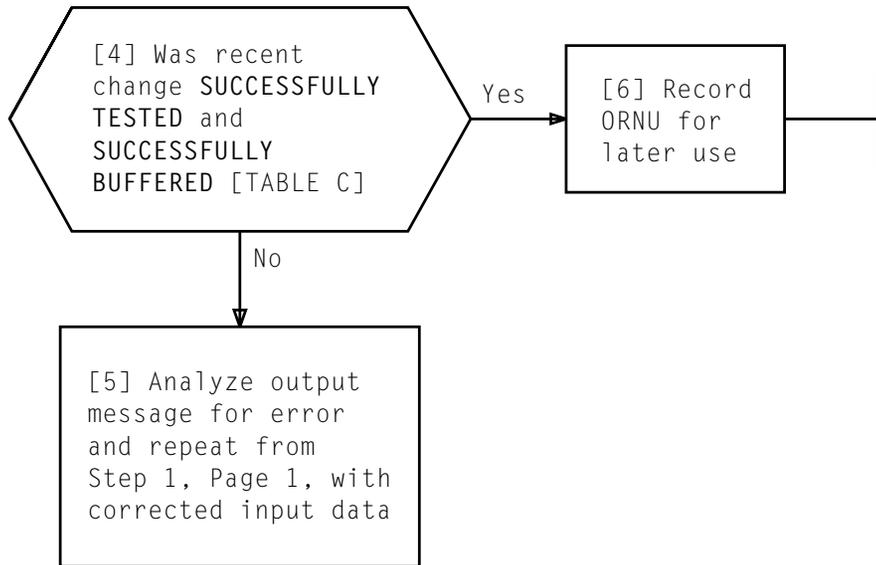
TABLE C

RC ORNU a SUCCESSFULLY TESTED

RC ORNU a SUCCESSFULLY BUFFERED

RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR,
ORNU a,
ENTRY b,   WORDNO c,
SIZE 2,   DISP 17,
BINOCT B,
NEWDATA 00,
OLDDATA d,
REMARKS _!

REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR
AFTER THE MESSAGE IS ACTIVATED

WORD 0   _____ _____ _____ _____
            _____ _____ _____ _____
WORD 10   _____ _____ _____

---

a = RC order number
b = Member number of TGR containing terminal unit
    being converted
c = UT decimal word determined in Step 2, Page 1
d = Old data recorded in verify

SUMMARY
Call up RC Form 801 on CRT. Using terminal fill in blank
fields on form to identify and to change terminal unit CCDSM
and CCDSS data within the selected word of the TGR UT
translator. Enter message, then verify inactive translations.

```
RC:FUNC;CHG;OPT(TRANS), ---:              TRANSID_____,
ORNU _____,
ENTRY _____, WORDNO _____,
SIZE __,  DISP __,
BINOCT _,
NEWDATA _____ ,
OLDDATA _____ ,
REMARKS _____ !
```

FIG. 1 — Blank RC Form 801

[1] See CAUTION 1. Enter
    OP:RCFORM 801!

CRT displays
RC Form 801
per FIG. 1

AND → Page 2

[2] Determine from TABLE A UT
    decimal word corresponding
    to terminal unit being
    converted and record

TABLE A			
TERMINAL UNIT	UT DECIMAL WORD	TERMINAL UNIT	UT DECIMAL WORD
0	20	8	52
1	24	9	56
2	28	10	60
3	32	11	64
4	36	12	68
5	40	13	72
6	44	14	76
7	48	15	80

CAUTION 1
Calling up
RC form will
cause all CRT
data to be
cleared

**PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL
UNIT CCDSM AND CCDSS DATA**

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[3] Read NOTES 1 and 2. Using terminal and CRT display of RC Form 801, fill in blank fields on RC Form 801 per TABLE B and enter message

Page 3

TABLE B
RC:FUNC;CHG;OPT(TRANS),a: TRANSID b,
ORNU c,
ENTRY d,   WORDNO e,
SIZE f, DISP g,
BINOCT h,
NEWDATA i,
OLDDATA j,
REMARKS_____ !

a = TST
b = UTTGR
c = RC order number
d = Member number of TGR containing
    terminal unit being converted
e = UT decimal word determined in Step 2, Page 1
f = 8
g = 16
h = B
i = 00000000
j = Old data recorded in verify

NOTES
1. The quantity of binary bits to be entered as NEWDATA must be equal to decimal number entered as SIZE.
2. The quantity of binary bits to be entered as OLDDATA must be equal to quantity of bits entered as NEWDATA

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PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT CCDSM AND CCDSS DATA

```
┌─────────────────────────────┐          ┌──────────────┐
│  [4] Was recent             │   Yes    │ [6] Record   │
│  change SUCCESSFULLY        │─────────▶│ ORNU for     │────┤
│  TESTED and                 │          │ later use    │
│  SUCCESSFULLY               │          └──────────────┘
│  BUFFERED [TABLE C]         │
└─────────────────────────────┘
              │ No
              ▼
┌─────────────────────────────┐
│ [5] Analyze output          │
│ message for error           │
│ and repeat from             │
│ Step 1, Page 1, with        │
│ corrected input data        │
└─────────────────────────────┘
```
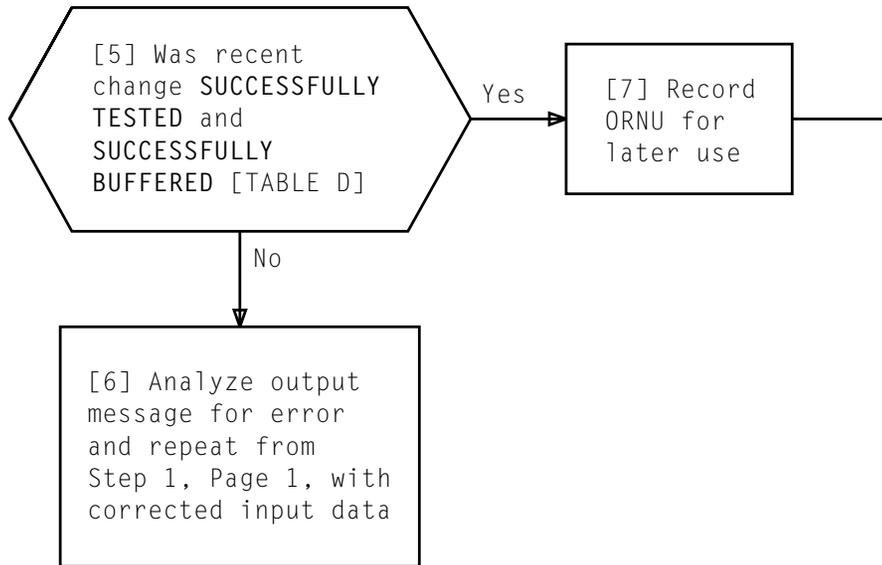
TABLE C
RC ORNU a SUCCESSFULLY TESTED
RC ORNU a SUCCESSFULLY BUFFERED
RC:FUNC;CHG;OPT(TRANS),BUF: TRANSID UTTGR, ORNU a,

```
ENTRY b,              WORDNO  c,
SIZE 8,               DISP 16,
BINOCT B,
NEWDATA 00000000,
OLDDATA d,
REMARKS _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _!
```

REPT:RC DUMP OF UNIT TYPE ENTRY AS IT WILL APPEAR AFTER THE MESSAGE IS ACTIVATED

```
WORD 0      _____  _____  _____  _____
            _____  _____  _____  _____
WORD 10     _____  _____  _____
```

```
a = RC order number
b = Member number of TGR containing terminal unit
      being converted
c = UT decimal word determined in Step 2, Page 1
d = Old data recorded in verify
```

PERFORM FUNCTIONAL WORD CHANGE OF TGR TERMINAL UNIT CCDSM AND CCDSS DATA

1. Place **TEST/CMD** switch in **CMD**.

   Response: Alphanumeric display indicates **MDCK** or **DSAB**.

2. Operate and hold **BWD/FWD** switch in **FWD** until
   alphanumeric display indicates **MTCE**.

   Response: Alphanumeric display indicates **MTCE**.

3. Depress **EXEC**.

   Response: Alphanumeric display indicates **MC/O**.

4. Depress **EXEC**.

   Response: Alphanumeric display indicates **MC/I**.

5. Place **TEST/CMD** switch in normal position.

   Response: Alphanumeric display flashes **MTCE**.

6. Place **TEST/CMD** switch in **TEST**.

   Response: Alphanumeric display indicates **PORT**,
           AUTO, or **MT**.

7. Operate and hold **BWD/FWD** switch in **FWD** until
   alphanumeric display indicates **C-MT**.

   Response: Alphanumeric display indicates **C-MT**.

8. Depress **EXEC**.

   Response: Alphanumeric display flashes **C-MT**.

At TGR terminal unit to be converted:
    [1] Loosen four mounting screws
        on terminal modem interface unit

    [2] Remove terminal modem
        interface unit

    [3] Carefully insert replacement
        201D modem

    [4] Tighten four mounting screws

AND

REPLACE TMI WITH 201D MODEM

```
┌─────────────────────┐                                      ┌──────────────────┐
│ [1] Enter           │          ╱‾‾‾‾‾‾‾‾‾‾‾‾‾‾╲             │ [4] Enter        │
│ RCACT:ORNU a!       │        ╱   [2] Was ACCEPTED ╲   Yes   │ verify           │
│ a = one RC order    │───────▶│  message received   │──────▶│ message per      │
│     number assigned │        ╲   per TABLE A      ╱         │ TABLE B          │
│     to change of    │          ╲_____╱            └──────────────────┘
│     terminal unit   │                  │
│     data recorded   │                  │ No
│     earlier         │                  ▼
└─────────────────────┘        ┌──────────────────────┐          ╭──────────────╮
                               │ [3] Analyze          │          │   Page 2     │
                               │ reject message;      │          ╰──────────────╯
                               │ repeat from Step 1   │
                               │ using correct        │
                               │ message format.      │
                               │ See NOTE 1           │
                               └──────────────────────┘
```

TABLE A
RC ORNU a ACCEPTED FOR ACT STATE
a = RC order number

TABLE B
VER:UTYPE:TGR a,SME b!
a = Member number of TGR containing converted terminal
b = Submember index number

Terminal Unit	Index No.
0	32
1	33
2	34
3	35
4	36
5	37
6	38
7	39
8	40
9	41
10	42
11	43
12	44
13	45
14	46
15	47

NOTE 1
Reject could result from other than message format error

ACTIVATE TGR TERMINAL UNIT DATA CHANGE(S)

[5] Are UTYN, MEMN, and SUBMEM correct on printout for terminal being converted

No → [6] Determine cause and resolve; repeat from Step 4, Page 1

Yes

TABLE C		
TERMINAL UNIT CHANGE DATA	WORD NUMBER	BIT POSITION(S)
OPERATIONAL TYPE	0	20 through 17
SYNCPOL	1	21
STYPE	1	20 through 17
DIRECT SIGNALING CONFIGURATION	2	18 and 17
CCDSM and CCDSS	3	23 through 16

[7] Using TABLE C, determine word number and bit position(s) for change just activated

AND

[9] Was data changed correctly

No → [10] Determine cause and resolve; repeat from Step 1, Page 1

Yes

[8] Using output data and information in Step 7, determine if terminal unit data was changed correctly

[11] Are more ORNUs to be activated

No →

Yes

[12] Repeat from Step 1, Page 1 for next ORNU

ACTIVATE TGR TERMINAL UNIT DATA CHANGE(S)

```
[1] Enter message
DGN;DIF a,CONTR 0:PH(14,17)!
a = DIF member number
```

[2] Was message accepted, controller 0 removed, and did diagnostic run

Yes →

[4] Does ouput message indicate ATP on phases run

Yes →

No ↓

No ↓

```
[3] Analyze
output message;
repeat from
Step 1 with
corrected data
```

```
[5] Clear DIF
diagnostic
failure; ATP
required
 [TOP 234-151-055]
```

DIAGNOSE DIF CONTROLLER 0

```
┌─────────────────────┐                          Yes
│ [1] Read NOTE 1.    │        ⬡⬡⬡⬡⬡⬡⬡⬡⬡
│ Enter message       │      ⬡ [2] Does output  ⬡
│ RST:DIF a,CONTR 1!  │─────▷⬡ message indicate ⬡──────┐
│ a = DIF member      │      ⬡ ATP and RESTORE  ⬡       │
│     number          │      ⬡ COMPLETED        ⬡       │
└─────────────────────┘        ⬡⬡⬡⬡⬡⬡⬡⬡⬡       │
                                    │ No                 │
                                    ▼                    │
                          ┌─────────────────────┐        │
                          │ [3] Clear DIF       │        │
                          │ diagnostic          │        │
                          │ failure; ATP        │        ▼
                          │ required            │────────┤
                          │ [TOP 234-151-055]   │        │
                          └─────────────────────┘        ▐
```

RESTORE DIF CONTROLLER 1

[1] Using Company Order, TABLE A, and TABLE B, Page 2 determine new Functional Assignment for one digroup being changed and record for later use

[2] Is Functional Assignment for more digroups on this DIU being changed

No

Yes

[3] Repeat from Step 1 for next digroup

TABLE A	
FUNCTIONAL ASSIGNMENT	TYPE OF DIGROUP
0	No Assignment
1	SF ZCS (RB or 64R)
2	SF B8ZS (RB or 64C)
3	SF ZCS (CCITT5 4-STATE ONLY)
4	ESF B8ZS (CCITT5 4-STATE ONLY)
5	ESF ZCS (RB or 64R)
6	ESF B8ZS (RB or 64C)
7	ESF B8ZS (64C ONLY)
8	ESF B8ZS (64C WITH PCC)

B8ZS - Binary with 8 Zero Substitution
ESF - Extended Super Framing
PCC - Per-Call Control
RB   - Robbed Bit
SF   - Super Framing
ZCS - Zero Code Suppression
64C - 64Kb Clear
64R - 64Kb Restricted

DETERMINE FUNCTIONAL ASSIGNMENT FOR DIGROUP CHANGE

TABLE B					
THW	THW5	TDG (TYPE OF DIGROUP)				
		DIGROUP 1	DIGROUP 2	DIGROUP 3	DIGROUP 4	DIGROUP 5
0	0	0	0	0	0	0
1	0	1	1	1	1	1
6	1	0	0	0	0	1
6	9	0	0	0	0	1,2,5,6,7
6	10	0	0	0	0	1,2,5,6,7,8
7	1	0	0	0	0	1
7	9	0	0	0	0	1,2,5,6,7
7	10	0	0	0	0	1,2,5,6,7,8
9	0	1,2,5,6,7 3,4	1,2,5,6,7 3,4	1,2,5,6,7 3,4	1,2,5,6,7 3,4	1,2,5,6,7 3,4
10	0	1,2,5,6,7,8 3,4	1,2,5,6,7,8 3,4	1,2,5,6,7,8 3,4	1,2,5,6,7,8 3,4	1,2,5,6,7,8 3,4

```
THW  = Circuit pack code for digroup 1 through digroup 4 (and digroup 5 if THW5 is 0)
THW5 = Circuit pack code for digroup 5 (used when office equipped with digital
       interface service circuit units
THW and THW5 =
 0 = no assignment        7 = SM7
 1 = SM1B                 9 = SM9
 6 = SM6                 10 = SM10
```

DETERMINE FUNCTIONAL ASSIGNMENT FOR DIGROUP CHANGE

[1] Using company order and TABLE A, Page 2,
    determine circuit pack associated
    with Functional Assignment for one
    digroup

[2] Using FIG. 1, Page 2, determine location
    of DIU that contains digroup(s)
    being changed

[3] Using FIG. 2, Page 3,
    determine location of digroup
    being changed

[4] At locations determined in
    Steps 2 and 3, determine if
    proper circuit pack is equipped

AND

[5] Is
proper circuit
pack installed

No

[6] Record that
proper circuit
pack is not
installed

Yes

[7] Have all
circuit packs for
digroup(s) being
changed been
verified

Yes

No

[8] Repeat
from Step 1
for next
digroup

Added

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**DETERMINE IF PROPER CIRCUIT PACK IS INSTALLED FOR DIGROUP
BEING CHANGED**

TABLE A	
FUNCTIONAL ASSIGNMENT	CIRCUIT PACK
0	None
1	SM1B, SM9 or SM10
2	SM9 or SM10
3	SM9 or SM10
4	SM9 or SM10
5	SM9 or SM10
6	SM9 or SM10
7	SM9 or SM10
8	SM10

```
                          DIF BAY 0/2

EQPT.                                                        EQPT.
LOC.                                                         LOC.
70       POWER    DIU      SPARE                             70
         UNITS   15/31     DIU        POWER
                           32/33      UNITS

62       POWER    DIU       DIU       POWER                  62
         UNITS   13/29     14/30      UNITS

52       POWER    DIU       DIU                              52
         UNITS   11/27     12/28      POWER
                                      UNITS

44       POWER    DIU       DIU                              44
         UNITS    9/25     10/26      POWER
                                      UNITS

36       POWER    DIU       DIU                              36
         UNITS    7/23      8/24      POWER
                                      UNITS

26       POWER    DIU       DIU                              26
         UNITS    5/21      6/22      POWER
                                      UNITS

18       POWER    DIU       DIU                              18
         UNITS    3/19      4/20      POWER
                                      UNITS

10       POWER    DIU       DIU                              10
         UNITS    1/17      2/18      POWER
                                      UNITS
```

FIG. 1 — DIF BAY 0 or 2 — Front View

Added

DETERMINE IF PROPER CIRCUIT PACK IS INSTALLED FOR DIGROUP BEING CHANGED

FIG. 2 — DIU Circuit Pack Arrangement

The diagram shows the DIU circuit pack arrangement with two sections.

Arrangement for Odd Numbered DIUs (left):

141C1/141L1 POWER UNIT | 140E PWR UNIT

Circuit packs:
- 061 SM 1B9, OR 10
- 067 SM 1B9, OR 10
- 073 SM 1B9, OR 10
- 079 SM 1B9, OR 10
- 085 SM 1B9, OR 10
- 097 SM2
- 103 SM3
- 109 SM4
- 115 SM5

DIGROUPS: 1 2 3 4 5

Arrangement for Even Numbered DIUs (right):

Circuit packs:
- 171 SM5
- 177 SM4
- 183 SM3
- 189 SM2
- 201 SM 1B9, OR 10
- 207 SM 1B9, OR 10
- 213 SM 1B9, OR 10
- 219 SM 1B9, OR 10
- 225 SM 1B9, OR 10

DIGROUPS: 5 4 3 2 1

140E PWR UNIT | 141C1/141L1 POWER UNIT

Added

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[1] Using FIG. 1, Page 2 for guidelines and office printouts, determine if office meets stable condition [NOTE 1]

[2] Does office meet stable condition

Yes

No

[3] Contact next higher technical support group for resolution. After resolving, procedure may continue

NOTE 1
FIG. 1 is based on 7-day rolling average for all per-day measures; all other measures are as indicated. All resolved troubles are discounted from measures

Added

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DETERMINE IF OFFICE IS STABLE

- INTERRUPTS

  1B PROCESSOR $\leq$ 1 PER MEMBER NUMBER PER DAY
  $\leq$ 3 PER DAY TOTAL

  TMS, NC, PUB, IO, CCIS $\leq$ 2 PER MEMBER NUMBER PER DAY
  $\leq$ 4 PER DAY TOTAL

  PERIPHERY, PER OPERATIONAL SP CORE (SP, DT, TSI) OR DIF (DIF, $\leq$ 3 PER DAY
  TSI COMPLEX) (THE ALLOWABLE DAILY INTERRUPT COUNT SHALL NOT
  EXCEED 25, REGARDLESS OF OFFICE SIZE)

  PBFRs $\leq$ 1 PER DAY

- INTERJECTS $\leq$ 2 PER MEMBER NUMBER PER DAY
  $\leq$ 5 PER DAY TOTAL

- BASE LEVEL

  ANALYZED, CORRECTED AND/OR UNDERSTOOD

- PHASES/DUPLEX FAILURES

  DIRECTED PHASE 1 $\leq$ 1 IN 2 WEEKS

  SYSTEM PHASE 1 $\leq$ 1 IN 1 WEEK

  PHASE 2 OR 3 $\leq$ 1 IN 4 WEEKS

  DT, VIF, OR EST $\leq$ 1 IN 4 WEEKS

  TGR/TER LINK PAIR $\leq$ 1 IN 2 WEEKS

- OUT-OF-SERVICE UNITS

  NUMBER OUT-OF-SERVICE $\leq$ 5 AT ANYTIME

  CRITICAL UNITS:
  CC   DIF   PS   TMSP
  CS   LN   PUB   TSI
  CU   NCLK   SP

- 3B COMPUTER

  INTERRUPTS $\leq$ 3 PER DAY

  PHASE 1 $\leq$ 1 IN 4 WEEKS

  PHASE 2 OR 3 $\leq$ 1 IN 4 WEEKS

  CNI RING INIT $\leq$ 1 IN 2 WEEKS

  CNI RING TRANSPORT ERRORS $\leq$ 2 PER DAY

  DLNE ERRORS $\leq$ 1 PER DAY

FIG. 1 - Office Stability Guidelines

```
┌─────────────────┐        ╱───────────╲                          │
│ [1] At MTC      │       ╱  [2] Does    ╲          No             │
│ terminal, enter │──────▶   printout list ──────────────────────┤
│ message         │       ╲  any units    ╱                        │
│ OP:OOSUNITS!    │        ╲───────────╱                           │
└─────────────────┘             │
                              Yes
                                │
                                ▼
        ┌──────────────────────────┐     ╱──────────╲                    │
        │ [3] Contact next higher  │    ╱ [4] Do any  ╲      No           │
        │ technical support group  │    │ units need to ──────────────────┤
        │ to determine if any units│───▶│ be restored   ╱                  │
        │ in printout must be      │    ╲──────────╱
        │ restored before continuing│         │
        │ with procedure           │        Yes
        └──────────────────────────┘         │
                                             ▼
                                        ╭──────────╮
                                        │  Page 2  │
                                        ╰──────────╯
```

ENSURE ALL UNITS ARE IN-SERVICE

[5] See NOTE 1. At MTC
terminal, enter message
for one listed unit
RST:a b[,c d]!
a = Listed unit type
b = Listed member number
c = Submember type
    (if listed)
d = Submember number
    (if listed)

[6] Was
RST a b [c d] COMPLETED
message received

No

[7] Clear failure,
ATP required
[TABLE A, Page 3]

Yes

[8] Are more
units listed
(Step 4, Page 1)

No

[10] Repeat
from Step 1

Yes

[9] Repeat
Step 5 for
next listed
unit

ENSURE ALL UNITS ARE IN-SERVICE

TABLE A			
UNIT TYPE	TROUBLE-CLEARING VOLUME	UNIT TYPE	TROUBLE-CLEARING VOLUME
3B Computer Model 1	254-301-812 254-301-813	MFS	234-151-041
		MISC A, B, C	234-151-043
3B Computer Model 2/3	254-302-812	NCLK	234-151-013
ADS (TUC and DUS)	234-351-010	PCDF J5A007B	234-351-025
API	234-351-016	PCDF J5A007C	234-351-026
AUB	234-351-010	PUBB	234-151-015
CNI	234-151-120	SCS	234-151-077
DIF	234-151-055	SP1	234-151-031
DT	234-151-045	SP2	234-151-032
EST	234-151-050	TGR	234-151-033
IO J5A006A	234-351-020	TMS	234-151-011
IO J5A006C	234-351-021	TSI	234-151-012
IO J5A006D	234-351-022	VIF	234-151-025

ENSURE ALL UNITS ARE IN-SERVICE

[1] At MTC terminal, enter message per TABLE A for DIU associated with digroup(s) being changed

[2] Was printout received per TABLE C, PAGE 2

Yes

[4] Save printout for later use

No

[3] Determine cause and resolve; repeat from Step 1

TABLE A	
MESSAGE NUMBER	INPUT MESSAGE
1	VER:UTYPE:DIF a,SME b!

a = DIF member number
b = SME index number per
   TABLE B

TABLE B			
DIU	SME INDEX	DIU	SME INDEX
0	143	17	160
1	144	18	161
2	145	19	162
3	146	20	163
4	147	21	164
5	148	22	165
6	149	23	166
7	150	24	167
8	151	25	168
9	152	26	169
10	153	27	170
11	154	28	171
12	155	29	172
13	156	30	173
14	157	31	174
15	158	32	175
16	159	33	176

TABLE B	
MESSAGE NUMBER	OUTPUT MESSAGE
1	VER:UTMN;OPT(SME),CUR: FLN a UTYN DIF, MEMN b, ME OPR, SUBMEM c, SME OPR, SMTYPE , DIGROUP1 DIGROUP2 DIGROUP3 DIGROUP4 DIGROUP5 THW d, THW5 e, TDG f, g, h, i, j,

a = Floor number
b = DIF member number
c = DIU index number
d = Type of hardware - 0 or 1 (SM1B), 6 (SM6), 7 (SM7), 8 (SM8), 9 (SM9) or 10 (SM10)
e = Type of hardware for digroup 5 - 0 or 1 (SM1B), 9 (SM9), or 10 (SM10)
f - j = Type of digroup -
    blank for No assignment
    1 for SF ZCS (RB or 64R)
    2 for SF B8ZS (RB or 64C)
    3 for SF ZCS (CCITT5 4-STATE ONLY)
    4 for ESF B8ZS (CCITT5 4-STATE ONLY)
    5 for ESF ZCS (RB or 64R)
    6 for ESF B8ZS (RB or 64C)
    7 for ESF B8ZS (64C ONLY)
    8 for ESF B8ZS (64C WITH PCC)

[1] Using new functional
    assignment(s) for one
    digroup, recorded earlier
    and TABLE A, Page 2,
    determine THW value

[2] Using new functional
    assignment(s) for one
    digroup, recorded earlier
    and TABLE A, Page 2,
    determine THW5 value

[3] Using VER:UTYPE printout,
    previously saved, determine
    if THW is set to value
    determined in Step 1

[4] Using VER:UTYPE printout,
    previously saved, determine
    if THW5 is set to value
    determined in Step 2

AND

[5] Are THW
and THW5 fields
set properly

Yes

No

[6] Record
that field(s)
was not set to
proper value

[7] Are more
digroups to be
changed

No

Yes

[8] Repeat
from Step 1
for next
digroup

DETERMINE IF THW AND THW5 FIELDS ARE SET PROPERLY

		TDG (TYPE OF DIGROUP)				
THW	**THW5**	**DIGROUP 1**	**DIGROUP 2**	**DIGROUP 3**	**DIGROUP 4**	**DIGROUP 5**
blank	blank	blank	blank	blank	blank	blank
1	blank	1	1	1	1	1
6	1	blank	blank	blank	blank	1
6	9	blank	blank	blank	blank	1,2,5,6,7
6	10	blank	blank	blank	blank	1,2,5,6,7,8
7	1	blank	blank	blank	blank	1
7	9	blank	blank	blank	blank	1,2,5,6,7
7	10	blank	blank	blank	blank	1,2,5,6,7,8
9	blank	1,2,5,6,7 3,4	1,2,5,6,7 3,4	1,2,5,6,7 3,4	1,2,5,6,7 3,4	1,2,5,6,7 3,4
10	blank	1,2,5,6,7,8 3,4	1,2,5,6,7,8 3,4	1,2,5,6,7,8 3,4	1,2,5,6,7,8 3,4	1,2,5,6,7,8 3,4

TABLE A

```
THW  = Circuit pack code for digroup 1 through digroup 4 (and digroup 5 if THW5 is 0)
THW5 = Circuit pack code for digroup 5 (used when DIU equipped with digital
       interface service circuit units)
THW and THW5 =
 blank = no assignment     7 = SM7
 1 = SM1B                  9 = SM9
 6 = SM6                  10 = SM10
```

DETERMINE IF THW AND THW5 FIELDS ARE SET PROPERLY

```
[1] At MTC terminal,
enter message per
TABLE A for one          [2] Printout         FIG. 1    [4] Record
digroup being            received was  ─────────────►   that trunks   ────►   ( Page 2 )
changed                                                 are assigned

                              │ FIG. 2
                              ▼

                         [3] Record that
                         trunks are not  ────►  ( Page 2 )
                         assigned
```

TABLE A	
MESSAGE NUMBER	**INPUT MESSAGE**
1	VER:TRKNAME,DIF a,DIU b,DG c;DETL!
a = DIF member number b = DIU number c = Digroup number	

```
                    VER:TRKNAME,DIF a,DIU b,DG c:ISC xxxx OSC xxxx

Record this        ┌─────────────────────────┐
data               │ OTAN d                  │  - TAN xx x x xxx
         ─────────── CIN eee eeee ee ee eee eee │- BTFN xxx
                   └─────────────────────────┘

                    TSN xxxxxxx  -  TSN O'xxxxxx
                    DIF a,DIU b,DG c

                    TSGN   O'x  ( D'  f )        FENBEA xxxxxxxx

                                        .
                                        .
Record this                             .
data
```

VER:TRKNAME,DIF a,DIU b,DG c: UNA

FIG. 2 - VER TRKNAME Printout
(Trunks Not Assigned)

FIG. 1 - VER:TRKNAME Printout (Trunks Assigned)

```
     ┌─────────────────┐
    ╱ [5] Have trunks   ╲
   ╱  for all digroups   ╲        Yes
  │   being changed       │───────────┤
   ╲  been verified      ╱
    ╲                   ╱
     └────────┬────────┘
              │ No
              │
              ▼
     ┌─────────────────┐
     │ [6] Repeat       │
     │ from Step 1,     │
     │ Page 1  for      │
     │ next digroup     │
     │ being changed    │
     └─────────────────┘
```

DETERMINE IF TRUNKS ARE ASSIGNED

```
┌─────────────────┐        ╱──────────────╲              ┌──────────────┐       ╱──────────────╲
│ [1] At MTC      │       ╱ [2] Was        ╲      Yes    │ [4] Save     │      ╱ [5] Have       ╲      Yes
│ terminal,       │──────▶│ printout received│─────────▶ │ printout for │────▶│ printouts for all│──────▶│
│ enter message per│      ╲ per FIG. 1      ╱             │ later use    │      ╲ recorded OTANs  ╱
│ TABLE A for one │       ╲                ╱              └──────────────┘      ╲ been received   ╱
│ OTAN            │        ╲──────┬───────╱                                      ╲───────┬───────╱
└─────────────────┘               │ No                                                  │ No
                                  ▼                                                     ▼
                          ┌───────────────┐                                     ┌──────────────┐
                          │ [3] Determine │                                     │ [6] Repeat   │
                          │ cause and     │                                     │ from Step 1 for│
                          │ resolve; repeat│                                    │ next recorded │
                          │ from Step 1   │                                     │ OTAN         │
                          └───────────────┘                                     └──────────────┘
```

TABLE A	
MESSAGE NUMBER	**INPUT MESSAGE**
1	OP:TRKSTAT,OTAN a:NUM 24!
a = OTAN associated with digroup being changed that was recorded earlier	

OP:TRKSTAT ACT TRAF<xxx yyy>   ,OTAN a [NOTE 1]

OP:TRKSTAT ACT   ,OTAN a NUM, COMPLETED
  TRK COUNT 24

a = OTAN of trunk

NOTE 1: For each trunk assigned to digroup being
        changed, a 1-line printout will be
        received

FIG. 1 - OP:TRKSTAT Printout

```
┌─────────────────────┐         ╱╲                    ┌──────────────────┐          ╱╲                     ┃
│ [1] At MTC terminal,│        ╱  ╲                   │ [4] Record all   │         ╱  ╲                    ┃
│ enter message per   │───────▶ [2] Was    ───Yes───▶│ trunks set to    │───────▶ [5] Have all ───Yes───┃
│ TABLE A for one     │       ╲ printout received╱    │ CAD.DSA state    │        ╲ trunks in digroup(s)╱
│ OTAN                │        ╲ per FIG. 1   ╱        └──────────────────┘         ╲ being changed been╱
└─────────────────────┘         ╲    │    ╱                                          ╲ set to CAD.DSA ╱
                                  │  No                                                │   No
                                  ▼                                                    ▼
                        ┌──────────────────┐                                ┌──────────────────┐
                        │ [3] Determine    │                                │ [6] Repeat       │
                        │ cause and        │                                │ from Step 1 for  │
                        │ resolve; repeat  │                                │ next digroup     │
                        │ from Step 1      │                                └──────────────────┘
                        └──────────────────┘
```

TABLE A	
MESSAGE NUMBER	**INPUT MESSAGE**
1	SET:TRKSTAT CAD.DSA,OTAN a:NUM 24!
a = OTAN associated with digroup being changed that was recorded earlier	

SET:TRKSTAT CAD.DSA<MAN> TRAF<xxx yyy>   ,OTAN a [NOTE 1]

SET:TRKSTAT CAD.DSA   ,OTAN a NUM,STAT ACT   COMPLETED
  TRK COUNT b

a = OTAN of trunk set to CAD.DSA
b = Number of trunks for a given digroup
    set to CAD.DSA
NOTE 1: For each trunk assigned to digroup
        being changed, a 1-line printout will be
        received

FIG. 1 - SET:TRKSTAT Printout

SET TRUNKS TO CAD.DSA FOR DIGROUP(S) BEING CHANGED

[1] See CAUTION 1.
Enter message
OP:RCFORM 702!

[2] Was
RC Form 702
received
[TABLE A, Page 2]

No

[3] Determine
cause and
resolve; repeat
from Step 1

Yes

[4] Fill in ORNU field

[5] Fill in DIF MEMN field

[6] Fill in DIU MEMN field

AND

Page 3

Added

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RECENT CHANGE DIGROUP(S) TO NEW FUNCTIONAL ASSIGNMENT

TABLE A	
MESSAGE NUMBER	**OUTPUT MESSAGE**
1	RC:UTYPE;CHG;OPT(DIU),TST: ORNU a, DIF MEMN b, DIU MEMN c, DIGROUP1 DIGROUP2 DIGROUP3 DIGROUP4 DIGROUP5 THW d, THW5 e, TDG f, g, h, i, j, REMARKS _____!

a = Order number
b = DIF member number
c = DIU member number
d = Type of hardware - 0 or 1 (SM1B), 6 (SM6), 7 (SM7), 8 (SM8), 9 (SM9) or 10 (SM10)
e = Type of hardware for digroup 5*† - 0 or 1 (SM1B), 9 (SM9), or 10 (SM10)
f - j = Type of digroup*† -
       blank for No assignment†
       1 for SF ZCS (RM or 64R)
       2 for SF B8ZS (RB or 64C)
       3 for SF ZCS (CCITT5 4-STATE ONLY)
       4 for ESF B8ZS (CCITT5 4-STATE ONLY)
       5 for ESF ZCS (RB or 64R)
       6 for ESF B8ZS (RB or 64C)
       7 for ESF B8ZS (64C ONLY)
       8 for ESF B8ZS (64C WITH PCC)

* THW and THW5 cannot be changed to blank when equipage is in a state other than UNEQ.
  Next higher technical support group must be contacted
† This information can be obtained from the TEO or Switch Engineer

[7] Does **THW** field need to be changed

Yes → [8] At 1B terminal, enter message per TABLE B

No → Page 5

[8] → [9] In printout, is **SME** set to **GROW**

No → [10] Degrow submember equipage for associated DIU to GROW [DLP-527]

Yes → [11] Fill in **THW** field

[10] → [11] Fill in **THW** field

[11] → Page 4

TABLE B	
MESSAGE NUMBER	**INPUT MESSAGE**
1	VER:UTYPE:DIF a,SME b!

a = Member number of growth associated DIF
b = SME index number for growth DIU =

DIU	INDEX NO.	DIU	INDEX NO.	DIU	INDEX NO.
0	143	12	155	23	166
1	144	13	156	24	167
2	145	14	157	25	168
3	146	15	158	26	169
4	147	16	159	27	170
5	148	17	160	28	171
6	149	18	161	29	172
7	150	19	162	30	173
8	151	20	163	31	174
9	152	21	164	32	175
10	153	22	165	33	176
11	154				

RECENT CHANGE DIGROUP(S) TO NEW FUNCTIONAL ASSIGNMENT

[12] Does **THW5** field need to be changed [NOTE 1]

Yes

[13] Fill in **THW5** field

No

[14] Was DIU degrown in Step 10, Page 3

No → Page 7

Yes

[15] Recent change and verify DIU submember equipage from GROW to SGRO [DLP-501]

[16] Was DIU equipage set to **OPER** in Step 9, Page 3

No → Page 7

Yes

[17] Recent change and verify DIU submember equipage from SGRO to OPER [DLP-501]

NOTE 1
THW5 field only needs to be changed if THW is set to 6 or 7

Added

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RECENT CHANGE DIGROUP(S) TO NEW FUNCTIONAL ASSIGNMENT

```
                                                                          [21] Degrow
  [18] Does THW5          [19] At 1B                 [20] In         No   submember
  field need to     Yes   terminal, enter            printout,            equipage for
  be changed              message per                is SME set           associated DIU to
                          TABLE C                    to GROW              GROW [DLP-527]

         │ No                                             │ Yes
         ▼                                                │                        │
  ┌─────────────┐                                         │                        ▼
  │   Page 7    │                                         └──────────────────┐ ┌─────────────┐
  └─────────────┘                                                            │ │ [22] Fill   │
                                                                             │ │ in THW5     │
                                                                             └▶│ field       │
                                                                               └─────────────┘
```

TABLE C	
MESSAGE NUMBER	**INPUT MESSAGE**
1	VER:UTYPE:DIF a,SME b!

a = Member number of growth
    associated DIF
b = SME index number for
    growth DIU =

DIU	INDEX NO.	DIU	INDEX NO.	DIU	INDEX NO.
0	143	12	155	23	166
1	144	13	156	24	167
2	145	14	157	25	168
3	146	15	158	26	169
4	147	16	159	27	170
5	148	17	160	28	171
6	149	18	161	29	172
7	150	19	162	30	173
8	151	20	163	31	174
9	152	21	164	32	175
10	153	22	165	33	176
11	154				

```
                                                              ┌─────────────┐
                                                              │   Page 6    │
                                                              └─────────────┘
```

RECENT CHANGE DIGROUP(S) TO NEW FUNCTIONAL ASSIGNMENT

[23] Does **THW5** field need to be changed [NOTE 2]

Yes →

[24] Fill in **THW5** field

No

[25] Was DIU degrown in Step 20, Page 5

No → Page 7

Yes

[26] Recent change and verify DIU submember equipage from GROW to SGRO [DLP-501]

[27] Was DIU equipage set to **OPER** in Step 20, Page 5

No → Page 7

Yes

[28] Recent change and verify DIU submember equipage from SGRO to OPER [DLP-501]

NOTE 2
THW5 field only needs to be changed if THW is set to 6 or 7

Added

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RECENT CHANGE DIGROUP(S) TO NEW FUNCTIONAL ASSIGNMENT

```
┌─────────────────────┐        ┌─────────────────┐                ╱────────────────────────╲
│ [29] Fill in each   │        │ [30] Enter      │               ╱  [31] Was recent change  ╲  Yes     ╭──────────────╮
│ TDG DIGROUP         │───────▶│ RC Form         │──────────────▶  SUCCESSFULLY TESTED      ──────────▶│   Page 8     │
│ field being         │        │ 702             │               ╲  and SUCCESSFULLY        ╱          ╰──────────────╯
│ changed             │        │                 │               ╲  BUFFERED [TABLE D]     ╱
└─────────────────────┘        └─────────────────┘                ╲────────────────────────╱
                                                                            │
                                                                            │ No
                                                                            ▼
                                                                  ┌──────────────────────┐
                                                                  │ [32] Analyze output  │
                                                                  │ message for error;   │
                                                                  │ repeat from Step 1   │
                                                                  │ with corrected       │
                                                                  │ input data           │
                                                                  └──────────────────────┘
```

TABLE D	
MESSAGE NUMBER	**OUTPUT MESSAGE**
1	RC ORNU a, SUCCESSFULLY TESTED RC ORNU a, SUCCESSFULLY BUFFERED RC:UTYPE;CHG;OPT(DIU),TST: ORNU a, DIF MEMN b, DIU MEMN c, DIGROUP1 DIGROUP2 DIGROUP3 DIGROUP4 DIGROUP5 THW d, THW5 e, TDG f, g, h, i, j, REMARKS _____!

```
┌─────────────────┐      ╱─────────────────╲
│ [33] Enter      │     ╱  [34] Was recent  ╲      Yes    ╭──────────────╮
│ RCACT:ORNU a!   │────▶  change ACTIVATED   ─────────────▶   Page 9     │
│ a = RC order    │     ╲  [TABLE E]         ╱             ╰──────────────╯
│    number       │      ╲─────────────────╱
└─────────────────┘              │
                                 │ No
                                 │
                                 ▼
                      ┌─────────────────────┐
                      │ [35] Determine      │
                      │ cause for reject;   │
                      │ repeat from         │
                      │ Step 33 with        │
                      │ correct input       │
                      │ data                │
                      └─────────────────────┘
```

TABLE E	
MESSAGE NUMBER	**OUTPUT MESSAGE**
1	RC ORNU a, ACTIVATED RC:UTYPE;CHG;OPT(DIU),TST: ORNU a, DIF MEMN b,　　DIU MEMN c, 　　　　　　　　　　　　　DIGROUP1 DIGROUP2 DIGROUP3 DIGROUP4 DIGROUP5 THW d, THW5 e, TDG　　　　f,　　　g,　　　h,　　　i,　　　j, REMARKS _____!

RECENT CHANGE DIGROUP(S) TO NEW FUNCTIONAL ASSIGNMENT

```
┌─────────────────────────┐
│ [36] Does output        │
│ message indicate all    │
│ input entries are       │── Yes ──┤
│ correct for this        │
│ recent change           │
└─────────────────────────┘
            │
            No
            │
            ▼
┌─────────────────────────┐
│ [37] If input entries   │
│ are in error and        │
│ require corrections,    │────────┤
│ repeat from Step 1,     │
│ Page 1 using            │
│ corrected data          │
└─────────────────────────┘
```

RECENT CHANGE DIGROUP(S) TO NEW FUNCTIONAL ASSIGNMENT

```
[1] Using OP:TRKSTAT
and SET:TRKSTAT
printouts saved
earlier, determine
trunks that were set
to ACT for one
digroup
```

```
[2] Was
TRK COUNT
at 24
```

Yes → (Page 2)

No ↓

(Page 3)

```
  ┌──────────────────┐          ╱──────────────╲                      ╱──────────────╲
  │ [3] At MTC       │         ╱  [4] Was        ╲      Yes          ╱  [6] Have all   ╲     Yes
  │ terminal,        │───────▶│   printout received │─────────────▶│  trunks in changed │───────▶ ┤
  │ enter message per│         ╲  per FIG. 1       ╱                ╲  digroup(s) been  ╱
  │ TABLE A for one  │          ╲──────────────╱                     ╲  set to ACT    ╱
  │ digroup          │                 │                                    │
  └──────────────────┘                 │ No                                 │ No
                                        ▼                                    ▼
                             ┌──────────────────┐                ┌──────────────────┐
                             │ [5] Determine    │                │ [7] Repeat       │
                             │ cause and        │                │ from Step 1,     │
                             │ resolve; repeat  │                │ Page 1 for       │
                             │ from Step 1,     │                │ next digroup     │
                             │ Page 1           │                └──────────────────┘
                             └──────────────────┘
```

TABLE A	
MESSAGE NUMBER	**INPUT MESSAGE**
1	SET:TRKSTAT ACT,OTAN a:NUM 24!
a = OTAN associated with digroup being changed that was recorded earlier	

SET:TRKSTAT ACT TRAF< IDLE 1>   ,OTAN a [NOTE 1]

SET:TRKSTAT ACT   ,OTAN a NUM COMPLETED
  TRK COUNT 24

a = OTAN number of trunk set to ACT

NOTE 1: For each trunk set to ACT, a 1-line
        printout will be received

FIG. 1 - SET:TRKSTAT Printout

SET TRUNKS BACK TO ACT FOR CHANGED DIGROUP(S)

```
┌─────────────────┐         ╱─────────────────╲              ╱─────────────────╲
│ [8] See NOTE 1. │        ╱  [9] Was          ╲     Yes    ╱  [11] Have all    ╲    Yes   ╭───────────╮
│ At MTC terminal,│───────▶│   printout received├──────────▶│   trunks in one   ├─────────▶│  Page 4   │
│ enter message per│       ╲   per FIG. 2       ╱           ╲   digroup been set╱          ╰───────────╯
│ TABLE B for one │         ╲─────────────────╱              ╲   back to ACT    ╱
│ digroup         │               │                          ╲─────────────────╱
└─────────────────┘               │ No                              │ No
                                  ▼                                 ▼
                         ┌─────────────────┐              ┌─────────────────┐
                         │ [10] Determine  │              │ [12] Repeat     │
                         │ cause and       │              │ from Step 8 for │
                         │ resolve; repeat │              │ next OTAN       │
                         │ from Step 1,    │              │                 │
                         │ Page 1          │              └─────────────────┘
                         └─────────────────┘
```

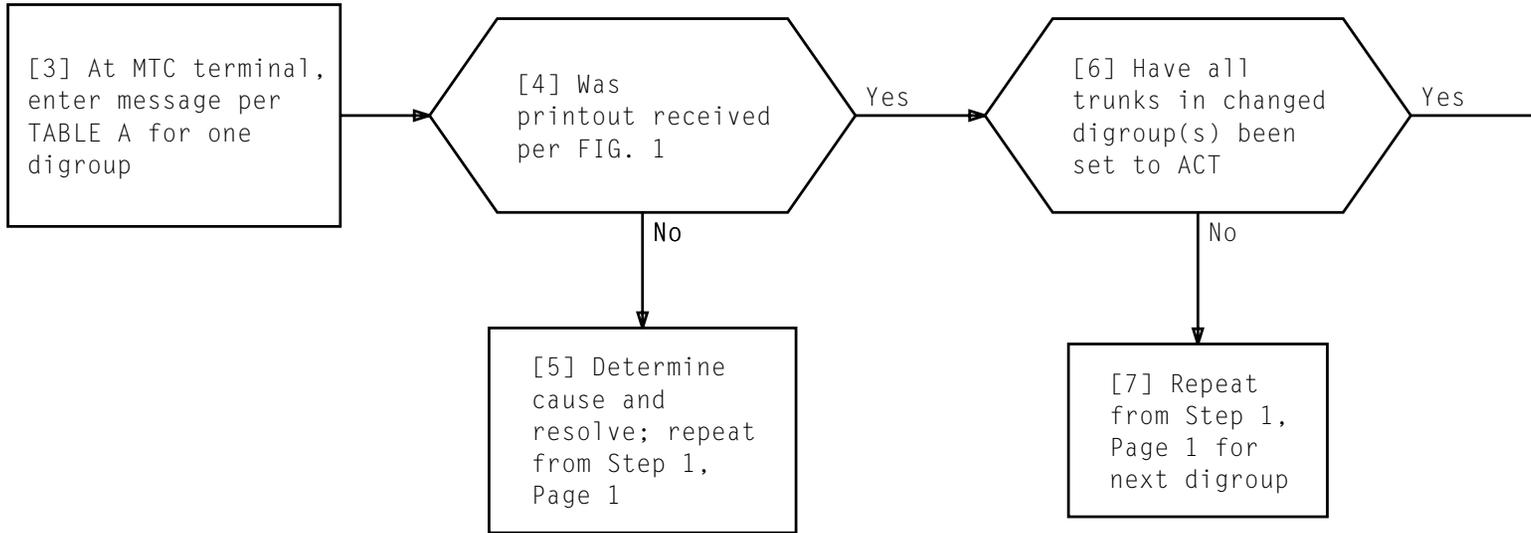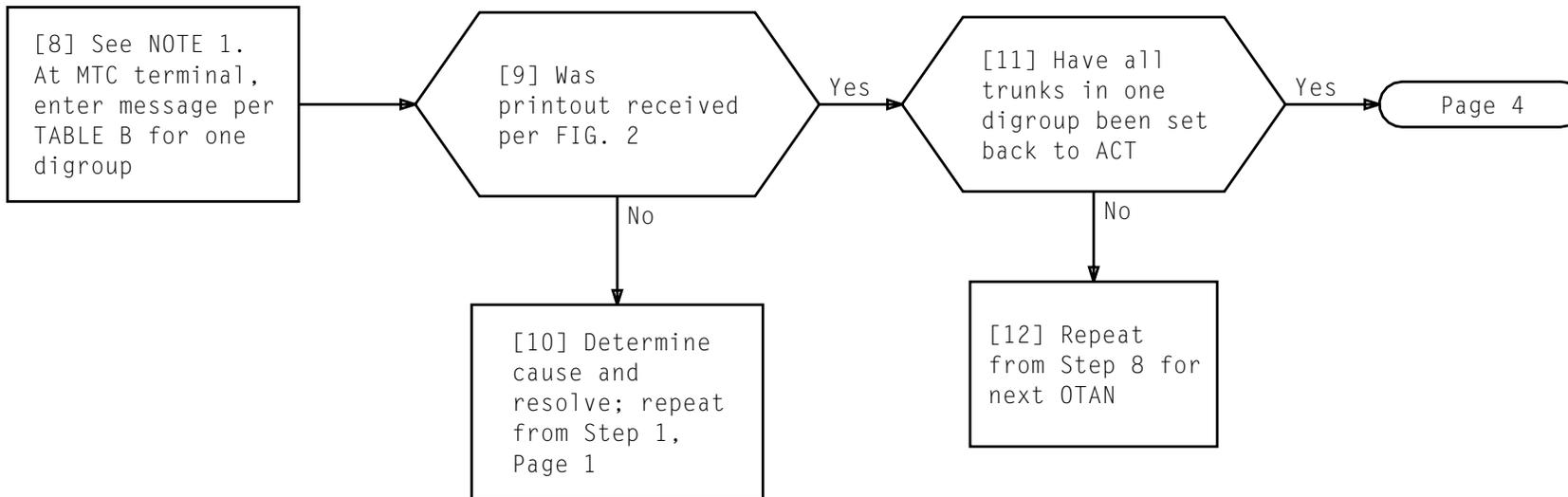| TABLE B	
MESSAGE NUMBER	INPUT MESSAGE
1	SET:TRKSTAT ACT,OTAN a:NUM b!
a = OTAN associated with digroup being changed that was recorded earlier b = Number of consecutive OTANs to be set back to ACT	

SET:TRKSTAT ACT TRAF< IDLE 1>   ,OTAN a [NOTE 1]

SET:TRKSTAT ACT ,OTAN a NUM COMPLETED
 TRK COUNT b

a = OTAN number of trunk set to ACT
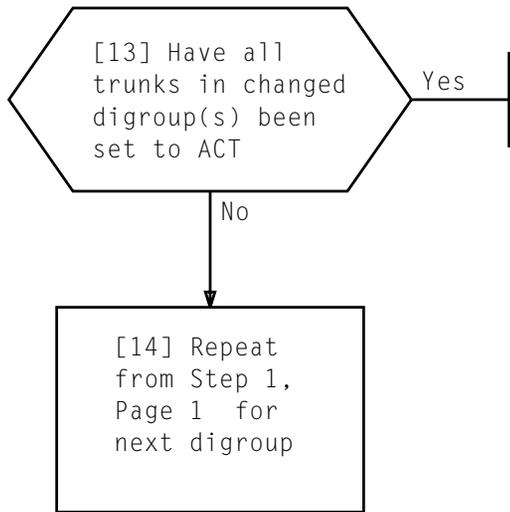b = trunks for a given digroup set to ACT

NOTE 1: For each trunk set to ACT, a 1-line
        printout will be received

FIG. 2 - SET:TRKSTAT Printout

SET TRUNKS BACK TO ACT FOR CHANGED DIGROUP(S)

```
        ┌─────────────────┐
       ╱  [13] Have all    ╲      Yes
      ╱   trunks in changed  ╲─────────┤
     ╱    digroup(s) been    ╱
      ╲   set to ACT        ╱
        └────────┬────────┘
                 │ No
                 ▼
        ┌─────────────────┐
        │  [14] Repeat     │
        │  from Step 1,    │
        │  Page 1  for     │
        │  next digroup    │
        │                  │
        └─────────────────┘
```

SET TRUNKS BACK TO ACT FOR CHANGED DIGROUP(S)

ITEM	ISSUE	ITEM	ISSUE	ITEM	ISSUE	ITEM	ISSUE	ITEM	ISSUE	ITEM	ISSUE
● IXL-001		● NTP-036		● DLP-532		DLP-567		● DLP-602		● DLP-637	
NTP-002		● NTP-037		DLP-533		● DLP-568		● DLP-603		● DLP-638	
NTP-003		● NTP-038		DLP-534		DLP-569		● DLP-604		● DLP-639	
● NTP-004		● DLP-500		DLP-535		● DLP-570		● DLP-605		● DLP-640	
● NTP-005		DLP-501		DLP-536		DLP-571		● DLP-606		● DLP-641	
● NTP-006		DLP-502		DLP-537		● DLP-572		● DLP-607		● DLP-642	
NTP-007		DLP-503		DLP-538		DLP-573		● DLP-608		● DLP-643	
NTP-008		DLP-504		DLP-539		DLP-574		● DLP-609		● DLP-644	
NTP-009		DLP-505		● DLP-540		DLP-575		● DLP-610		● DLP-645	
NTP-010		● DLP-506		● DLP-541		DLP-576		● DLP-611		● DLP-646	
NTP-011		● DLP-507		● DLP-542		● DLP-577		● DLP-612		● DLP-647	
NTP-012		● DLP-508		● DLP-543		● DLP-578		● DLP-613		● CKL-891	
NTP-013		DLP-509		DLP-544		● DLP-579		● DLP-614		TNG-893	
NTP-014		DLP-510		DLP-545		● DLP-580		● DLP-615		DPL-895	
NTP-015		DLP-511		● DLP-546		DLP-581		● DLP-616			
● NTP-016		DLP-512		DLP-547		DLP-582		● DLP-617			
NTP-017		DLP-513		● DLP-548		DLP-583		● DLP-618			
NTP-018		● DLP-514		● DLP-549		● DLP-584		● DLP-619			
NTP-019		DLP-515		DLP-550		● DLP-585		● DLP-620			
● NTP-020		DLP-516		DLP-551		DLP-586		□ DLP-621			
NTP-021		● DLP-517		DLP-552		● DLP-587		● DLP-622			
● NTP-022		● DLP-518		DLP-553		● DLP-588		● DLP-623			
NTP-023		● DLP-519		DLP-554		● DLP-589		● DLP-624			
NTP-024		DLP-520		● DLP-555		● DLP-590		● DLP-625			
NTP-025		DLP-521		DLP-556		● DLP-591		● DLP-626			
● NTP-026		DLP-522		● DLP-557		● DLP-592		● DLP-627			
NTP-027		DLP-523		● DLP-558		● DLP-593		● DLP-628			
● NTP-028		DLP-524		DLP-559		● DLP-594		● DLP-629			
● NTP-029		DLP-525		● DLP-560		DLP-595		● DLP-630			
NTP-030		DLP-526		DLP-561		DLP-596		● DLP-631			
NTP-031		DLP-527		DLP-562		DLP-597		● DLP-632			
● NTP-032		DLP-528		DLP-563		● DLP-598		● DLP-633			
NTP-033		DLP-529		DLP-564		● DLP-599		● DLP-634			
NTP-034		DLP-530		DLP-565		● DLP-600		● DLP-635			
● NTP-035		DLP-531		DLP-566		● DLP-601		● DLP-636			

● REVISED OR ADDED ITEM   □ CANCELED ITEM   Revised   **Issue 10** | MAR 1996

234-153-030 | CKL

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