



NETWORK SYSTEMS

Alcatel SONET Multiplexer

# **1603/12 SM**

Maintenance and Trouble Clearing  
OC-3/OC-12 Add/Drop Multiplexer  
Task Oriented Practices  
TOP

**NOTE**

This manual applies to 1603/12 SM Version 3.0 software. Release notes describing revisions to this software may impact operations described in this manual.

Alcatel Part Number 650205-823-015  
Issue 3, October 1994

1225 North Alma Road  
Richardson, Texas 75081-2206 U.S.A.

**THIS PRODUCT COMPLIES WITH D.H.H.S. RADIATION PERFORMANCE STANDARDS 21 CFR, 1040.10, FOR A CLASS 1 LASER PRODUCT.**

**DANGER**

**Invisible laser radiation is present when the optic connector is open. AVOID DIRECT EXPOSURE TO BEAM.**

**WARNING**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**NOTICE**

The product specification and/or performance levels contained in this document are for information purposes only and are subject to change without notice. They do not represent any obligation on the part of Alcatel. Such obligations will only be committed to in a written sales agreement signed by Alcatel Network Systems, Inc.

**Technical Support Telephone Number**

Alcatel provides technical assistance telephone numbers. For technical assistance (8:00 AM to 5:00 PM EST), call 1-800-767-6500 or after hours emergencies 1-800-553-4084.

**Documentation Support Telephone Number**

Alcatel provides a telephone number for you to report errors or to ask questions about the information in this document. The support telephone number is 1-800-767-6500 (Ext. 6365) or 1-919-850-6365.

# TABLE OF CONTENTS

<b>Table of Contents</b>	
<b>ALCL 363-203-015</b> .....	<b>Issue 3</b> ■
<b>1603/12 SM Maintenance and Trouble Clearing – Issue Control List (ICL-001)</b>	
<b>ALCL 363-203-502</b> .....	<b>Issue 3</b> ■



# ICL-001

## Issue Control List

■ Denotes an addition or revision since the previous issue.

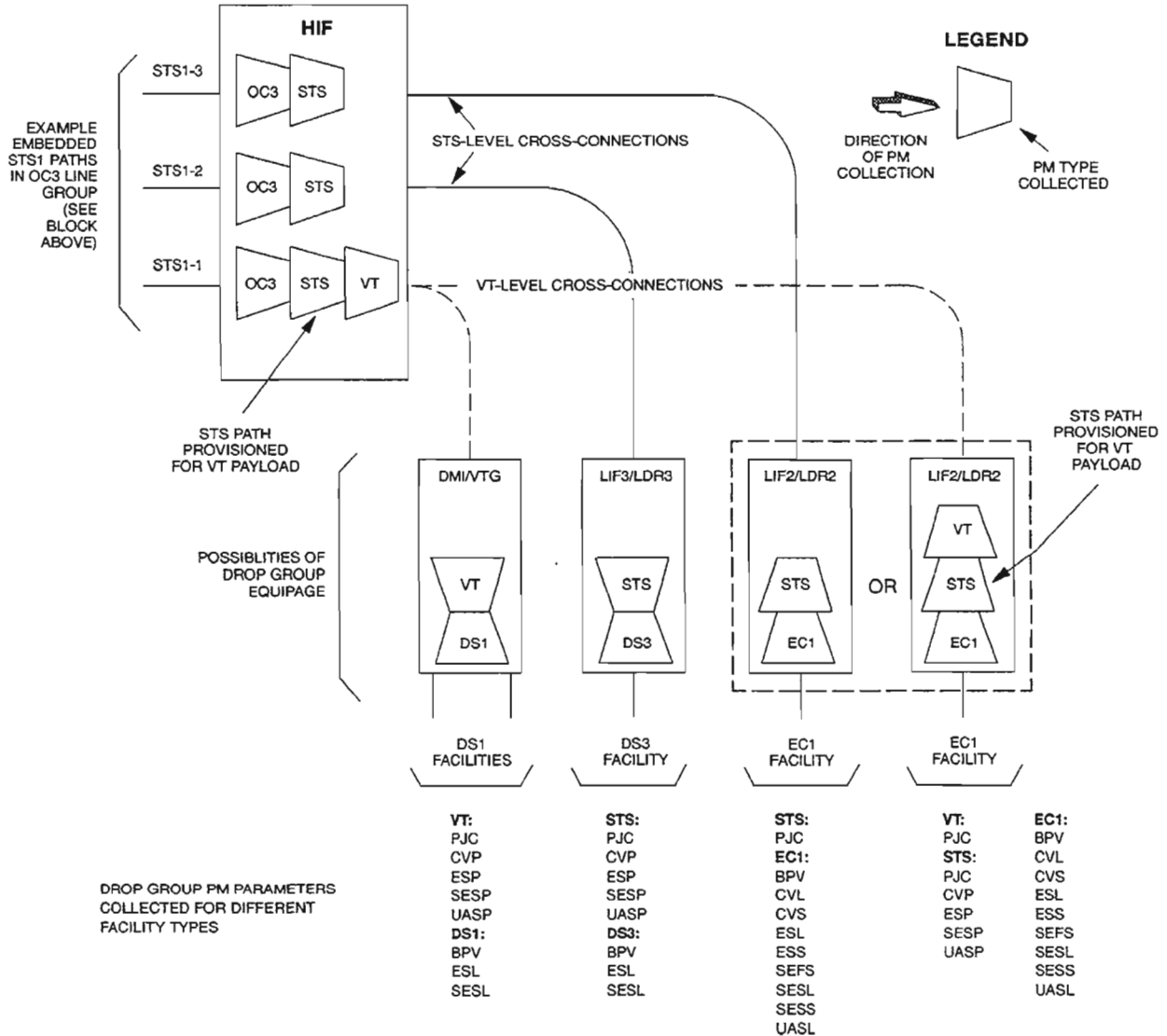
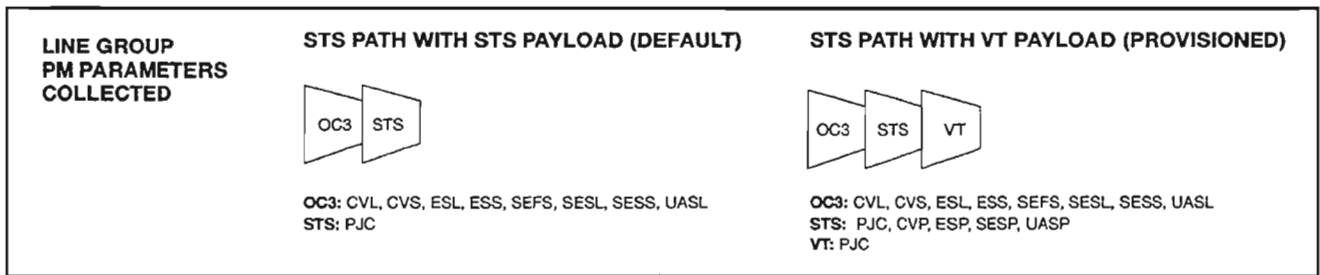
ITEM	ISSUE	ITEM	ISSUE	ITEM	ISSUE	ITEM	ISSUE
■ ICL-001	3	DLP-105	1	■ DLP-204	3	■ RTL-001	3
		DLP-106	2	■ DLP-205	2		
IXL-001	1	DLP-107	1	DLP-206	1	RTP-001	2
IXL-002	2	DLP-108	1	■ DLP-207	2	■ RTP-002	3
IXL-004	1	DLP-109	1	DLP-208	1	■ RTP-003	3
IXL-005	2	DLP-110	1	DLP-209	1	RTP-004	1
■ IXL-006	3	DLP-111	1	DLP-210	1	RTP-005	2
IXL-007	3	DLP-112	1	DLP-211	1	RTP-006	1
IXL-008	2	DLP-113	1	DLP-212	1	RTP-007	1
		DLP-114	2	DLP-213	1	RTP-008	2
DLP-002	1	DLP-115	2	DLP-214	1	RTP-009	1
■ DLP-004	1	DLP-116	2	DLP-215	1		
DLP-012	1	DLP-117	1	■ DLP-216	3	■ TAD-001	2
DLP-013	1	DLP-118	2	■ DLP-217	2	■ TAD-002	3
■ DLP-015	1	■ DLP-119	2	DLP-218	2		
DLP-016	1	DLP-122	1	DLP-219	2	TAP-004	1
DLP-018	1	DLP-123	2	DLP-220	2	TAP-005	1
DLP-100	1	■ DLP-124	3	DLP-221	2	TAP-006	2
■ DLP-101	3	DLP-200	1	DLP-222	2	TAP-007	1
DLP-102	1	■ DLP-201	2	DLP-223	1	TAP-010	2
■ DLP-103	2	■ DLP-202	2	DLP-224	1	TAP-011	2
DLP-104	1	DLP-203	2			TAP-012	1

ITEM	ISSUE	ITEM	ISSUE	ITEM	ISSUE	ITEM	ISSUE
TAP-013	1	TAP-039	1	TAP-071	1	TAP-099	1
TAP-014	2	TAP-040	2	TAP-072	1	TAP-100	1
TAP-015	2	TAP-041	1	TAP-073	1	TAP-101	1
■ TAP-016	3	TAP-042	2	TAP-074	1	TAP-102	1
TAP-017	2	TAP-043	1	TAP-075	2	TAP-103	1
TAP-018	2	TAP-050	1	TAP-076	1	TAP-104	1
TAP-019	2	TAP-051	1	TAP-077	2	TAP-105	1
TAP-020	1	TAP-052	1	TAP-078	2		
TAP-021	1	TAP-053	1	TAP-079	1	TNG-500	1
TAP-022	2	TAP-054	1	TAP-080	1	TNG-501	1
TAP-023	2	TAP-055	1	TAP-081	2	TNG-502	2
TAP-024	1	TAP-056	1	TAP-084	1	■ TNG-503	2
TAP-025	1	TAP-057	1	TAP-085	1	TNG-504	1
■ TAP-026	3	TAP-058	1	TAP-086	1	■ TNG-505	2
TAP-027	2	TAP-059	1	TAP-087	1	TNG-506	2
TAP-028	2	TAP-060	1	TAP-088	1	■ TNG-507	3
TAP-029	2	TAP-061	2	TAP-089	1	TNG-508	2
■ TAP-030	3	TAP-062	1	TAP-090	1	■ TNG-509	3
TAP-031	1	TAP-063	1	TAP-091	1	TNG-510	2
TAP-032	1	TAP-064	1	TAP-092	1	TNG-511	2
TAP-033	1	TAP-065	1	TAP-093	1	TNG-512	1
TAP-034	2	TAP-066	1	TAP-094	1	■ TNG-514	2
TAP-035	1	TAP-067	1	TAP-095	1		
TAP-036	2	TAP-068	1	TAP-096	1		
TAP-037	2	TAP-069	1	TAP-097	2		
TAP-038	2	TAP-070	1	TAP-098	2		

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

**NOTE:** *The performance monitoring parameters that are accumulated and reported for the various traffic paths and facilities are summarized in Figure 1, Page 2.*

Check Fans and Filters . . . . .	RTP-007
Performance Monitoring EC1 . . . . .	RTP-008
Performance Monitoring Equipment . . . . .	RTP-005
Performance Monitoring NE Clock . . . . .	RTP-006
Performance Monitoring OC-3 . . . . .	RTP-001
Performance Monitoring STS-1 . . . . .	RTP-002
Performance Monitoring T1 . . . . .	RTP-004
Performance Monitoring T3 . . . . .	RTP-009
Performance Monitoring VT1 . . . . .	RTP-003



A8238

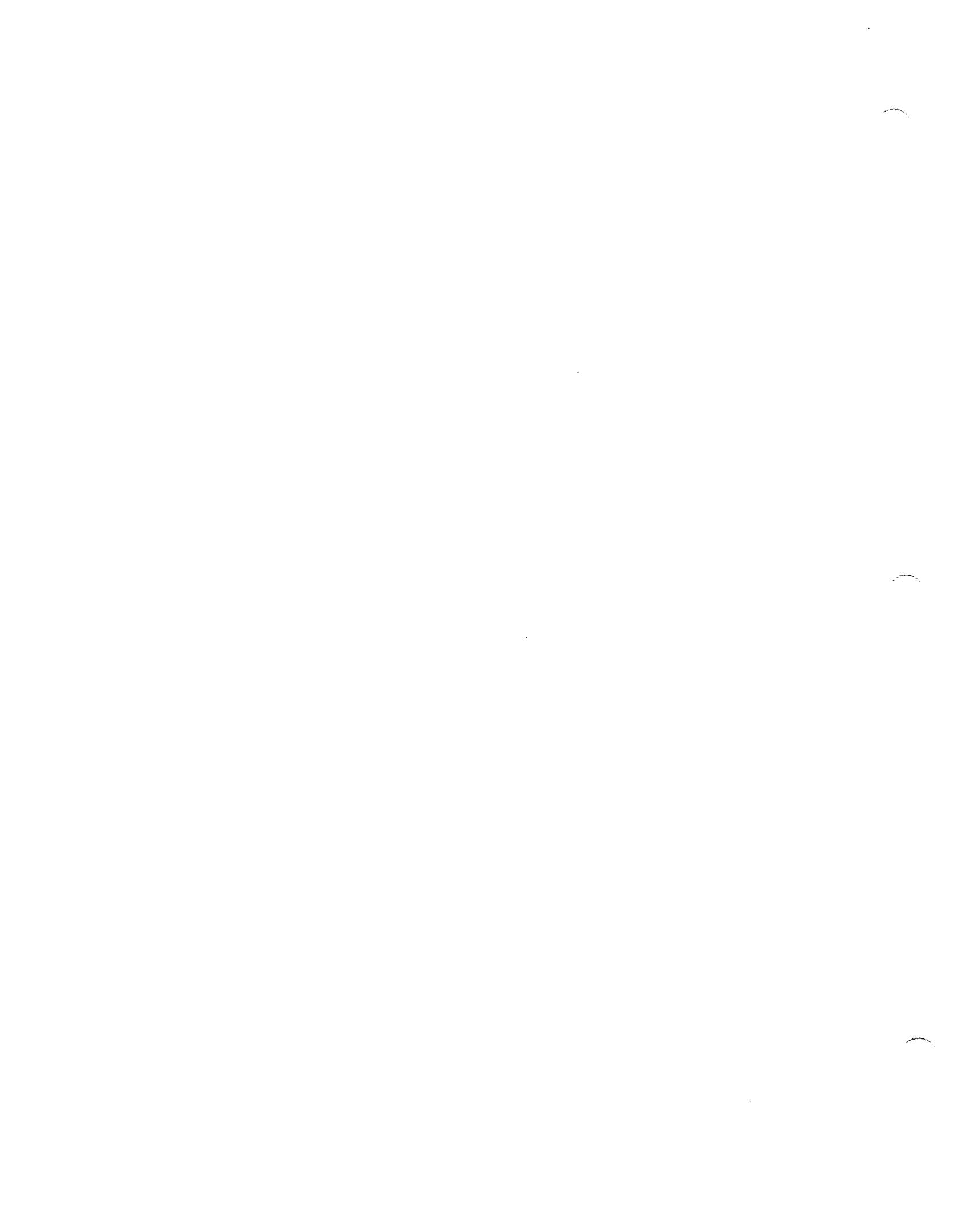
Figure 1. Performance Monitoring (PM) of STS1/VT1 Paths and Facilities

ISSUE 3	OCT 1994
ALCL 363-203-502	RTL
PAGE 2 of 2	001



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

Administration and Provisioning Functions .....	IXL-006
Alarm Fault Isolation .....	IXL-002
Installation and Mechanical Procedures .....	IXL-007
Issue Control List .....	ICL-001
Maintenance Philosophy .....	TAD-001
Plug-in Unit Status Indicators/Switches .....	TAD-002
Responding to Autonomous Messages .....	IXL-005
Responding to Command Error Codes .....	IXL-004
Routine Task List .....	RTL-001
Training and Customer Assistance (HELP) Contacts .....	IXL-008



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

Alarm Resolution (Visual) ..... TAP-010

Alarms Via Terminal (Identifying) ..... TAP-011

Clear BITS Alarm (input) ..... TAP-012

Clear BITSSYNC Alarm (BITS output) ..... TAP-013

Clear Clock Unit Alarm ..... TAP-014

Clear COA Unit Alarm ..... TAP-015

Clear Common/NE Alarm ..... TAP-016

Clear CRAFTx Alarm ..... TAP-017

Clear DLMAP Alarm ..... TAP-018

Clear DMI Unit Alarm ..... TAP-019

Clear EC1 Facility Alarm ..... TAP-022

Clear ENV Alarm ..... TAP-020

Clear EQPT Alarm (Identify) ..... TAP-021

Clear SE2A Alarm ..... TAP-018

Clear Far End Alarm (REM ALM on COA) ..... TAP-041

Clear Fan Faults ..... TAP-024

Clear FAP Alarm ..... TAP-025

Clear HIF Unit Alarm ..... TAP-026

Clear LDR Unit Alarm ..... TAP-040

Clear LIF Unit Alarm ..... TAP-042

Clear NESYNC Alarm ..... TAP-027

Clear NEP Unit Alarm ..... TAP-028

Clear OC3 Facility Alarm ..... TAP-029

Clear PWR Unit Alarm ..... TAP-030

Clear RMT Alarm ..... TAP-031

Clear SDCC Alarm ..... TAP-032

ISSUE 2	JULY 1994
ALCL 363-203-502	IXL
PAGE 1 of 2	002

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

Clear SML Facility Alarm .....	TAP-033
Clear STS Path Alarm .....	TAP-034
Clear T1 Facility Alarm .....	TAP-035
Clear T3 Facility Alarm .....	TAP-043
Clear VSCC Alarm .....	TAP-036
Clear VTG Unit Alarm .....	TAP-037
Clear VT1 Path Alarm .....	TAP-038
Clear X25 Alarm .....	TAP-023
Craft Communication Loss .....	TAP-039

<b>ISSUE 2</b>	<b>JULY 1994</b>
<b>ALCL 363-203-502</b>	<b>IXL</b>
<b>PAGE 2 of 2</b>	<b>002</b>

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

Clear Command Equipage Errors (EXXX) .....	TAP-007
Clear Command Input Errors (IXXX) .....	TAP-004
Clear Command Privilege Errors (PXXX) .....	TAP-005
Clear Command Status Errors (SXXX) .....	TAP-006

ISSUE 1	MAY 1994
ALCL 363-203-502	IXL
PAGE 1 of 1	004



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

Responding to Message: REPT ALM BITS (input) ..... TAP-050

Responding to Message: REPT ALM COM ..... TAP-051

Responding to Message: REPT ALM DLMAP ..... TAP-052

Responding to Message: REPT ALM EC1 ..... TAP-093

Responding to Message: REPT ALM EQPT ..... TAP-053

Responding to Message: REPT ALM ENV ..... TAP-100

Responding to Message: REPT ALM OC3 ..... TAP-054

Responding to Message: REPT ALM PORT ..... TAP-055

Responding to Message: REPT ALM RMT ..... TAP-056

Responding to Message: REPT ALM SDCC ..... TAP-057

Responding to Message: REPT ALM SML ..... TAP-058

Responding to Message: REPT ALM STS1 ..... TAP-059

Responding to Message: REPT ALM SYNCN ..... TAP-060

Responding to Message: REPT ALM T1 ..... TAP-061

Responding to Message: REPT ALM T3 ..... TAP-101

Responding to Message: REPT ALM VT1 ..... TAP-062

Responding to Message: REPT ALM X25 ..... TAP-094

Responding to Message: REPT EVT BITS ..... TAP-063

Responding to Message: REPT EVT COM ..... TAP-064

Responding to Message: REPT EVT DLMAP ..... TAP-065

Responding to Message: REPT EVT EC1 ..... TAP-095

Responding to Message: REPT EVT EQPT ..... TAP-066

Responding to Message: REPT EVT OC3 ..... TAP-067

Responding to Message: REPT EVT PORT ..... TAP-068

Responding to Message: REPT EVT RMT ..... TAP-069

Responding to Message: REPT EVT SDCC ..... TAP-070

ISSUE 2	JULY 1994
ALCL 363-203-502	IXL
PAGE 1 of 3	005

## RESPONDING TO AUTONOMOUS MESSAGES

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

Responding to Message: REPT EVT SML .....	TAP-071
Responding to Message: REPT EVT STS1 .....	TAP-072
Responding to Message: REPT EVT SYNCN .....	TAP-073
Responding to Message: REPT EVT T1 .....	TAP-074
Responding to Message: REPT EVT T3 .....	TAP-102
Responding to Message: REPT EVT VT1 .....	TAP-075
Responding to Message: REPT EVT X25 .....	TAP-096
Responding to Message: REPT PM EC1 .....	TAP-097
Responding to Message: REPT PM EQPT .....	TAP-076
Responding to Message: REPT PM OC3 .....	TAP-077
Responding to Message: REPT PM STS1 .....	TAP-078
Responding to Message: REPT PM SYNCN .....	TAP-079
Responding to Message: REPT PM T1 .....	TAP-080
Responding to Message: REPT PM T3 .....	TAP-103
Responding to Message: REPT PM VT1 .....	TAP-081
Responding to Message: REPT RMV BITS .....	TAP-082
Responding to Message: REPT RMV EC1 .....	TAP-098
Responding to Message: REPT RMV EQPT .....	TAP-083
Responding to Message: REPT RMV OC3 .....	TAP-084
Responding to Message: REPT RMV SML .....	TAP-085
Responding to Message: REPT RMV T1 .....	TAP-086
Responding to Message: REPT RMV T3 .....	TAP-104
Responding to Message: REPT RST BITS .....	TAP-087
Responding to Message: REPT RST EC1 .....	TAP-099
Responding to Message: REPT RST EQPT .....	TAP-088
Responding to Message: REPT RST OC3 .....	TAP-089

ISSUE 2	JULY 1994
ALCL 363-203-502	IXL
PAGE 2 of 3	005



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

Responding to Message: REPT RST SML ..... TAP-090

Responding to Message: REPT RST T1 ..... TAP-091

Responding to Message: REPT RST T3 ..... TAP-105

Responding to Message: REPT SW ..... TAP-092

<b>ISSUE 2</b>	<b>JULY 1994</b>
<b>ALCL 363-203-502</b>	<b>IXL</b>
<b>PAGE 3 of 3</b>	<b>005</b>



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

- NOTES:** 1. *These procedures are performed after the Network Element (NE) has been turned up and an end-to-end system has been established.*
2. *Several procedures in this list consist of the execution of a single command and are explained in the 1603/12 SM Commands and Messages Manual (650205-823-022). CMI refers to the Commands and Messages Manual Index.*

## Alarm Cut-Off (ACO)

Operate (see OPR-ACO-COM command) . . . . .	CMI
Retrieve Condition or Mode (see RTRV-COND-COM command) . . . . .	CMI
Set Mode (see SET-ACO-COM command) . . . . .	CMI

## Attributes (Alarm Levels) – Retrieve/Set (Also see TNG-507):

Building Integrated Timing Signal (see RTRV/SET-ATTR-BITS commands) . . . . .	CMI
Common Equipment or NE Alarms (see RTRV/SET-ATTR-COM commands) . . . . .	CMI
Customer-Defined Alarms and Controls (CDAC) . . . . .	DLP-223
Data Link Map (see RTRV/SET-ATTR-DLMAP commands) . . . . .	CMI
DS1 facility (see RTRV/SET-ATTR-T1 commands) . . . . .	CMI
DS3 facility (see RTRV/SET-ATTR-T3 commands) . . . . .	CMI
EC1 facility (see RTRV/SET-ATTR-EC1 commands) . . . . .	CMI
Equipment (see RTRV/SET-ATTR-EQPT commands) . . . . .	CMI
OC-3 facility (see RTRV/SET-ATTR-OC3 commands) . . . . .	CMI
Ports – CRAFT1, CRAFT2, SE2A, X25PORT (see RTRV/SET-ATTR-PORT commands) . . . . .	CMI
Remote Alarms (see RTRV/SET-ATTR-RMT commands) . . . . .	CMI
Section Data Comm. Channel (see RTRV/SET-ATTR-SDCC commands) . . . . .	CMI
SML Maintenance (DS1) Links (see RTRV/SET-ATTR-SML commands) . . . . .	CMI
STS-1 Path (see RTRV/SET-ATTR-STS1 commands) . . . . .	CMI
Synchronization/Timing Clock Types (see RTRV/SET-ATTR-SYCN commands) . . . . .	CMI
VT-1 Path (see RTRV/SET-ATTR-VT1 commands) . . . . .	CMI
X.25 Protocol Stack (see RTRV/SET-ATTR-X25 commands) . . . . .	CMI

ISSUE 3	OCT 1994
ALCL 363-203-502	IXL
PAGE 1 of 6	006

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

BITS (Building Integrated Timing Signal) Facilities – Provision ..... DLP-200

Centralized Autonomous Message Reporting (CAMR):

- Allow/Inhibit Message Reporting (see ALW/INH-MSG-All commands) ..... CMI
- Delete/Edit/Enter/Retrieve Entry into DLMAP ..... DLP-201

Clock (Synchronization):

- Provision Reference Clock List (NESYNC or BITSSYNC) ..... DLP-203
- Allow/Inhibit Auto Restoration of Sync Sources (see ALW/INH-AUTORST commands) ..... CMI
- Operate/Release Sync Ref. Sw. (see OPR/RLS-SYNCN commands) ..... CMI
- Read Currently Used Clock Ref. for Clock Type (see RD-SYNCN command) ..... CMI
- Set Synchronization and Sync Switch Modes (see SET-SYNCN command) ..... CMI

Command Status – Retrieve (see RTRV-CMD-STAT command) ..... CMI

Condition of – Retrieve:

- Building Integrated Timing Signal (see RTRV-COND-BITS command) ..... CMI
- Common Equipment or NE Alarms (see RTRV-COND-COM command) ..... CMI
- CDAC Environmental Alarm Inputs (see RTRV-COND-ENV command) ..... CMI
- Data Link Map (see RTRV-COND-DLMAP command) ..... CMI
- DS1 facility (see RTRV-COND-T1 command) ..... CMI
- DS3 facility (see RTRV-COND-T3 command) ..... CMI
- EC1 facility (see RTRV-COND-EC1 command) ..... CMI
- Equipment (see RTRV-COND-EQPT command) ..... CMI
- OC-3 facility (see RTRV-COND-OC3 command) ..... CMI
- Ports – CRAFT1, CRAFT2, Serial E2A, X.25 (see RTRV-COND-PORT command) ..... CMI
- Remote Alarms (see RTRV-COND-RMT command) ..... CMI
- Section Data Comm. Channel (see RTRV-COND-SDCC command) ..... CMI
- SML Maintenance (DS1) Links (see RTRV-COND-SML command) ..... CMI
- STS-1 Path (see RTRV-COND-STS1 command) ..... CMI

ISSUE 3	OCT 1994
ALCL 363-203-502	IXL
PAGE 2 of 6	006

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

## Condition of – Retrieve: (cont)

Synchronization/Timing Clock Types (see RTRV-COND-SYNCN command) .....	CMI
VT-1 Path (see RTRV-COND-VT1 command) .....	CMI
X.25 Protocol Stack .....	CMI

Configure System (NE) with Default Provisioning Data (see CONFIG-SYS command) .....	CMI
---	-----

## Craft Ports:

CRAFT1 – Edit/Retrieve (see ED/RTRV-PORT commands) .....	CMI
CRAFT2 – Delete/Edit/Enter/Retrieve (see DLT/ED/ENT/RTRV-PORT commands) .....	CMI

## Cross-connections:

STS-1 .....	DLP-220
VT-1 .....	DLP-221

Customer-Defined Alarms and Controls (CDAC) – Provision .....	DLP-223
---	---------

Data Base – Copy .....	DLP-123
------------------------	---------

Date and Time – Set (see SET-DAT command) .....	CMI
---	-----

DLMAP/CAMR/Far End Alarm (Network Routing Map) – Provision .....	DLP-201
--	---------

## DS1 (T1) Facility:

Provision .....	DLP-212
Loopback – Allow/Inhibit/Release/Operate (see ALW/INH/OPR/RLS-LPBK-T1 commands) .....	CMI

## DS3 (T3) Facility:

Provision .....	DLP-224
Loopback – Release/Operate (see OPR/RLS-LPBK-T3 commands) .....	CMI

E2A (Parallel) (Multiplied or Nonmultiplied) [ED-EQPT (COAXXX)] .....	DLP-205
---	---------

E2A (Serial) – Provision .....	DLP-202
--------------------------------	---------

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

## EC1 Facility:

Provision . . . . .	DLP-222
Loopback – Release/Operate (see OPR/RLS-LPBK-EC1 commands) . . . . .	CMI

## Equipment (Plug-in Units) – Provision:

CLK20X Plug-in . . . . .	DLP-204
COA30X Plug-in . . . . .	DLP-205
DMI102 Plug-in . . . . .	DLP-206
HIFXXX Plug-in . . . . .	DLP-207
LDRXXX Plug-in . . . . .	DLP-219
LIFXXX Plug-in . . . . .	DLP-218
VTG101 Plug-in . . . . .	DLP-211
NEP301 Plug-in . . . . .	DLP-208
PWRX01 Plug-in . . . . .	DLP-209
VSCCXXX Plug-in . . . . .	DLP-210

## Equipment (Plug-in Units) – Miscellaneous Operations:

Retrieve Configuration (see RTRV-CNFGRN command) . . . . .	CMI
Retrieve Inventory (see RTRV-INV-EQPT command) . . . . .	CMI
Retrieve Software Version (see RTRV-SWVER-EQPT command) . . . . .	CMI
Remove/Restore Units for Maintenance (see RMV/RST-EQPT commands) . . . . .	CMI
Switch, Duplex Units – Allow/Inhibit/Switch (see ALW/INH-SWDX-EQPT and SW-DX-EQPT commands) . . . . .	CMI
Switch to Protection, VTG101 – Allow/Inhibit/Switch (see ALW/INH-SWTOPROTN-EQPT and SW-TOPROTN-EQPT commands) . . . . .	CMI
Switch to Working, VTG101 – Allow/Inhibit/Switch (see ALW/INH-SWTOWKG-EQPT and SW-TOWKG-EQPT commands) . . . . .	CMI

Far End Alarm (REM LED on COA) – Provision in DLMAP . . . . .	DLP-201
---	---------

Header (NE) – Retrieve (see RTRV-HDR command) . . . . .	CMI
---	-----

<b>ISSUE 3</b>	<b>OCT 1994</b>
<b>ALCL 363-203-502</b>	<b>IXL</b>
<b>PAGE 4 of 6</b>	<b>006</b>

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

LED Status of Equipment – Retrieve (see RTRV-LED command) . . . . .	CMI
Log (System, Security) – Initialize/Retrieve (see INIT/RTRV-LOG command) . . . . .	CMI
Network Element Common Parameters (SPEMODE and WTSDEL parameters) (see RTRV/SET-NE-ALL commands) . . . . .	CMI
OC-3 Facility (Line Groups 1 and 2):	
Provision . . . . .	DLP-214
Loopback – Operate/Release (see OPR/RLS-LPBK-OC3 commands) . . . . .	CMI
Switch – Operate/Release (see OPR/RLS-PROTNSW-OC3 commands) . . . . .	CMI
Performance Monitoring and Routine Maintenance . . . . .	RTL-001
Security Functions for Calling Address Identifier (CID), Command (CMD), Password (PID), or User (Also see TNG-510):	
Activate User (Logon) (see ACT-USER command) . . . . .	CMI
Delete Security Parameters for User (see DLT-SECU-USER command) . . . . .	CMI
Edit/Retrieve Security Levels on CID (see ED/RTRV-SECU-CID commands) . . . . .	CMI
Edit/Retrieve Security Levels on CMD (see ED/RTRV-SECU-CMD commands) . . . . .	CMI
Edit Security Levels on PID (see ED-SECU-PID command) . . . . .	CMI
Edit/Retrieve Security Levels on USER (see ED/RTRV-SECU-USER commands) . . . . .	CMI
Enter New User with Security Levels (see ENT-SECU-USER command) . . . . .	CMI
Logoff (Terminate Session) (see CANC-USER or LOGOFF commands) . . . . .	CMI
Retrieve User Privilege Code (UPC) (see RTRV-SECU-UPC command) . . . . .	CMI
Section Data Comm. Channel (SDCC) – Provision . . . . .	DLP-215
SML Maintenance (DS1) Links Between Co-located NEs – Provision . . . . .	DLP-213
Software Program – Copy From Peer Processor Unit . . . . .	DLP-122
STS-1 Path – Edit/Retrieve Parameters . . . . .	DLP-216

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

## STS-1 Path Tracer message:

- Edit Expected Incoming Path Tracer Message (see ED-STS1 command) ..... CMI
- Retrieve Incoming Path Tracer Message (see RTRV-PTHTRC-STS1 command, msgtype=INCTRC) CMI
- Retrieve Expected (Provisioned) Incoming Path Tracer Message (see RTRV-STS1 command) ..... CMI
- Retrieve Outgoing (Provisioned) Path Tracer Message (see RTRV-PTHTRC-STS1 command, msgtype=TRC) ..... CMI
- Set NE Outgoing Path Tracer Message (see SET-PTHTRC-NE command) ..... CMI

## Synchronization (see Clock)

T1 (see DS1)

T3 (see DS3)

- System – Initialize (see INIT-SYS command) ..... CMI
- Virtual Tributary (VT1) – Edit/Retrieve Parameters ..... DLP-217
- X.25 Protocol Stack – Edit/Retrieve Parameters (see RTRV/ED-X25 commands) ..... CMI

ISSUE 3	OCT 1994
ALCL 363-203-502	IXL
PAGE 6 of 6	006



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

**CAUTION:** Some of the procedures in this IXL are not intended to be performed independently, but rather as part of a task involving one or more other activities. These procedures are listed here for convenience and should be accessed with discretion.

Clean Fibers .....	DLP-012
CLK20X Plug-in Installation .....	DLP-106
Covers – Install or Remove .....	DLP-113
COAXXX Plug-in Installation .....	DLP-103
Connect PC or Video Display Terminal to CRAFT1 or CRAFT2 Port .....	DLP-119
Connect Modem to CRAFT1 or CRAFT2 Port .....	DLP-120
Connect/Remove Fibers from HIF Plug-in .....	DLP-112
Connect or Delete X.25 Port .....	DLP-124
DMI102 Plug-in Installation .....	DLP-108
Download Tool:	
Install and Execute the Download Tool Program .....	DLP-114
Install 1603/12 SM Diskette Program Kit onto PC Hard Drive .....	DLP-115
Download Software from Personal Computer to 1603/12 SM Network Element .....	DLP-116
HIFXXX Plug-in Installation .....	DLP-107
LDRXXX Plug-in Installation .....	DLP-109
LIFXXX Plug-in Installation .....	DLP-108
Loop OC-3 High Speed Ports on HIFXXX Plug-in with Fiber Optic Jumpers .....	DLP-110
NEP301 Plug-in Installation .....	DLP-104
Plug-in Insertion and Removal .....	DLP-100
Plug-in Unit Replacement Procedures .....	DLP-101
PWRX01 Plug-in Installation .....	DLP-102
Static-sensitive Device General Handling Procedures .....	DLP-002
Serial E2A (TBOS) Port, Add .....	DLP-121

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

VSCCXXX Plug-in Installation .....	DLP-105
VTG101 Plug-in Installation .....	DLP-109

ISSUE 3	OCT 1994
ALCL 363-203-502	IXL
PAGE 2 of 2	007

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

Alarms, Conditions and Events ..... TNG-507

Command Structure ..... TNG-501

Command Entry Prerequisites ..... TNG-508

Commands Summary ..... TNG-502

Network Element Provisioning ..... TNG-509

Craft Interface Operation ..... TNG-503

Record Optical Measurements ..... TNG-504

Customer Assistance (HELP) Contacts ..... TNG-505

Documentation Plan ..... TNG-506

How to Use TOPs Documentation ..... TNG-500

Security/User Authorization ..... TNG-510

Support Document Locator ..... TNG-511

System Management Philosophy ..... TNG-512

Network Element Service States ..... TNG-514

ISSUE 2	OCT 1994
ALCL 363-203-502	IXL
PAGE 1 of 1	008



## GENERAL

The 1603/12 SM Add/Drop Multiplexer is a member of Alcatel's Synchronous Optical Network (SONET) family of products. The 1603/12 SM is designed for Optical Carrier Level 3 (OC-3) traffic (155.52-MHz line rate) and with three independent low speed drop groups. To provide more efficient processing and better fault tolerance, the 1603/12 SM incorporates a distributed processor design. The NEP (shelf controller), HIF (OC-3 interface), and DMI (drop group controller) plug-in units each have independent processor and memory circuitry which provides improved survivability. The design of the 1603/12 SM allows for back-up units for all traffic-carrying plug-ins. Thus, the failure of one unit does not interrupt service if the backup redundant or protection unit is equipped.

Like all of the Alcatel SONET products, once installed in a traffic-carrying network, the 1603/12 SM becomes a Network Element (NE) which permits access to, provisioning, interrogation, and communication with any other NE within the network. The 1603/12 SM is a software-controlled and software-provisioned device which can be placed locally or remotely in performance monitoring and diagnostic modes.

The 1603/12 SM continuously performs diagnostic routines and status polling to determine if operational faults exist relative to hardware, software, or traffic handling. Plug-in units are polled for equipped/unequipped/type status, as well as their In-Service/Out-Of-Service (IS/OOS) state.

If a fault is detected, alarm messages are generated. Depending on the nature of the alarm (critical, major, minor), local (visual/audible) and remote (serial E2A) alarms are also be activated. Most alarm conditions are described adequately by the alarm message. More specific trouble isolation is possible via the plug-in unit front panel alarm lamps and diagnostic commands. A list of the plug-in unit alarm/status lamps and related switches is provided in TAD-002. Refer to TNG-502 for a list and descriptions of commands and messages.

## SYSTEM DATA BASE AND MEMORY

The NEP301 (NEP) and COA30X or COA40X (COA) plug-in units contain memory which stores data about the system configuration. Some of this memory is volatile and is lost if power is removed or the unit is removed. However, the design of the 1603/12 SM provides automatic backup of all important information by use of redundant plug-in configurations and nonvolatile memory. Still, improper plug-in removal or command entries could inadvertently destroy data. It is important to follow instructions in the system manuals when entering commands and/or removing plug-ins.

The NEP/COA combination provides the system data base memory. The NEP and COA data bases are mirror images of each other. The NEP data base is referred to as the "working" data base and is volatile. Thus, when it is removed, its copy of the data base is erased. The COA data base is referred to as the "primary" backup data base. The COA data base is nonvolatile and is maintained when removed or replaced. Any changes in system status that affect the data base are automatically made to both the working and primary data bases.

The NEP/COA units store provisioning, performance threshold settings, and alarm reporting attributes information. The NEP also retains provisioning for the rest of the system, synchronization settings, security data, and communications settings. All of this is backed up on the COA. Performance monitoring data is not backed up on the COA. Various cards throughout the system collect performance monitoring data at various time increments. If you pull these cards, or they fail, all of this accumulated reporting is lost. However, the performance threshold settings are safe. Message and data logs for system and security audit are also stored on the NEP and are not backed up on the COA.

The COA has factory-default provisioning data which is provided when the unit is plugged into the system for the first time. The general default configuration is: all equipment (except the COA, NEP-A and PWR units), overhead channels and facilities are out-of-service and unassigned. The COA, NEP-A, PWR-A, PWR-B, and PWR-C equipment are assigned and in service since they are required in the minimum configuration. Also, the CRAFT1 port on the COA is out-of-service (OOS-MA-AS), but assigned, which allows for communication with the system in the default state.

When replacing the COA, certain alarms may be raised, depending on what data base (if any) is on the replacement COA. So the following assumptions are in order:

- If the replacement COA has been provisioned with a data base that differs from the data base on the NEP, a MEMDIF alarm is raised. The data base can be copied from either unit to the other (using the CPY-MEM command) depending on which unit has the preferred data base.
- If the replacement COA has a different data base version (i.e., the COA had been removed from a system with a previous software release), a MEMVER alarm is raised. In this case, the data base must be copied from the NEP to the COA.
- If the replacement COA has a blank data base (new unit), the data base is automatically copied from the NEP.
- If the COA is removed, and for some reason the NEP's data base is erased (power removed, NEP unplugged or reinitialized), the COA's data base will automatically be copied to the NEP when installed.
- If the NEP is removed or replaced, the data base is automatically copied from the COA to the NEP when plugged in.

ISSUE 2	OCT 1994
ALCL 363-203-502	TAD
PAGE 2 of 4	001

- If the COA and NEP are both removed or replaced, the data base present on the COA is copied to the NEP when plugged in.
- After successfully downloading the NEP with new software (during an in-service upgrade, for instance), a MEMDIFTRAN alarm is raised. This alarm indicates that any new provisioning data will be entered into the NEP's memory but not the COA's. This state allows the ability to revert to the previous software release if any upgrade problems are encountered. The alarm is cleared by use of the CPY-MEM command.

Thus, the only danger of losing the data base is if the data base on the NEP is inadvertently erased while a faulty COA is being replaced.

## CRAFT INTERFACE

The local craft interface is provided via the Craft, Orderwire and Alarm (COA) unit's front panel RS-232 port. If using the COA301 or COA401, a remote access RS-232 port is also provided via the wire-wrap pins on the shelf backplane. Through either of these craft ports, maintenance personnel can command various tests to locate and confirm faults. Traffic reports are also available to aid in trouble analysis. Refer to TNG-503 for a description of the craft interface operation.

## TROUBLE ANALYSIS PROCEDURES (TAPs)

Trouble Analysis Procedures (TAPs) for the 1603/12 SM are provided in the Maintenance and Trouble Clearing Manual (650205-823-015). The TAPs generally assume the following:

- An alarm message has been received via either the serial E2A interface or the craft interface (local or remote).
- Only one case of trouble exists.
- Maintenance personnel are familiar with the craft interface operations (TNG-503) and the commands output messages (TNG-502).

Trouble clearing begins with an analysis of the alarm message and/or other alarm indications. The applicable TAP is accessed through the Task Index List (IXL-001).

The basic maintenance philosophy of the 1603/12 SM is to locate and replace failed units with a minimum of service interruption. Failed units should be returned to the manufacturer for repair and return. Provisioning data pertaining to replaced units is maintained and is not required to be reentered.

ISSUE 2	OCT 1994
ALCL 363-203-502	TAD
PAGE 3 of 4	001

Care should be exercised when removing units, performing commands, etc., to avoid unnecessary service interruption. The NEPs and COA house the system's provisioning memory. These units should never be removed simultaneously.

When the replacement of a unit does not clear the trouble, the replacement unit should be removed and the original unit returned to service.

## CONCLUSION

When TAPs fail to clear the fault, an obscure or multiple fault is assumed to exist. Use the schematic and/or wiring diagrams listed in the Support Documents Locator (TNG-511) and included in the Support Documentation Manual (650205-823-006) to clear the fault.

ISSUE 2	OCT 1994
ALCL 363-203-502	TAD
PAGE 4 of 4	001



**Table A. Plug-in Unit Status Indicators/Switches**

UNIT	INDICATOR/ SWITCH	DESIGNATION	FUNCTION
CLK20X	LED, red	ALM	Indicates a failure on the CLK20X.
COA30X or COA40X	LED, red	CRI (NOTE)	Indicates one or more alarms are active that have an assigned "critical" notification code (alarm attribute). The critical notification code is typically assigned to alarm conditions that are severely service-affecting and require immediate corrective action.
	LED, red	MAJ (NOTE)	Indicates one or more alarms are active that have an assigned "major" notification code, which is typically assigned to alarm conditions that are service-affecting and require immediate corrective action, but urgency is less than a critical alarm because of a lesser number of lines affected.
	LED, yellow	MIN (NOTE)	Indicates one or more alarms are active that have an assigned "minor" notification code, which is typically assigned to alarm conditions that are not service-affecting.
	LED, yellow	REM ALM	Indicates far-end alarm.
	LED, red	ALM	Indicates unit is in alarm.
	LED, green	ACO ACTIVE	Indicates alarm cut-off has been activated, but alarm may still exist.
	Switch	ACO/LAMP TEST	Silences current audible alarm and serves as a lamp test switch.
	Switch	NE ID ID SEL	Selects far-end NE identification.
	7-Segment LED displays	1st, 2nd	Two-digit display that indicates the NE identification code of the remote alarm (REM ALM); selected by ID SEL switch.

*NOTE: The alarm LEDs (CR, MJ, and MN) on the COA are driven by alarm autonomous messages and entity states: if the primary state of the alarmed entity (equipment, for example) has been edited to OOS-MA and the state of an alarm condition changes for that entity, the changing of the alarm state is not reported until the entity is placed back in service (primary state = IS). At that time, the autonomous message reporting of the alarm (or the clearing of the alarm) appears and the LED lights (or goes off). This action may lead to the false impression that the COA is not reporting alarms properly.*

**Table A. Plug-in Unit Status Indicators/Switches (cont)**

UNIT	INDICATOR/ SWITCH	DESIGNATION	FUNCTION
DMI102	LED, green	ACT	Indicates unit is active.
	LED, red	ALM	Indicates unit is in alarm.
HIFXXX	LED, green	ACT	Indicates unit is active (carrying traffic).
	LED, yellow	SF	Indicates signal failure on facility.
	LED, red	ALM	Indicates unit is in alarm.
LDRXXX	LED, green	ACT	Indicates unit is active (carrying traffic).
	LED, yellow	SF	Indicates signal failure on facility.
	LED, red	ALM	Indicates unit is in alarm.
LIFXXX	LED, green	ACT	Indicates signal failure on facility.
	LED, red	ALM	Indicates unit is in alarm.
NEP301	LED, green	ACT	Indicates unit is active controller of the system.
	LED, yellow	ABN	Indicates system is in abnormal state and requires operator attention.
	LED, red	ALM	Indicates unit is in alarm.
PWRA01	LED, green	ON	Indicates normal operation.
	LED, red	ALM	Indicates unit is OFF or that unit has failed but input voltage is applied.
PWR801	LED, green	ON	Indicates normal operation.
	LED, red	ALM	Indicates unit is in alarm.
	Switch	POWER ON/ POWER OFF	Allows power supply to be turned on or off from front panel.
VTG101	LED, yellow	SF	Indicates signal failure on facility.
	LED, red	ALM	Indicates unit is in alarm.
VSCC101	LED, green	ACT	Indicates signal failure on facility.
	LED, red	ALM	Indicates unit is in alarm.
VSCC20X	None	----	----

## OVERVIEW

This manual is a Task Oriented Practice (TOP). It is a programmed document that gives step-by-step instructions to enable you to do a job (or task). Whenever you use this manual, you have a "task" to perform which requires a result to be accomplished. The Master Task Index List (IXL-001) is the starting point in this manual. It lists task categories with references to other Task Index Lists (IXLs). One of these Task Index Lists should contain your task and a reference to a procedure to accomplish your task.

A TOP can be a useful aid in everyday work if used correctly. Since instructions are given in the order they must be done, you cannot enter a procedure except at the beginning. You *must* do the step-by-step instructions in the order given. Failure to follow the instructions in the proper order may cause service interruptions.

A TOP contains all the instructions you need to do a job. If you are experienced on a particular job, TOP will provide you with just the information you need to do the job. If you are doing the job for the first time, you will be given step-by-step instructions with enough detail so you will not have to guess or remember where to find the necessary details.

The TOPs documentation is constructed in layers, separated by tabs, which consist of the following:

- ISSUE CONTROL LIST (ICL)
- TASK INDEX LIST (IXL)
- NON-TROUBLE PROCEDURE (NTP)
- TRAINING (TNG)
- TROUBLE ANALYSIS PROCEDURE (TAP)
- DETAILED LEVEL PROCEDURE (DLP)
- ROUTINE TASK LIST (RTL)
- ROUTINE TASK PROCEDURE (RTP)

These layers provide the user with easy access to any point within the task description. The ICL shows the current issue level of all procedures within the TOP document. The IXL (where to find) references all layers: NTP and TAP (what to do); DLP (how to do); RTL and RTP (what to do and how to do routine maintenance); and TAD and TNG (supporting information). All layers may not be present in any one manual (e.g., the TAP layer may not be present in the Turn-up and Administration TOP manual). The TOPs documentation data organization is shown in Figure 1, Page 3. The following paragraphs give a brief description of each layer.

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 1 of 11	500

## ISSUE CONTROL LIST (ICL)

This layer shows the current issue level of all procedures or elements within the TOP document. Each occurrence of a change (reissue) in any document within the TOP will be indicated on the ICL. The issue of the ICL will be the current issue of the document.

## TASK INDEX LIST (IXL)

This layer contains a listing of each task described in the TOP document. To make it easier to find your task, the tasks are split into groups of similar tasks and placed in different IXLs. A Master Task Index List (IXL-001) provides a reference to the IXLs with titles indicating the functional grouping.

## NON-TROUBLE PROCEDURE (NTP)

This layer contains, in sequence, the major steps required to perform a task to its completion. This list may be all the experienced person requires. For the inexperienced person, or experienced person desiring additional information, most task items provide a reference to a DLP. Each step of an NTP must be performed in the order listed.

## TRAINING (TNG)

This layer contains information to give the user preliminary information, if necessary, to perform a given task.

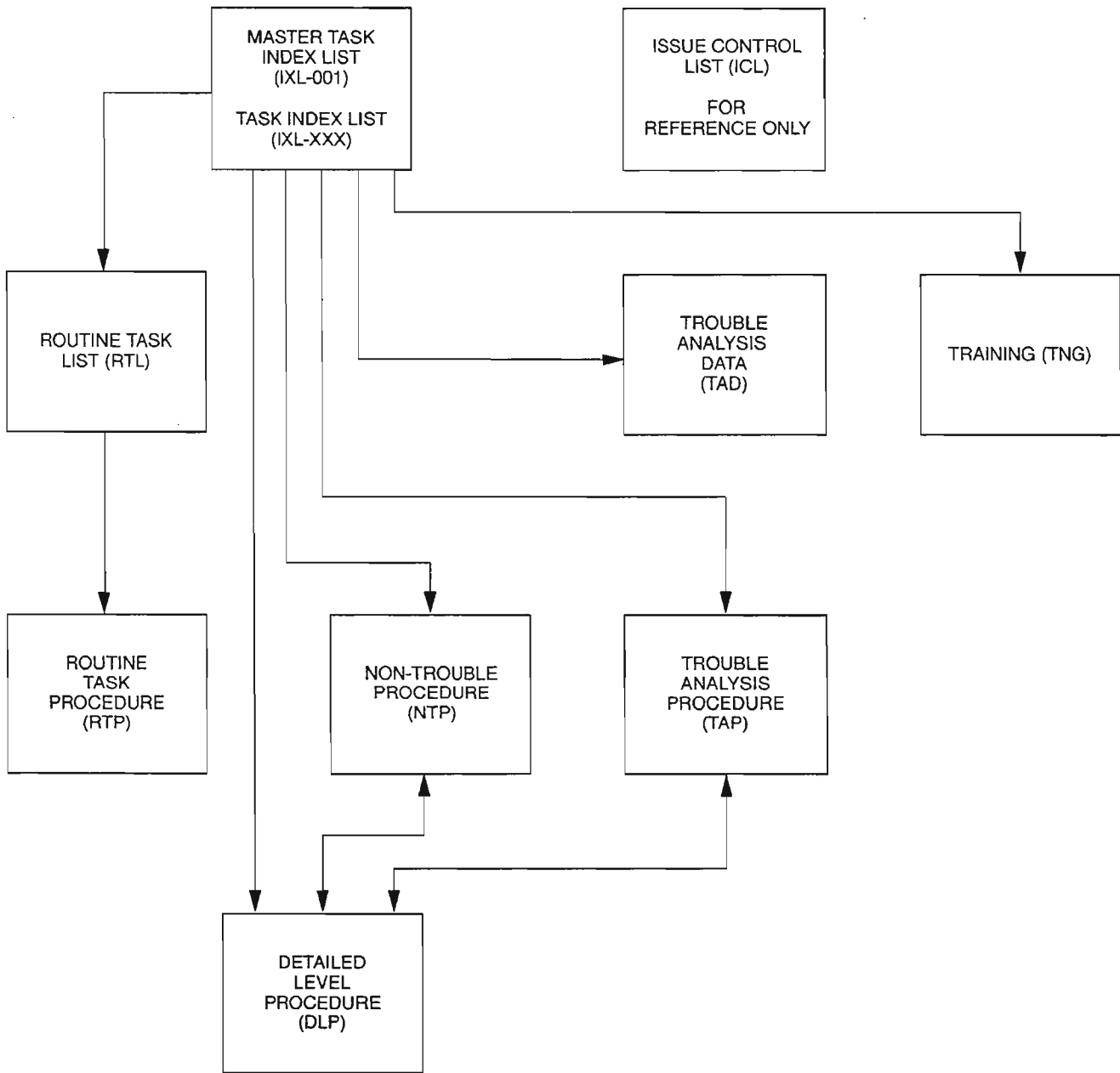
## TROUBLE ANALYSIS DATA (TAD)

This layer contains information to be used as a trouble clearing aid other than procedural data. It may be a functional schematic, text, trouble clearing chart, etc.

## ROUTINE TASK LIST (RTL)

This layer contains a listing of routine tasks to perform routine maintenance and refers the user to a Routine Task Procedure (RTP) for each task.

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 2 of 11	500



A7167

Figure 1. TOP Documentation Data Organization

## TROUBLE ANALYSIS PROCEDURE (TAP)

This layer contains, in sequence, the steps required to perform a trouble clearing task to its completion. It tells the user WHAT TO DO to complete a task. The TAP may send you to another TAP. In this case, you do not return to the TAP after leaving it. For inexperienced or experienced personnel who desire more information, some task items provide a reference to a DLP or TNG section. You return to the TAP at the same step, if you go to the referenced DLP or TNG.

## DETAILED LEVEL PROCEDURE (DLP)

This layer contains the detailed support flowcharts which describe how to perform a procedure. In addition to step-by-step information, a DLP also contains any tables or illustrations which may be required to perform the procedures. An example of a flowchart is shown in Figure 2, Page 10.

An alternate format is sometimes used when the steps in a DLP contain TL-1 commands with a large number of parameter explanations. The format used is a combination of text and flowchart styles. Figure 3, Page 11, shows an example page of the alternate DLP format. This format attempts to make it easier for the reader to follow the flow of the procedure and, when instructed, to enter TL-1 commands which may have a large number of parameters. The TL-1 command's complete syntax is shown for users who wish to enter the command in "Direct Entry Mode." The user, instead, may use the "Prompt Mode" and still use the parameter explanations to select parameters (see TNG-503 for the different command entry modes). An explanation of the parameters is included after the TL-1 command. Thus, the user does not have to look elsewhere for aid in entering the command.

The DLPs are typically referenced from an NTP or TAP, but references are also made from the IXL or from other DLPs. When another DLP is referenced from a given point, the task in the referenced DLP may be performed. When the task is completed, the user should go back to the point where the DLP was referenced.

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 4 of 11	500

# ADMONISHMENTS

Always do a job safely. Below are three admonishments to heed in TOP:

<b>[1] DANGER:</b> Means there is a possibility of <u>personal injury.</u>	<b>[2] CAUTION:</b> Means there is a possibility of <u>service interrup-</u> <u>tions.</u>	<b>[3] WARNING:</b> <i>Means there is a</i> <i>possibility of</i> <i><u>equipment dam-</u></i> <i><u>age.</u></i>
---	--	---

The work you do can be classified into two broad job categories: Trouble Clearing (TAP) and Non-Trouble Clearing (NTPs). The following are TOP definitions of these two types of work.

## TROUBLE CLEARING

Trouble clearing is simply what it says — that work you do to clear and repair troubles in the system. Trouble clearing may be done in answering a customer complaint or in responding to an office alarm, a trouble report, or an abnormal display, etc.

Assume an alarm message was reported on a terminal or a visual alarm was indicated. The first step is to obtain the Maintenance and Trouble Clearing Manual. In it, locate the IXL-001 (MASTER TASK INDEX LIST) and find the general task associated with the alarm under the “Find Your Job In The List Below” heading. Once found, the associated index under the “Then Go To” heading directs you to another IXL that gives a more detailed list of procedures (TAPs) to choose from to clear the alarm in question. After the specific task is found under “Find Your Job In The List Below” heading, locate the associated TAP under the “Then Go To” heading and go to it to follow a procedural flow to resolve the alarm.

Within a TAP there may be other procedures (DLPs or TAPs) as required to clear the fault and return the system or unit to service.

## NON-TROUBLE CLEARING

Non-trouble clearing is simply what it says — that work you do which is not connected with trouble clearing. This type is work you do to accept a system after it has been installed, turn up a system for service, maintain a system according to a controlled maintenance plan, etc. Access to non-trouble clearing procedures is basically the same as trouble clearing procedures. The IXL-001 is used to find your task category and the proper IXL is selected. From the IXL, you find the NTP or DLP to perform your task.

## NON-TROUBLE CLEARING (cont)

A reference to "CMI" in an NTP refers you to the Commands and Messages Index (CMI) in the Commands and Messages Manual. In these cases, the Commands and Messages Manual is used to help enter the command, if necessary. Only commands entered frequently are explained in DLPs.

## DETAILED LEVEL PROCEDURE SYMBOLS

### General

All flowchart instruction and decision blocks are numbered in brackets [ ]. These numbers are step identifiers ONLY and do not necessarily suggest the sequence of step performance. The user should always follow the path indicated by the arrowed flowlines. Figure 2, Page 9, shows a flowchart example.

### Instruction Block

The instruction block, shown below, is a rectangle that contains an imperative statement or phrase which indicates that the user is to perform some activity to achieve a desired result.

[1] At panel, set SC SELECT rotary switch to OFF
--

### Reference Bubble

This symbol is used as an exit off a page and directs the user where to go from that point. When entering the new page, the user should start at the lowest numbered block on that page unless otherwise directed. A page number, a page number and step number, or a completely different DLP flowchart may be noted. The following example directs the user to an individual step on another page.

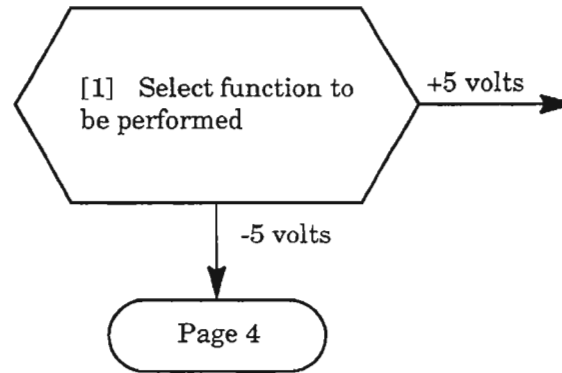
Page 4 Step 22
-------------------

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 6 of 11	500



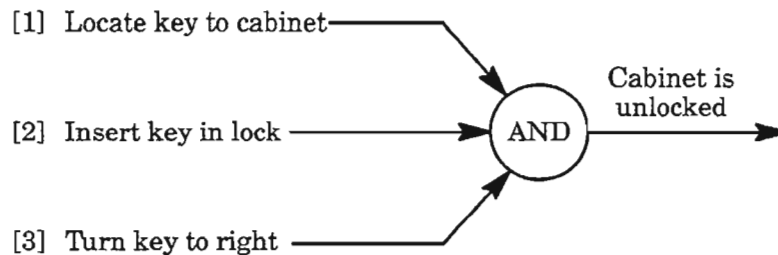
## Decision Block

A decision block, shown below, has six sides, asks the user a specific question and then routes him to the appropriate steps depending upon the answer. This block has two outputs but may have more.



## AND Symbol

The AND symbol, as shown in the following drawing, indicates that each input instruction must be performed in the order given to accomplish the result. The result statement after the symbol allows experienced personnel to bypass the detailed input steps if they already know how to achieve the results.



## End of Procedure Symbol

This symbol, shown below, is used to indicate completion of the procedure the user is currently performing. The user should now go back to the task list, task summary list, or flowchart where this procedure was referenced to fully complete the job task. See Figure 2, Page 10, for the standard format, and Figure 3, Page 11, for the alternate format.



(Standard Format)

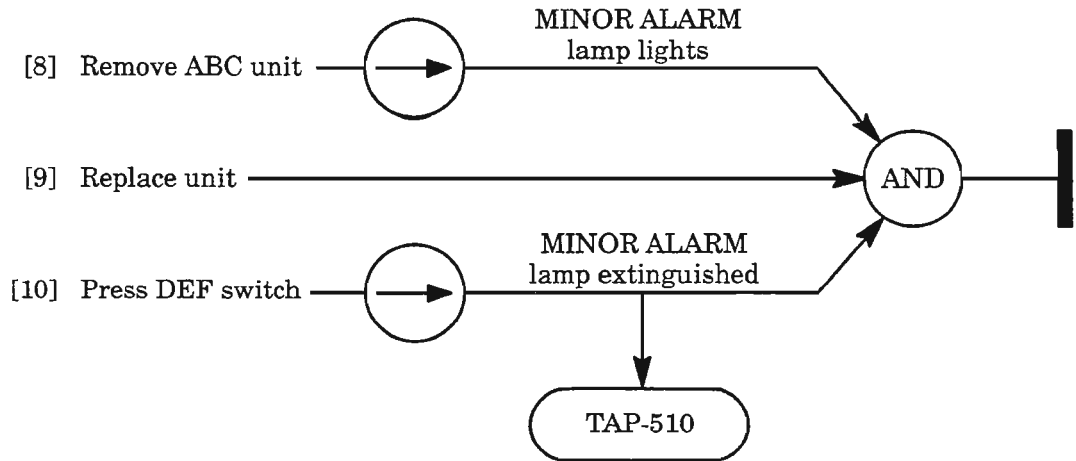
or



(Alternate Format)

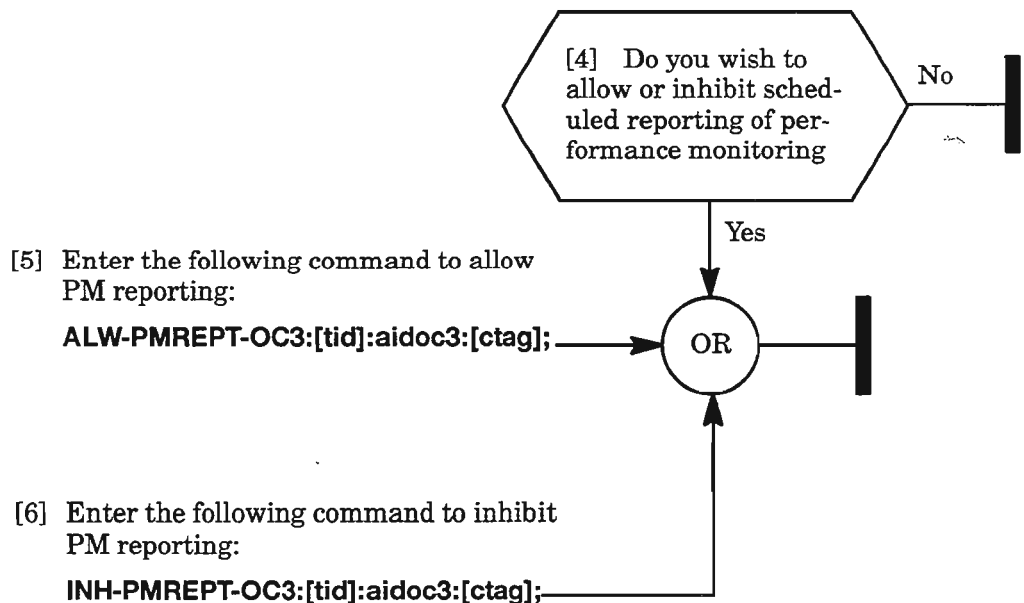
## Flow-Through Symbol

This symbol is used after an unenclosed instruction in an AND operation. It provides the user with information about observable events which occur as instructions are performed. If expected results are occurring, the user knows the procedure is progressing as it should. If an event does not occur, the user may be referenced elsewhere, as shown in the following drawing.



## OR Symbol

The OR symbol, as shown in the following drawing, indicates that only one input instruction is performed to accomplish the result. The results of the OR operation can be the same or different, depending on the intent of the operations. The example below has different results.



ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 8 of 11	500

## Flowchart References

Some procedural steps may contain notations which refer to additional information. Additional information may be notes, tables, figures, examples, and/or other flowcharts.

As shown in the following example, all MANDATORY information that the user requires to complete the step is shown as a separate phrase at the beginning of the step. All OPTIONAL information, which the user may access according to his experience level, is enclosed in parentheses, such as (DLP-500).

[1] See Table A. Mount tape (DLP-500)
---

User **MUST** see Table A to complete instruction. DLP-500 may be used if desired.

**HIFXXX (cont)**

[66] Enter command:

**RMV-EQPT:[tid]:aid:[ctag];**

where: aid = standby unit  
(CLKA or CLKB)

[67] Replace standby CLK

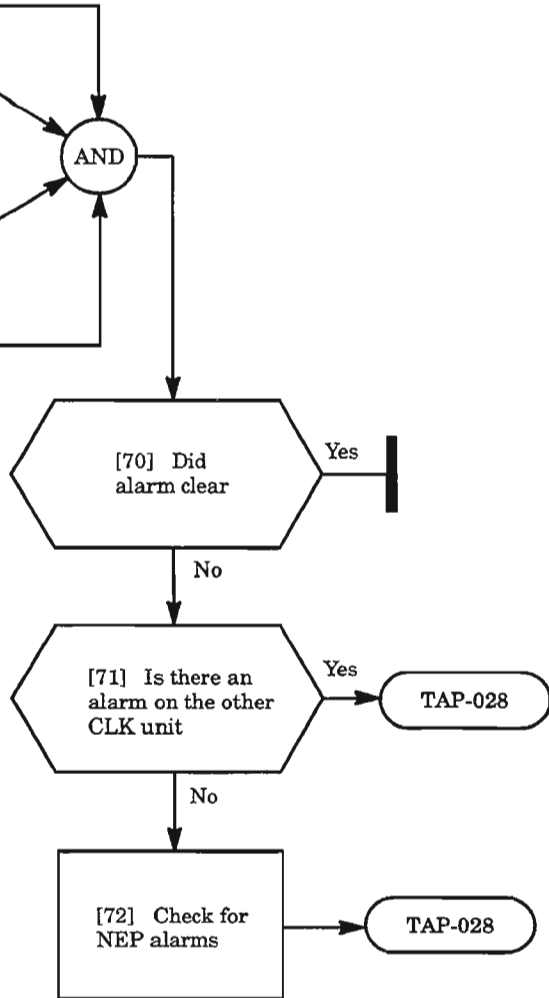
[68] Enter command:

**RST-EQPT:[tid]:aid:[ctag];**

where: aid = replaced unit  
(CLKA or CLKB)

[69] Enter command:

**RTRV-COND-EQPT:[tid]:CLK:[ctag]::;**



**CLEAR NESYNC ALARMS**

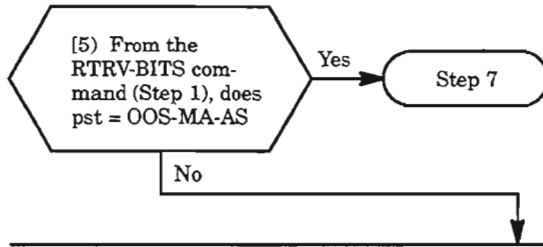
ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 13 of 26	027

A8081

Figure 2. TOP Flowchart Example

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 10 of 11	500

## Edit BITS Facility



[6] Enter the following command to place facility in OOS-MA-AS state:

**ED-BITS:[tid]:aid:[ctag]:::MA;**

where: aid = SYNCPRI (primary sync reference)  
 SYNCSEC (secondary sync reference)  
 ALL (both SYNCPRI and SYNCSEC)

**AND**

[7] Enter the following command specifying the parameters to be changed:

**ED-BITS:[tid]:aid:[ctag]:::[EQLZ=a,LINECDE=b,FMT=c]:[pst];**

where: aid = SYNCPRI Primary sync reference  
 SYNCSEC Secondary sync reference  
 ALL (both SYNCPRI and SYNCSEC)

a = For 22 gauge: Enter distance in feet (0 to 655) to DS1 cross-connect or inter connecting equipment

= For 26 gauge:

Enter: 0 for 0-50 feet  
 200 for 51-100 feet  
 300 for 101-200 feet  
 500 for 201-300 feet  
 600 for 301-450 feet

b = AMI Alternate Mark Inversion for DS1 line code (LINECDE)  
 = B8ZS Bipolar with 8 Zero Substitution for DS1 line code (LINECDE)

c = SF Super Frame framing format (FMT)  
 = ESF Extended Super Frame framing format (FMT)

pst = IS Place facility into in-service state after completing command  
 OOS Place facility into out-of-service state for provisioning activity  
 MA Memory administration (synonymous with OOS)  
 MT Place facility into maintenance state (OOS-MT)  
 (null) If pst is not specified, the Primary State of the facility will remain unchanged after the command is executed

**PROVISION BITS FACILITIES**

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 5 of 8	200

A8082

Figure 3. TOP Flowchart Example (Alternate DLP Format)

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 11 of 11	500



## GENERAL

This document provides a brief introduction to the TL-1 input command structure used for the 1603/12 SM system. A more detailed description is provided in Appendix B of the 1603/12 SM Commands and Messages Manual (650205-823-022). Also see TNG-503 for information on the 1603/12 SM craft interface and conventions used for entering commands.

The input command is in the following general form:

**COMMAND\_CODE:STAGING\_PARAMETERS::DATA\_PARAMETERS;**

where the colon (:) is the syntactical data block delimiter, and the semicolon (;) is the input command terminator.

## COMMAND CODE

The command code consists of a verb and one or two modifiers. The verb and modifier(s) are separated by a hyphen (-) as shown:

**VERB-MODIFIER1-MODIFIER2:**

The verb signifies the action to be performed. The modifiers define the nature of the action and the entity within the target NE upon which the action is to be taken. The first modifier designates the unit the verb is acting on or defines the particular view to which the command is directed. The second modifier, when used, defines either the intended unit or function the action is to be taken on. Examples of command codes are:

**ENT-T1:** (enter-T1)

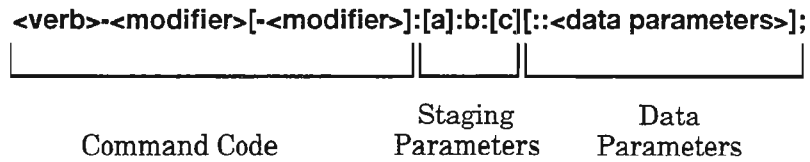
The unit "T1" is acted on by the verb "ENT"

**ED-SECU-CMD:** (edit-security-command)

The particular view, "security levels," defines what is being EDited on the command. The unit "CMD" is what the action is taken on.

# PARAMETERS

Parameters in general are values which clarify the function of a command. The parameters are classified as either staging parameters or data parameters. The syntactical relationship of the parameters within a command is illustrated as follows:



where:

- `< >` is not part of syntax, but indicates the enclosed word(s) describe the part of the command
- `[ ]` is not part of syntax, but designates the enclosed value is optional
- `:` colon, is part of syntax giving a block delimiter
- `;` semicolon, is part of syntax giving a command terminator
- a** target identifier (tid)
- b** access identifier (aid)
- c** correlation tag (ctag)

Staging parameters in a command are position-defined; whereas, data parameters are either position-defined or name-defined. Position-defined parameters and name-defined parameters are described under the heading "Data Parameters."

## Staging Parameters

The staging parameters describe where the verb of the command is supposed to conduct its operation. The staging parameters uniquely identify the entity location within the NE, i.e., its address. There are three unique addressing parameters: Target Identification (tid), Access Identification (aid), and Correlation Tag (ctag). These are correspondingly identified as a, b, and c in the previous example of the command structure.

### Target Identification (tid):

Target Identification, as its name implies, designates the identification of the NE the command is directed to. It is comprised of alphanumeric and hyphens utilizing a maximum of 20 characters. The recommended value of *tid* is the Common Language Location Identification (CLLI) code. When a user or OS directly interfaces an NE, the *tid* may be omitted (null). Regardless of how many NEs in a system, each should have its own *tid* code to which the command can be directed.

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 2 of 5	501



## Staging Parameters (cont)

### Access Identifier (aid):

Within the NE are entities (such as specific facilities and equipment) to which a command is to be directed. The Access Identifier (aid) gives this location. It is the identifier of the specific element that is addressed in the command code. An example of this is in the command:

```
RTRV-OC3:[tid]:LG1-HIFA:[ctag];
```

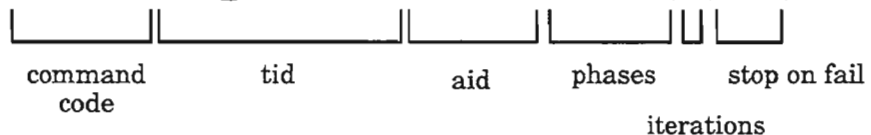


aid

where LG1-HIFA describes the A-side of the OC-3 facility (HIFA) of Line Group 1 (LG1).

If there is more than one entity to which the command is to be addressed, *aid* is the vehicle in which to place the descriptors of each record desired. Within a multi-record access block, each descriptor item then is to be separated by an ampersand (&). The ampersand (&) is a syntactical operator which the crafts-person must use in separating descriptive records, groups, and members within an *aid*. It may be a single ampersand (&) to show more than one nonconsecutive item, or it may be double (&&) to show a consecutive list of items. An example of each is shown by setting up a command to run a series of diagnostic tests (phase 2 and phases 8 through 18) on HIFA in Line Group 1:

```
DGN-EQPT:1603_MAINOFFICE:LG1-HIFA::2&&&18,10,IMED;
```



### Correlation Tag (ctag):

Following the staging parameters *tid* and *aid* is the *ctag* (Correlation Tag) staging parameter. The *ctag* parameter is used to correlate the response message to the input command. With the *ctag* included in the input command, the response to that command will echo the *ctag*. The *ctag* parameter may have up to six alphabetic characters or six numeric characters, but not a mixture of the two.

## Data Parameters

Data parameters are either position-defined or name-defined. Data parameters may either be required or optional. Required parameters are normally position-defined within their parameter blocks. Since there is no default value on a new record, the data must be given in the command where it is required by the command verb. Optional parameters are also positional within the block. An input command need only to invoke a feature when it is activated or changed. Positional parameters must be in a predetermined order within a parameter block, with each parameter separated by a comma (,). If parameter default values are provided by the system, the craftsperson may opt to omit the value; but, positional commas must be entered when there are parameters following the option and being prior to a separator (:) or terminator (;). If there are no additional parameters to be added following an option, then the commas may be eliminated.

An illustration of these parameters is as follows:

```
:<par_val>,<par_val>,,<par_val>:<par_val>,<par_val>;
```

Positional Parameters

where par\_val is parameter value.

Name-defined parameters have a key word and an associated value specified for each key word. If the parameter value is not specified, then, if assigned, a default value is assumed. If there is no assigned value and no input provided, the command will respond with an error message. Within the name-defined parameter block, a series of keyword and value parameters may appear in any order. Each name-defined data parameter block contains one or more keyword-defined data items in the form:

```
:<key_word>=<value>,<key_word>=<value>,....<key_word>=<value>
```

Name-defined Parameters

The keyword defines the parameter of the entity or *aid* and the value is the one of a choice of values that the keyword parameter may have. An example of this is in the command, ED-SECU-USER, where the *aid* is the user identification and which also has a name-defined block. The name-defined block has two keywords: PAGE and UAGE. Either keyword may appear first with the selected value. It so happens that the selection of values of each is the same: 0...999 days. PAGE is the number of days before the private identifier will expire if not changed. UAGE is the number of days before the user identification will expire if not used. Following the preceding format, the name-defined block of the command could be: .....PAGE=90,UAGE=90;

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 4 of 5	501

# SYNTACTICAL OPERATORS

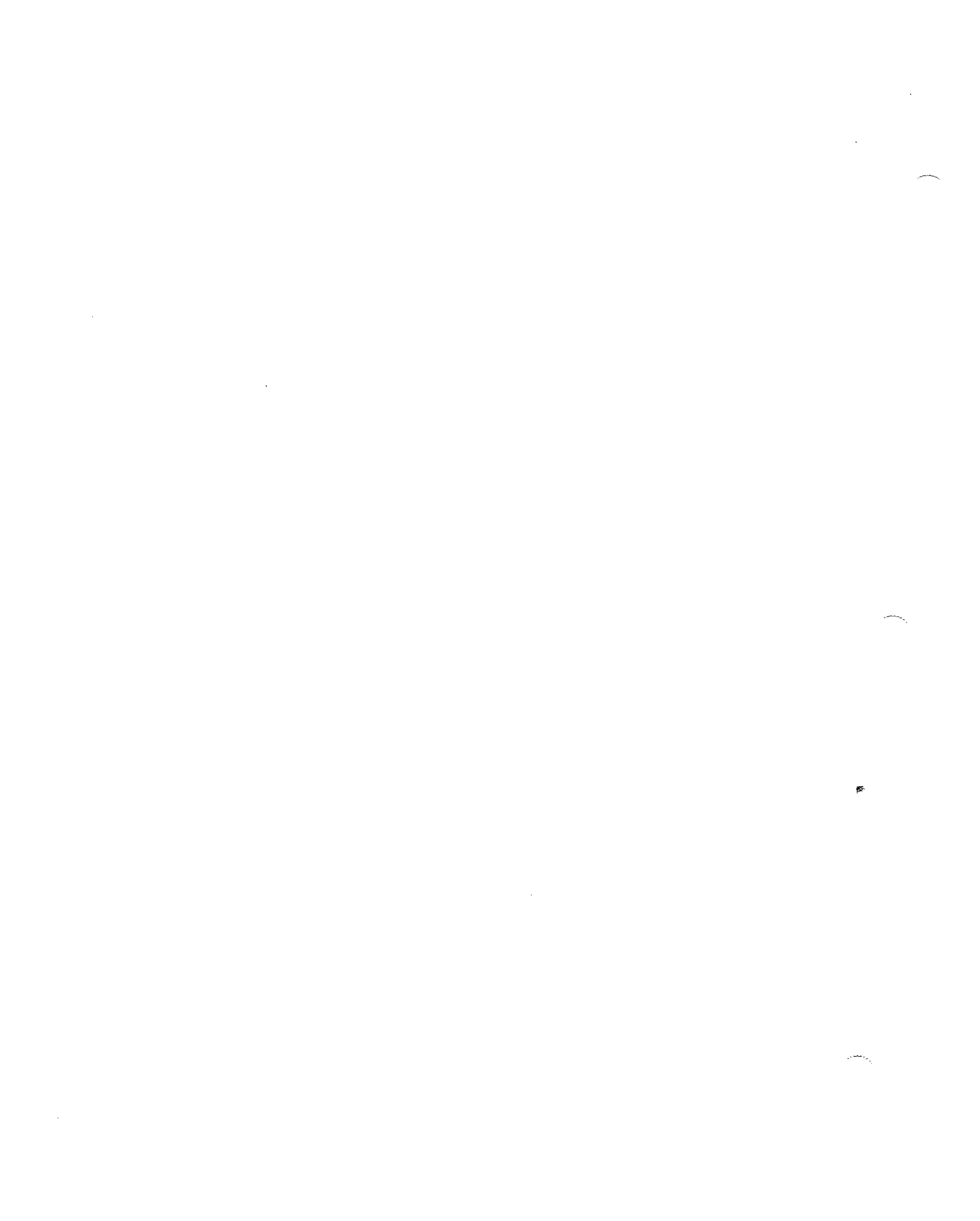
Certain syntactical operators are obvious and consistent in all commands. They are:

- There is always a hyphen (-) between the verb and modifiers and between modifiers;
- There is always a colon (:) after the command code, *tid* parameter, *aid* parameter, and *ctag* parameter. Other colons may be present for future planned parameter blocks;
- Commas (,) separate parameters of a block;
- The semicolon (;) always terminates a command.

A summary of the syntactical operators is provided in Table A.

**Table A. TL-1 Syntactical Operators**

Operator	Definition
: (COLON)	Delimiter between the command code and the first parameter block. Also, the delimiter between each successive parameter block in an input or output message string.
; (SEMICOLON)	Input command message terminator, placed at the end of the last parameter block in the message string.
, (COMMA)	Within a multi-parameter block, the delimiter between each individual parameter (data unit).
- (HYPHEN)	Delimiter between the identifiers (verb and modifiers) in the command code segment of an input message string. Also, the coupling operator between the components of a compound parameter.
& (AMPERSAND)	The coupling operator between multi-parameter entities in a parameter block (i.e., a string of like parameters, such as multiple entities in the AID staging parameter block). A single ampersand is used between the members of a non-sequential string. Two ampersands are used between the first and last parameter of a sequential string.
" (QUOTES)	Text strings within quotation marks are not generally parsed by the recipient. In an output message, text within quotation marks is written in input command syntax and is parsed by the recipient.
(SPACE)	A delimiter between information units in an output message.
/*...*/	A delimiter to contain free format text.



## GENERAL

Table A lists and briefly describes the 1603/12 SM TL-1 commands. For details on the 1603/12 SM system commands, refer to the 1603/12 SM Commands and Messages Manual (650205-823-022).

**Table A. 1603/12 SM Command Summary (Listed Alphabetically)**

COMMAND	DESCRIPTION
ACT-USER	Activate user (LOGON).
ALW-AUTORST	Allow automatic restoration of the selected synchronization sources.
ALW-DGN-EQPT	Allow periodic diagnostic on an equipment.
ALW-LPBK-T1	Allow automatic loopback on a DS1 facility.
ALW-MSG-ALL	Allow all autonomous messages being reported to an OS.
ALW-PMREPT-ALL	Allow ALL PM scheduled reporting.
ALW-PMREPT-EC1	Allow EC1 PM scheduled reporting.
ALW-PMREPT-EQPT	Allow equipment PM scheduled reporting.
ALW-PMREPT-OC3	Allow OC-3 PM scheduled reporting.
ALW-PMREPT-STS1	Allow STS-1 path PM scheduled reporting.
ALW-PMREPT-SYNCN	Allow PM scheduled reporting of a SYNCN NE clock type.
ALW-PMREPT-T1	Allow DS1 PM scheduled reporting.
ALW-PMREPT-T3	Allow DS3 PM scheduled reporting.
ALW-PMREPT-VT1	Allow VT1 path PM scheduled reporting.
ALW-SWDX-EQPT	Allow automatic or manual duplex switching of equipment.
ALW-SWTOPROTN-EQPT	Allow automatic or manual switching to protection of equipment.
ALW-SWTOWKG-EQPT	Allow automatic or manual switching of an EQPT back to working.
CANC-USER	Terminate session.
CLR-E2ADISP	Clear the local E2A display address.
CONFIG-SYS	Configure the system with default provisioning data.
CPY-MEM	Copy data from a specified memory storage device to another.
DGN-EQPT	Diagnose an equipment connection.
DLT-BITS	Delete a BITS facility.
DLT-CRS-STS1	Delete STS-1 cross-connect.
DLT-CRS-VT1	Delete VT1/T1 cross-connect.
DLT-DLMAP	Delete network routing map data.
DLT-E2AMAP	Delete an E2A map entry.
DLT-EC1	Delete an EC1 facility.

ISSUE 2	JULY 1994
ALCL 363-203-502	TNG
PAGE 1 of 10	502

**Table A. 1603/12 SM Command Summary (Listed Alphabetically) (cont)**

<b>COMMAND</b>	<b>DESCRIPTION</b>
DLT-EQPT	Delete an equipment.
DLT-OC3	Delete an OC-3.
DLT-PORT	Delete a port.
DLT-SDCC	Delete section data communications channel.
DLT-SECU-USER	Delete the security parameters associated with a user.
DLT-SML	Delete an SML.
DLT-T1	Delete a DS1.
DLT-T3	Delete a DS3.
ED-BITS	Edit/change provisioning data associated with a BITS facility.
ED-CRS-ST51	Edit STS-1 cross-connect.
ED-CRS-VT1	Edit VT1/T1 cross-connect.
ED-DLMAP	Edit the data link map.
ED-EC1	Edit/change provisioning data associated with an EC1 facility.
ED-EQPT	Edit/change provisioning data associated with an equipment.
ED-FFP-OC3	Edit/change provisioning data associated with OC-3 facility protection switch.
ED-FFP-ST51	Edit/change provisioning data associated with STS-1 facility protection switch.
ED-FFP-VT1	Edit/change provisioning data associated with VT1 facility protection switch.
ED-OC3	Edit/change provisioning data associated with an OC-3.
ED-PORT	Edit/change provisioning data associated with a port.
ED-SDCC	Edit/change a section data communications channel.
ED-SECU-CID	Edit security levels on a Calling Address Identifier (CID).
ED-SECU-CMD	Edit security levels on a command.
ED-SECU-PID	Edit the user's PID (password).
ED-SECU-USER	Edit security levels on a user.
ED-SML	Edit/change provisioning data associated with an SML.
ED-ST51	Edit/change provisioning data associated with an STS-1 path.
ED-SYNCN	Set the clock reference list for the selected clock type.
ED-T1	Edit/change provisioning data associated with a DS1.
ED-T3	Edit/change provisioning data associated with a DS3.
ED-VT1	Edit/change provisioning data associated with a VT1 path.
ED-X25	Edit/change provisioning data associated with the X.25 stack.
ENT-BITS	Enter provisioning data associated with BITS facility.

**Table A. 1603/12 SM Command Summary (Listed Alphabetically) (cont)**

<b>COMMAND</b>	<b>DESCRIPTION</b>
ENT-CRS-ST51	Enter STS-1 cross-connect.
ENT-CRS-VT1	Enter VT1/T1 cross-connect.
ENT-DLMAP	Enter network routing map data.
ENT-E2AMAP	Enter an E2A poll address (map entry).
ENT-EC1	Assign an EC1 facility and enter provisioning data.
ENT-EQPT	Assign an equipment and enter provisioning data.
ENT-OC3	Install an OC-3 and enter provisioning data.
ENT-PORT	Install a port and enter provisioning data.
ENT-SDCC	Install a section data communications channel.
ENT-SECU-USER	Create a new user with associated parameters.
ENT-SML	Install an SML and enter provisioning data.
ENT-T1	Install a DS1 and enter provisioning data.
ENT-T3	Install a DS3 and enter provisioning data.
INH-AUTORST	Inhibit automatic restoration of the selected memory or synchronization sources.
INH-DGN-EQPT	Inhibit periodic diagnostic on an equipment.
INH-LPBK-T1	Inhibit automatic loopback on DS1 facility.
INH-MSG-ALL	Prevent ALL autonomous messages from being reported to the OS.
INH-PMREPT-ALL	Inhibit ALL PM scheduled reporting.
INH-PMREPT-EC1	Inhibit EC1 PM scheduled reporting.
INH-PMREPT-EQPT	Inhibit equipment PM scheduled reporting.
INH-PMREPT-OC3	Inhibit OC-3 PM scheduled reporting.
INH-PMREPT-ST51	Inhibit STS-1 path PM scheduled reporting.
INH-PMREPT-SYNCN	Inhibit PM scheduled reporting of a SYNCN NE clock type.
INH-PMREPT-T1	Inhibit DS1 PM scheduled reporting.
INH-PMREPT-T3	Inhibit DS3 PM scheduled reporting.
INH-PMREPT-VT1	Inhibit VT1 path PM scheduled reporting.
INH-SWDX-EQPT	Inhibit automatic or manual duplex switching of equipment.
INH-SWTOPROTN-EQPT	Inhibit automatic or manual switching of equipment to protection unit.
INH-SWTOWKG-EQPT	Inhibit automatic or manual switching of equipment back to working unit.
INIT-LOG	Initialize a message log.
INIT-REG-EC1	Initialize EC1 PM registers.
INIT-REG-EQPT	Initialize EQPT PM registers.

<b>ISSUE 2</b>	<b>JULY 1994</b>
<b>ALCL 363-203-502</b>	<b>TNG</b>
<b>PAGE 3 of 10</b>	<b>502</b>

**Table A. 1603/12 SM Command Summary (Listed Alphabetically) (cont)**

<b>COMMAND</b>	<b>DESCRIPTION</b>
INIT-REG-OC3	Initialize OC-3 PM registers.
INIT-REG-STS1	Initialize STS-1 path PM registers.
INIT-REG-SYNCN	Initialize PM registers of the SYNCN NE clock.
INIT-REG-T1	Initialize DS1 PM registers.
INIT-REG-T3	Initialize DS3 PM registers.
INIT-REG-VT1	Initialize VT1 path PM registers.
INIT-SYS	Initialize processor or system.
LOGOFF	1603/12 SM command support to terminate a session.
OPR-ACO-COM	Cut off the office audible alarm indications associated with 1603/12 SM and all its subunits.
OPR-EXT-CONT	Operate external control output (CDAC).
OPR-LPBK-EC1	Operate loopback on an EC1 facility.
OPR-LPBK-OC3	Operate loopback on an OC-3 facility.
OPR-LPBK-T1	Operate loopback on a DS1 facility.
OPR-LPBK-T3	Operate loopback on a DS3 facility.
OPR-LSR	Activate automatic laser shutdown for recovery.
OPR-PROTNSW-OC3	Operate path protection switch on OC-3.
OPR-PROTNSW-STS1	Operate path protection switch on STS-1.
OPR-PROTNSW-VT1	Operate SONET line protection switch on VT1.
OPR-SYNCNSW	Operate synchronization references switch on selected clock type.
RD-MEM-ADRS	Read data from specified memory.
RD-SYNCN	Read the currently used clock reference for the selected clock type.
RLS-EXT-CONT	Release external control output (CDAC).
RLS-LPBK-EC1	Release loopback on an EC1 facility.
RLS-LPBK-OC3	Release loopback on an OC-3 facility.
RLS-LPBK-T1	Release loopback on a DS1 facility.
RLS-LPBK-T3	Release loopback on a DS3 facility.
RLS-PROTNSW-OC3	Release switch OC-3.
RLS-PROTNSW-STS1	Release switch STS-1.
RLS-PROTNSW-VT1	Release switch VT1.
RLS-SYNCNSW	Release a synchronization reference switch request (i.e., undo, switch back to previous syncn reference, provided that previous sync reference is not in a failure state).
RMV-BITS	Remove BITS facility from service.
RMV-EC1	Remove EC1 facility from service.



**Table A. 1603/12 SM Command Summary (Listed Alphabetically) (cont)**

<b>COMMAND</b>	<b>DESCRIPTION</b>
RMV-EQPT	Remove an equipment from service.
RMV-OC3	Remove OC-3 facility from service.
RMV-SML	Remove SML facility from service.
RMV-T1	Remove DS1 facility from service.
RMV-T3	Remove DS3 facility from service.
RST-BITS	Restore BITS facility to service.
RST-EC1	Restore EC1 facility to service.
RST-EQPT	Restore an equipment to service.
RST-OC3	Restore OC-3 facility to service.
RST-SML	Restore SML facility to service.
RST-T1	Restore DS1 facility to service.
RST-T3	Restore DS3 facility to service.
RTRV-ALM-ALL	Retrieve current alarms of all entities.
RTRV-ALM-BITS	Retrieve current alarms of the BITS clock source.
RTRV-ALM-COM	Retrieve current alarms of COMMON equipment/NE.
RTRV-ALM-DLMAP	Retrieve DLMAP alarms.
RTRV-ALM-EC1	Retrieve current alarms of an EC1.
RTRV-ALM-ENV	Retrieve current alarms of an environmental alarm input (CDAC).
RTRV-ALM-EQPT	Retrieve current alarms of an equipment.
RTRV-ALM-OC3	Retrieve current alarms of an OC-3.
RTRV-ALM-PORT	Retrieve current alarms of a port.
RTRV-ALM-RMT	Retrieve local RMT alarms.
RTRV-ALM-SDCC	Retrieve current alarms of a section data communications channel.
RTRV-ALM-SML	Retrieve current alarms of an SML.
RTRV-ALM-STS1	Retrieve current alarms of an STS-1 path.
RTRV-ALM-SYNCN	Retrieve current alarms of the selected clock type.
RTRV-ALM-T1	Retrieve current alarms of a DS1.
RTRV-ALM-T3	Retrieve current alarms of a DS3.
RTRV-ALM-VT1	Retrieve current alarms of a VT1 path.
RTRV-ALM-X25	Retrieve current alarms of an X.25 protocol stack.
RTRV-ATTR-BITS	Retrieve attributes of the BITS clock indicators.
RTRV-ATTR-COM	Retrieve attributes of COMMON alarm indicators.
RTRV-ATTR-CONT	Retrieve alarm attributes and provisioning of an external control output (CDAC).

**Table A. 1603/12 SM Command Summary (Listed Alphabetically) (cont)**

<b>COMMAND</b>	<b>DESCRIPTION</b>
RTRV-ATTR-DLMAP	Retrieve DLMAP alarm attributes.
RTRV-ATTR-EC1	Retrieve attributes of EC1 alarm indicator(s).
RTRV-ATTR-EQPT	Retrieve alarm attributes of an equipment.
RTRV-ATTR-ENV	Retrieve alarm attributes and provisioning of an environmental alarm input (CDAC).
RTRV-ATTR-OC3	Retrieve attributes of OC-3 alarm indicator(s).
RTRV-ATTR-PORT	Retrieve alarm attributes of a port.
RTRV-ATTR-RMT	Retrieve attributes of alarm indicator(s) for RMT alarms.
RTRV-ATTR-SDCC	Retrieve attributes of section data communications channel alarm indicator(s).
RTRV-ATTR-SML	Retrieve attributes of SML alarm indicator(s).
RTRV-ATTR-STS1	Retrieve attributes of STS-1 path alarm indicator(s) of an equipment.
RTRV-ATTR-SYNCN	Retrieve the alarm attributes of the selected clock type.
RTRV-ATTR-T1	Retrieve attributes of DS1 alarm indicator(s).
RTRV-ATTR-T3	Retrieve attributes of DS3 alarm indicator(s).
RTRV-ATTR-VT1	Retrieve attributes of VT1 path alarm indicator(s).
RTRV-ATTR-X25	Retrieve attributes of X.25 protocol stack alarm indicator(s).
RTRV-BITS	Retrieve provisioning data associated with the BITS facility.
RTRV-CMD-STAT	Retrieve status of one or more previously input commands
RTRV-CNFGRN	Retrieve the current connectivity and entity state of a specified equipment unit.
RTRV-COND-BITS	Retrieve current condition of BITS alarm indicator(s).
RTRV-COND-COM	Retrieve current condition of COMMON alarm indicator(s).
RTRV-COND-DLMAP	Retrieve current conditions of data link map.
RTRV-COND-EC1	Retrieve current condition of alarm indicator(s) of an EC1 facility.
RTRV-COND-ENV	Retrieve current condition of alarm indicator(s) of an environmental alarm input (CDAC).
RTRV-COND-EQPT	Retrieve current condition of alarm indicator(s) of equipment specified.
RTRV-COND-OC3	Retrieve current condition of alarm indicator(s) of an OC-3 facility.
RTRV-COND-PORT	Retrieve current conditions of a port.
RTRV-COND-RMT	Retrieve local RMT conditions.
RTRV-COND-SDCC	Retrieve current condition of alarm indicator(s) of a section data communications channel facility.
RTRV-COND-SML	Retrieve current condition of alarm indicator(s) of an SML facility.

**Table A. 1603/12 SM Command Summary (Listed Alphabetically) (cont)**

<b>COMMAND</b>	<b>DESCRIPTION</b>
RTRV-COND-STS1	Retrieve current condition of alarm indicator(s) of an STS-1 path.
RTRV-COND-SYCN	Retrieve current condition of alarm indicator(s) for a selected clock type.
RTRV-COND-T1	Retrieve current condition of alarm indicator(s) of a DS1 facility.
RTRV-COND-T3	Retrieve current condition of alarm indicator(s) of a DS3 facility.
RTRV-COND-VT1	Retrieve current condition of alarm indicator(s) of a VT1 path.
RTRV-COND-X25	Retrieve current condition of alarm indicator(s) of an X.25 protocol stack.
RTRV-CRS-STS1	List one or more STS-1 connections.
RTRV-CRS-VT1	List one or more VT1.5/T1 connections.
RTRV-DLMAP	Retrieve network routing map data.
RTRV-E2AMAP	Retrieve the E2A map.
RTRV-EC1	Retrieve provisioning data associated with an EC1.
RTRV-EQPT	Retrieve provisioning data associated with an equipment.
RTRV-EXT-CONT	Retrieve operating status of an external control output (CDAC).
RTRV-FFP-OC3	Retrieve provisioning data associated with OC-3 facility protection switch.
RTRV-FFP-STS1	Retrieve provisioning data associated with STS-1 path protection switch.
RTRV-FFP-VT1	Retrieve provisioning data associated with VT1 path protection switch.
RTRV-HDR	Get NE header.
RTRV-INV-EQPT	Retrieve inventory data.
RTRV-LED	Retrieve LED status of equipment.
RTRV-LOG	Retrieve contents of message log.
RTRV-NE-ALL	Retrieve SPEMODE for the NE.
RTRV-OC3	Retrieve provisioning data associated with an OC-3.
RTRV-PM-EC1	Retrieve performance monitoring data of an EC1 facility.
RTRV-PM-EQPT	Retrieve performance monitoring data of an equipment.
RTRV-PM-OC3	Retrieve performance monitoring data of an OC-3 facility.
RTRV-PM-STS1	Retrieve performance monitoring data of an STS path.
RTRV-PM-SYCN	Retrieve performance monitoring data of the SYCN NE clock type.
RTRV-PM-T1	Retrieve performance monitoring data of a DS1 facility.
RTRV-PM-T3	Retrieve performance monitoring data of a DS3 facility.
RTRV-PM-VT1	Retrieve performance monitoring data of a VT1 path.

**Table A. 1603/12 SM Command Summary (Listed Alphabetically) (cont)**

<b>COMMAND</b>	<b>DESCRIPTION</b>
RTRV-PMMODE-EC1	Retrieve performance monitoring mode of an EC1 facility.
RTRV-PMMODE-EQPT	Retrieve performance monitoring mode of an equipment.
RTRV-PMMODE-OC3	Retrieve performance monitoring mode of an OC-3 facility.
RTRV-PMMODE-SYNCN	Retrieve performance monitoring mode of the NE clock type.
RTRV-PMMODE-T1	Retrieve performance monitoring mode of a DS1 facility.
RTRV-PMMODE-T3	Retrieve performance monitoring mode of a DS3 facility.
RTRV-PORT	Retrieve provisioning data associated with a port.
RTRV-PTHTRC-STS1	Retrieve tracer on an STS-1 facility.
RTRV-SDCC	Retrieve the provisioning data associated with the section data communications channel.
RTRV-SECU-CID	Retrieve security of a CID.
RTRV-SECU-CMD	Get security on a command.
RTRV-SECU-UPC	Get security user privilege code.
RTRV-SECU-USER	Get security on a user.
RTRV-SML	Retrieve provisioning data associated with an SML.
RTRV-STATUS	Retrieve list of users currently logged in.
RTRV-STS1	Retrieve provisioning data associated with an STS-1 path.
RTRV-SWVER-EQPT	Get software version.
RTRV-SYNCN	Retrieve reference list of the selected clock type.
RTRV-T1	Retrieve provisioning data associated with a DS1.
RTRV-T3	Retrieve provisioning data associated with a DS3.
RTRV-TH-EC1	Retrieve threshold level(s) for an EC1 facility.
RTRV-TH-OC3	Retrieve threshold level(s) for an OC-3 facility.
RTRV-TH-STS1	Retrieve threshold level(s) for an STS-1 path.
RTRV-TH-T1	Retrieve threshold level(s) for a DS1 facility.
RTRV-TH-T3	Retrieve threshold level(s) for a DS3 facility.
RTRV-TH-VT1	Retrieve threshold level(s) for a VT1 path.
RTRV-VT1	Retrieve provisioning data associated with a VT1 path.
RTRV-X25	Retrieve provisioning data associated with the X.25 stack.
SET-ACO-COM	Set the alarm cut-off mode for the ADM150 and all of its subunits.
SET-ATTR-BITS	Set attributes of BITS alarm indicator(s).
SET-ATTR-COM	Set attributes of COMMON alarm indicator(s).
SET-ATTR-CONT	Set attributes of an external control output (CDAC).
SET-ATTR-DLMAP	Set DLMAP alarm attributes.

**Table A. 1603/12 SM Command Summary (Listed Alphabetically) (cont)**

<b>COMMAND</b>	<b>DESCRIPTION</b>
SET-ATTR-EC1	Set attributes of alarm indicator(s) of an EC1.
SET-ATTR-ENV	Set attributes of an environmental alarm input (CDAC).
SET-ATTR-EQPT	Set attributes of alarm indicator(s) of an equipment.
SET-ATTR-OC3	Set attributes of alarm indicator(s) of an OC-3.
SET-ATTR-PORT	Set attributes of alarm indicator(s) of a port.
SET-ATTR-RMT	Set attributes of RMT alarm indicator(s).
SET-ATTR-SDCC	Set attributes of alarm indicator(s) of a section data communications channel.
SET-ATTR-SML	Set attributes of alarm indicator(s) of an SML.
SET-ATTR-STS1	Set attributes of alarm indicator(s) of an STS-1 path.
SET-ATTR-SYNCN	Set the alarm notification codes of the conditions of the selected clock type.
SET-ATTR-T1	Set attributes of alarm indicator(s) of a DS1.
SET-ATTR-T3	Set attributes of alarm indicator(s) of a DS3.
SET-ATTR-VT1	Set attributes of alarm indicator(s) of a VT1 path.
SET-ATTR-X25	Set attributes of alarm indicator(s) of an X.25 protocol stack.
SET-DAT	Set system date and time.
SET-E2ADISP	Set the E2A local display address.
SET-NE-ALL	Set SPEMODE for the NE.
SET-PMMODE-EC1	Set performance monitoring mode of an EC1.
SET-PMMODE-EQPT	Set performance monitoring mode of an equipment.
SET-PMMODE-OC3	Set performance monitoring mode of an OC-3.
SET-PMMODE-SYNCN	Set performance monitoring mode of the SYNCN NE clock type.
SET-PMMODE-T1	Set performance monitoring mode of a DS1.
SET-PMMODE-T3	Set performance monitoring mode of a DS3.
SET-PTHTRC-NE	Set our NE SONET tracer.
SET-SYNCN	Set synchronization mode (for NE clock type only) and the sync switch mode (immediately/delay) of the selected clock type.
SET-TH-EC1	Set threshold level(s) of an EC1 facility.
SET-TH-OC3	Set threshold level(s) of an OC-3 facility.
SET-TH-STS1	Set threshold level(s) of an STS-1 path.
SET-TH-T1	Set threshold level(s) of a DS1 facility.
SET-TH-T3	Set threshold level(s) of a DS3 facility.
SET-TH-VT1	Set threshold level(s) of a VT1 path.
SW-DX-EQPT	Switch duplex for an equipment.

**Table A. 1603/12 SM Command Summary (Listed Alphabetically) (cont)**

<b>COMMAND</b>	<b>DESCRIPTION</b>
SW-TOPROTN-EQPT	Switch EQPT to protection unit.
SW-TOWKG-EQPT	Switch EQPT back to working line.

## LOCAL ACCESS

The basic means for locally interfacing with the 1603/12 SM system is provided by the COA30X or COA40X Craft, Orderwire, and Alarm plug-in unit (COA). On the front panel of the COA is a 9-pin subminiature D connector (marked "USI") which serves as the CRAFT1 (RS-232) access port. Figure 1, Page 2, illustrates the pin configuration of the connector. If desired, a 9-pin to 25-pin translation cable (601229-540-072) can be ordered. For a more permanent connection, a second craft port with wire-wrap pins is available on the shelf backplane (see Remote Access below).

To initially access the COA, a Visual Display Terminal (VDT) (ASCII monitor and keyboard) is required. A Personal Computer (PC) with a terminal emulator program may be used instead. The terminal must be capable of satisfying the following default communications parameters:

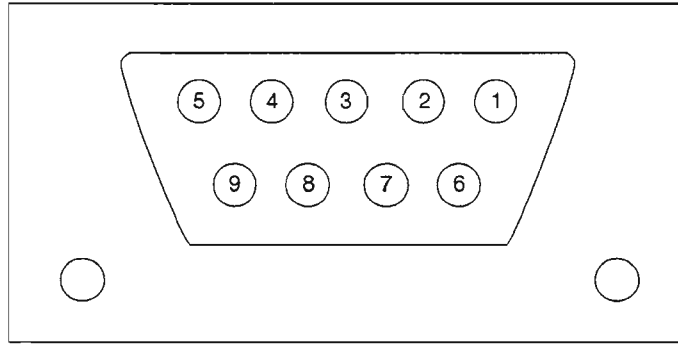
Baud rate:	9600
Number of bits:	8
Parity:	None
Stop bits:	1
Line width (characters):	80

When the user has accessed the COA, it is possible to change the baud rate to one of the following: 300, 1200, 2400, 4800, 9600, AUTO\_BAUD. However, a baud rate change does not take effect until **after** the user logs off and logs back onto the NE. To regain access, the VDT must be reset to the new parameters.

## REMOTE ACCESS

There are two methods for remotely logging onto an NE. One method is via a modem connected to the RS-232 wire-wrap pins on the shelf backplane. This port is called the CRAFT2 port and requires the COA301 or COA401 plug-in unit to be used. As far as the NE is concerned, this is a second local craft port. The CRAFT2 port could be wired to a VDT instead of a modem for a permanent local craft interface.

The second method of remotely logging onto an NE allows a user to be connected to one NE (the local NE) and request a login session on another NE (the remote NE). The user specifies the Terminal Identifier (tid) of the remote NE when logging in, and the session is established over the SONET embedded communication channel between the local and remote NEs.



PIN NUMBER	DESCRIPTION
1	DCD
2	RXD
3	TXD
4	DTR
5	SGND
6	DSR
7	RTS
8	CTS
9	OPTIONAL

FRONT VIEW

A5627

Figure 1. COA30X or COA40X USI RS-232 Connector, Front View

## E2A INTERFACE

The COA302 or COA402 has only one craft interface, but it does provide a second interface for serial E2A. Like the COA301 or COA401, this port is accessed via the wire-wrap pins on the shelf backplane. The interface is a differential RS-422 type (TBOS protocol).

ISSUE 2	OCT 1994
ALCL 363-203-502	TNG
PAGE 2 of 6	503



# LOGGING ON

A user-ID (login name) and password are required to log onto the NE. Use either the system default login/password or the login/password assigned by the System Administrator (see TNG-510). To gain access to the system, the following sequence must be performed:

1. Connect the VDT or PC to the COA craftport by using an RS-232 cable.
2. Turn on the VDT or run the Terminal Emulation program if using a PC.
3. Log onto the local or remote NE by one of the two methods that follow:

## Log Directly onto NE

Enter the following command to log directly onto the NE:

**ACT-USER:[tid]:uid:[ctag]::pid;**

where:

tid = Name of NE you wish to log onto (defaults to local NE if not entered)  
uid = User-ID (login or logname)  
ctag = Correlation tag (not required)  
pid = Password

## Log onto NE by Using Prompt Mode

- Press the ENTER or carriage return <cr> key several times until the <tid> prompt appears.
  - If you are logging onto the local NE, press <cr> key to get next prompt. If you wish to log onto a remote NE, enter the NE's Terminal Identification (TID) code followed by a <cr>.
  - At the USERNAME prompt, enter the User-ID code followed by a <cr>.
  - At the PASSWORD prompt, enter the password assigned to the User-ID.
4. The system prompt (<) will appear if a successful login session is established.

## COMMAND ENTRY

Once the username and password have been entered, the following display with a HELP MENU appears on the screen and/or printer:

```
1603SM 70-01-01 00:00:03
M 0 CMLD
/* ACT-USER */
/*
/*          NOTICE: This is a private computer system
/*          Unauthorized access or use may lead to prosecution
/*
/*          1 User(s) Logged On */
;
<
/*          HELP MENU

HELP          or      ?      Type HELP or ? for this menu.
MENU          or      'AB'   Type MENU or menu mode.
<UP ARROW>   or      'AN'   Recall previous commands.
<DOWN ARROW> or      'AD'   Recall successive commands.
<LEFT ARROW> or      'AF'   Move cursor left one space.
<RIGHT ARROW> or     'AX'   Move cursor right one space.
<CAN>        or      'AH'   Reset command input processing.
<BS>         or
<DEL>        or
Restart current line input. */
```

Other useful control codes not listed are:

- '^A'            go to the beginning of the line
- '^E'            go to the end of the line

Once logged on, the user can operate in any one of three dialog modes: command, prompt, and menu. The command mode is intended for the experienced user who enters the entire command before pressing the ENTER (<cr>) key. However, the command processor reverts to the prompt mode if the entry is incomplete. The prompt mode steps the user through a series of question prompts and provides option listings for parameter entry. The command processor builds the command as the prompts are answered. The prompt mode is intended for the average or semi-experienced user. The menu mode is for least experienced user and provides the highest level of user assistance. In this mode, menus are provided for the user to select from. To enter the menu mode, type "menu" (without the quotations) at the system prompt.

ISSUE 2	OCT 1994
ALCL 363-203-502	TNG
PAGE 4 of 6	503

# CONVENTIONS USED IN THIS MANUAL FOR ENTERING COMMANDS

To distinguish commands from normal text, the commands are printed in bold type as shown below:

**RTRV-OC3:[tid]:LG1-HIFA:[ctag];**

In the example command, the square brackets [ ] are not actually entered but are used to indicate that the enclosed parameter is optional. Generally, optional parameters enclosed in brackets have default values that are used by the command processor if you choose not to enter the parameter. If you are using the prompt or menu modes to enter the command, the default value is typically shown in brackets also.

As a general convention throughout this manual, command entries are shown with a mixture of uppercase and lowercase character strings. The uppercase character string signifies that the string is entered exactly as shown. The lowercase character string identifies that the input is not entered as shown, but relates to a value determined by the context of the command; i.e., the lowercase character string is substituted by a value that depends on the intent of the user. As an example, in the command shown below, INIT-LOG is entered as shown, but the parameters *tid*, *ctag*, and *logms* are replaced by entries to provide the command processor with information needed to properly execute the command:

**INIT-LOG:[tid]:[ctag]:logms;**

(example command structure as shown in manual)

**INIT-LOG:1603\_MAINOFFICE::1::EERLOG;**

(example of how command might actually be entered)

Command Code	tid	ctag	logms
--------------	-----	------	-------

The example below shows where both uppercase and lowercase character strings are used in one parameter (dgx-DMI-path):

**RTRV-T1:[tid]:dgx-DMI-path:[ctag];**

(example command structure as shown in manual)

**RTRV-T1:1603\_MAINOFFICE:DG1-DMI-1;;**

(example of how command might actually be entered)

Command Code	tid	dgx	path	ctag (null)
--------------	-----	-----	------	-------------

In the preceding example, DG1 represents Drop Group No. 1 and 1 represents path number 1. In this example, the *ctag* parameter was omitted, which tells the command processor to use the default value. In both examples, the optional *tid* parameter was entered as 1603\_MAINOFFICE which is the (optional) Terminal Identifier (or network name) of the example NE. All output responses and messages for this NE will include this identifier whether or not the *tid* is included in the command input.

The parameters *tid* and *ctag* are available for every command in the 1603/12 SM command language. These two common parameters are optional and typically are not used, unless the user is sending and receiving commands/messages to one NE while logged onto another. Because of this, and for brevity, these parameters are not defined along with the other command parameters in the Detailed Level Procedures (DLPs) of this manual. For a definition of these parameters, see TNG-501 (Command Structure).

## LOGGING OFF

To terminate the craft session, enter either of the following commands:

**LOGOFF** (non TL-1 command also used on earlier SONET products)

-or-

**CANC-USER:[tid]:[uid]:[ctag];**

where:

*tid* = Name of NE to log onto (defaults to local NE if not entered)

*uid* = User-ID (login or logname)

*ctag* = Correlation tag (not required)

ISSUE 2	OCT 1994
ALCL 363-203-502	TNG
PAGE 6 of 6	503

**NOTE** Use this section as a worksheet to record optical performance measurements obtained in DLP-013 for the 1603/12 SM HIFXXX plug-ins. Make copies of Chart 1 on Page 2 to use in recording the measurements for each 1603/12 SM Network Element. Table A provides the specifications from DLP-013 that the HIFXXX must meet. These specifications are listed in the 1603/12 SM Product Information Manual (650205-823-001) General System Description Section (ALCL 363-203-100).

**Table A. HIFXXX Plug-in Optical Performance Specifications**

HIF Type	Transmitter Output Power (TOP) (dBm)		Guaranteed Receiver Sensitivity (dBm)
	Minimum	Maximum	
HIF101	-15.0	-5.4	-33.0
HIF102	-15.0	-5.4	-33.0
HIF501	- 4.5	+4.6	-33.0
HIF502	- 4.5	+4.6	-33.0

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 1 of 2	504

DATE: \_\_\_\_\_

TESTER: \_\_\_\_\_

SITE NAME: \_\_\_\_\_

DLMAP NAME (NETID): \_\_\_\_\_

**CHART 1 – RECORD HIFXXX OPTICAL MEASUREMENTS**

Recorded Parameters	Step No.*	Line Group 1		Line Group 2	
		HIF-A	HIF-B	HIF-A	HIF-B
HIF Type (unit mnemonic)	--				
Minimum TOP (dBm) (from Table A)	--				
Maximum TOP (dBm) (from Table A)	--				
Measured AETOP (dBm)	20				
Passed RCVR Sensitivity Test (YES or NO)	29				
Passed $10^{-10}$ BIT ERR Test (YES or NO)	42				
RCVR Fail Level (dBm) (DGBER threshold)	47				
Level from Far-end NE (dBm)	51				
Calculated Operating Margin (dB) (Step 52 minus Step 48)	52				
Unit Serial Number (RTRV-INV-EQPT cmd)	59				
Unit Serial Number of Far-end HIF (if available)	60				

\* These steps are from DLP-013

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 2 of 2	504

**RECORD HIFXXX OPTICAL MEASUREMENTS**

## GENERAL

This section provides the telephone numbers, fax numbers and mailing addresses for the key customer support groups at Alcatel Network Systems.

Page 2 lists the telephone and fax numbers, as well as a summary of which support groups are associated with each department.

Page 3 lists the mailing addresses and notes concerning contacts.

Page 4 summarizes the Alcatel Repair and Return procedure for defective material, whether in or out of the equipment warranty period.

Page 5 provides Repair and Return Notes that answer some of the typical questions in returning equipment for repair.

## HOTLINE AND FAX NUMBERS

FOR HELP WITH....	CALL OUR HOTLINE	OR	FAX IT
<i>Order Administration</i>			1-214-996-6231
Bell Operating Companies	1-214-996-6136 1-214-996-6138 1-214-996-5230 1-214-996-5911		
Independent Telephone Companies	1-214-996-6136		
Industrial Companies	1-214-996-6136		
Railroads	1-214-996-5911		
Pipeline Companies	1-214-996-5911		
Specialized Common Carriers	1-214-996-5630		
Government Customers	1-214-996-5230		
International Customers	1-214-996-5557		
Warranty Administration	1-214-996-5936		
<i>Technical Support</i> <i>(1603 / 12 SM)</i>	1-800-767-6500		1-919-850-6116
Customer Training Technical Services Installation			
<i>Customer Documentation</i>	1-919-850-6365		1-919-850-5131
<i>Repair and Return</i>			
Scheduled or Emergency Replacement (weekdays)	1-919-850-6202		1-919-850-6361
Nights and Weekends	1-800-553-4084		

ISSUE 2	OCT 1994
ALCL 363-203-502	TNG
PAGE 2 of 5	505



## MAILING ADDRESSES

To correspond with Technical Support or Customer Documentation, the address is:

**Alcatel Network Systems  
2912 Wake Forest Road  
Raleigh, NC 27609**

Address your correspondence or package to the attention of the applicable group.

For Repair and Return related matters, address written correspondence and purchase orders to:

**Alcatel Network Systems  
1212 Front Street  
Raleigh, NC 27609**

**Attn: Repair and Return**

If returning defective material, follow the Repair and Return procedures on Page 4.

For correspondence pertaining to order entry matters, the address is:

**Alcatel Network Systems  
Mail Station 412-210  
1225 North Alma Road  
Richardson, TX 75081**

**Attn: Order Entry**

## CUSTOMER FEEDBACK

Alcatel Network Systems is committed to meeting customer requirements. Comments and suggestions are encouraged, and may be directly telephoned to:

**1-800-877-6060** (extension 6365)

## CUSTOMER ASSISTANCE (HELP) CONTACTS

ISSUE 2	OCT 1994
ALCL 363-203-502	TNG
PAGE 3 of 5	505

## REPAIR AND RETURN PROCEDURE

5. Verify that any material returned to Alcatel for repair contains the following:
  - a. Customer name and complete address;
  - b. Name(s) and telephone number(s) of the company employee(s) to contact in case of questions about the return;
  - c. Ship-to address for return of repaired material, if different from (a);
  - d. Billing address for repaired material, if different from (a);
  - e. Complete list and descriptions of material returned, including any part number/material description;
  - f. Nature or defect or failure, if known;
  - g. Customer purchase order number for repair; and,
  - h. Alcatel Material Return Authorization (MRA) number, if already preassigned. However, for normal repair, it is not necessary to procure an advance MRA number.
  
6. Forward defective material to the following address:

**Alcatel Network Systems  
1212 Front Street  
Raleigh, NC 27609**

**Attn: Repair and Return**

ISSUE 2	OCT 1994
ALCL 363-203-502	TNG
PAGE 4 of 5	505

## REPAIR AND RETURN NOTES

1. Material that is not economically repairable or is expendable should NOT be returned for repair.
2. Alcatel will provide, when contacted by a Company, any necessary special packaging information for material to provide adequate in-transit protection from shipping damage.
3. Material repaired by Alcatel will have the repair date code permanently affixed to the material. The repaired material will be returned with a tag or other papers describing the repairs which have been made. Identification tags affixed by the customer will not be removed by Alcatel.
4. Requests for emergency repair service or questions regarding repair and return procedures should be made to the Repair and Return department via the telephone and fax numbers on Page 2.
5. The Repair and Return procedure may be modified by the customer to best suit the customer's particular operating procedures, as long as the basic requirements (listed on Page 4) are satisfied.
6. ***WARNING: Most Alcatel plug-in units and powered equipment contain static-sensitive devices. Before handling or packaging such devices, review DLP-001.***



## MANUAL

## DESCRIPTION

Product Information  
Alcatel Part Number  
650205-823-001

Provides general descriptions, applications, engineering information, and ordering guide for the 1603/12 SM product, as well as information concerning ancillary equipment.

Commands and Messages  
Alcatel Part Number  
650205-823-022

Provides reference information and detailed explanations for all product-specific commands and messages. This manual is designed to assist the craftsperson in working with TL-1, dumb terminals and volumes such as the Turn-up and Administration manual and the Maintenance and Trouble Clearing manual.

Installation  
Alcatel Part Number  
650205-823-003

Provides step procedure instructions for unpacking, inspection, assembling, mounting, and wiring bays, shelves, ancillary items and cabling.

Turn-up and Administration  
Alcatel Part Number  
650205-823-014

Provides Task Oriented Procedures (TOPs) for optioning and installing plug-ins, provisioning the system, turning up circuits and ancillary items, and testing the equipment to ensure it is operating correctly and is traffic-ready, using TL-1 and dumb terminals.

Maintenance  
and Trouble Clearing  
(using dumb terminals)  
Alcatel Part Number  
650205-823-015

Provides Task Oriented Procedures (TOPs) for routine maintenance and trouble clearing to the plug-in unit level using TL-1 and dumb terminals.

Support Documentation  
Alcatel Part Number  
650205-823-006

Provides selected schematics and wiring diagrams as reference for support maintenance of non-returnable items.

1301 NM for 1603/12 SM  
User's Guide  
Alcatel Part Number  
650205-823-007

Provides descriptions of menus and screens for the 1603/12 SM using 1301 NM (PC USI).

Turn-up and Administration  
(using PC and 1301 NM)  
Alcatel Part Number  
650205-823-008

Provides Task Oriented Procedures (TOPs) using 1301 NM (PC USI) for optioning and installing plug-ins, provisioning the system, turning up circuits, and testing the equipment to ensure it is ready for service.

Maintenance and  
Trouble Clearing  
(using PC and 1301 NM)  
Alcatel Part Number  
650205-823-009

Provides Task Oriented (TOPs) using 1301 NM (PC USI) for routine maintenance and trouble clearing to the plug-in level.



# GENERAL

The 1603/12 SM automatically reports system status and alarm information to the craft port by autonomous messages. Autonomous messages are generated by the system when alarm conditions are detected and cleared., and are also reported for certain non-alarmed events. Autonomous messages are reported in real-time as they occur. The types of autonomous messages reported by the 1603/12 SM are categorized as follows:

<b>ALM</b>	Alarmed
<b>EVT</b>	Event
<b>PM</b>	Performance Monitor report
<b>RMV</b>	Remove (entity placed in OOS-MT maintenance state)
<b>RST</b>	Restore (entity returned to In-Service state from OOS-MT)
<b>SW</b>	Switch (entity has switched to/from protection)

Table A, Page 4, is a summary of the autonomous messages. Event autonomous messages are nonretrievable. However, autonomous messages are saved in a message log which can be retrieved by using the RTRV-LOG TL-1 command. Current alarm conditions can be retrieved at any time by using the RTRV-ALM-xxx and RTRV-COND-xxx TL-1 command, where "xxx" is the entity (condition type) of interest.

The alarms, conditions and events reported by the 1603/12 SM are grouped by condition type and are listed in the following tables:

<u>Condition Type</u>	<u>Description</u>	<u>Table-Page</u>
<b>COM</b> .....	NE Common alarms .....	B-6
<b>DLMAP</b> .....	Data Link Map .....	C-7
<b>ENV (CDAC)</b> .....	Env. alarm inputs (customer-defined) .....	D-8
<b>EQPT (CLK)</b> .....	CLK20X plug-in .....	E-9
<b>EQPT (COA)</b> .....	COAXXX plug-in .....	F-10
<b>EQPT (DMI)</b> .....	DMI102 plug-in .....	G-11
<b>EQPT (HIF)</b> .....	HIFXXX plug-in .....	H-12
<b>EQPT (LIF)</b> .....	LIFX01 plug-in .....	I-14
<b>EQPT (LDR)</b> .....	LDRX01 plug-in .....	J-15
<b>EQPT (NEP)</b> .....	NEP301 plug-in .....	K-16
<b>EQPT (PWR)</b> .....	PWRX01 plug-in .....	L-17
<b>EQPT (VSCC)</b> .....	VSCCXXX plug-in .....	M-18
<b>EQPT (VTG)</b> .....	VTG101 plug-in .....	N-19
<b>BITS</b> .....	BITS facility (input) .....	O-20
<b>EC1</b> .....	EC1 facility .....	P-21
<b>OC3</b> .....	OC-3 Facility (HIF) .....	Q-22
<b>T1 (DS1)</b> .....	DS1 facility .....	R-24
<b>T3 (DS3)</b> .....	DS3 facility .....	S-25
<b>PORT</b> .....	CRAFT1, CRAFT2 SE2A, and X.25 port .....	T-26
<b>RMT</b> .....	Remote NE .....	T-26

<b>ISSUE 3</b>	<b>OCT 1994</b>
<b>ALCL 363-203-502</b>	<b>TNG</b>
<b>PAGE 1 of 36</b>	<b>507</b>

<u>Condition Type</u>	<u>Description</u>	<u>Table-Page</u>
SDCC .....	Section Data Communications Channel .....	T-26
SML .....	Synchronous Maintenance Link facility .....	T-26
X25 .....	X.25 protocol stack .....	T-26
STS1 .....	STS-1 path .....	U-27
SYNCRN (NESYNCR) ..	NE Sync sources .....	V-31
SYNCRN (BITSSYNCR)	BITS Sync output .....	W-33
VT1 .....	VT1 path .....	X-34

The following information is provided in these tables for the alarms, conditions and events:

**SRVCE AFFCTG (ACTIVE)** – Describes when the condition is Service Affecting (SA) or Non-Service Affecting (NSA) for the active side. The condition on the standby side is always nonservice-affecting.

**DEFAULT NTFNCNCDE ACT/STBY** – The alarm default notification code (alarm level attribute) is given for the alarm condition. The notification code is shown for the active (ACT) and standby (STBY) sides of the equipment or facility. If the entity is not duplex, only the active notification code is applicable. The alarm notification codes are:

<b>CR</b>	Critical Alarm
<b>MJ</b>	Major Alarm
<b>MN</b>	Minor Alarm
<b>NA</b>	Not Alarmed; reported as an event
<b>NR</b>	Not Reported

The default notification codes are provided per alarm condition. The notification code of the alarm condition may be changed, if allowed, by the SET-ATTR-xxx command for that entity. If “Event” or “Condition” is listed in the default notification column, the notification code cannot be changed for the alarm condition. When Event is indicated, it is reported as an event only by a REPT EVT autonomous message. When Condition is indicated, it is not reported and must be retrieved using the RTRV-COND-xxx command for that entity.

If the notification code for an entity is CR, MJ or MN, an alarm autonomous message (REPT-ALM) will be reported for a change in the alarm condition’s state if the entity is in service (primary state = IS). The reporting of changes in an alarm condition is suppressed if the primary state of the entity is Out-Of-Service for Memory Administration (OOS-MA) or Maintenance (OOS-MT). The CR, MJ and MN alarm lamps on the COA plug-in unit are also affected in the same way. The LEDs will not reflect changes in an entity’s alarm condition until the entity is placed back in service. The current state of the alarm can be retrieved at any time using the RTRV-ALM-xxx or RTRV-COND-xxx command for the entity.

If the notification code for an entity is NR (Not Reported), changing of the alarm condition is not reported either by autonomous message or COA alarm indicator. However, if the alarm condition is active (standing condition), the RTRV-COND-xxx command for that entity will report the condition.

ISSUE 3	OCT 1994
ALCL 363-203-502	TNG
PAGE 2 of 36	507



If the notification code for an alarm condition is NA (Not Alarmed), changing of the alarm condition's state is reported by an REPT-EVT autonomous message and is not considered alarmed when active. If the alarm condition is active (standing condition), the RTRV-COND-xxx command for that entity will report the condition.

**DESCRIPTION** – Brief text description of the condition. For default values and provisionable ranges of Threshold Crossing Alert (TCA) alarms, see TNG-510.

**LED** – The plug-in unit LED that is lighted by the alarm condition, if applicable. Unless otherwise noted, the LED is on the plug-in unit that is alarmed or on the plug-in unit that terminates the facility or traffic path that is alarmed.

**SERIAL E2A BIT** – The Serial E2A bit that is provided for TBOS alarm processing remote systems, if applicable. Refer to Appendix C – TBOS Tables (ALCL 363-203-108) in the 1603/12 SM Product Information manual (650205-823-001) for the alarm/status bit map table for TBOS output.

**Table A. 1603/12 SM Autonomous Messages Summary**

<b>MESSAGE</b>	<b>DESCRIPTION</b>
REPT ALM BITS	Report alarm associated with a BITS facility.
REPT ALM COM	Report alarm associated with COMMON equipment/NE.
REPT ALM DLMAP	Report alarm associated with connection or DLMAP misprovisioning.
REPT ALM EC1	Report alarm associated with an EC1 facility.
REPT ALM EQPT	Report alarm associated with an equipment.
REPT ALM ENV	Report alarm associated with an environmental alarm input.
REPT ALM OC3	Report alarm associated with an OC-3 facility.
REPT ALM PORT	Report alarm associated with a port.
REPT ALM RMT	Report alarm associated with a remote NE.
REPT ALM SDCC	Report alarm associated with a section data communications channel.
REPT ALM SML	Report alarm associated with an SML facility.
REPT ALM STS1	Report alarm associated with an STS-1 path.
REPT ALM SYNCN	Report alarm associated with synchronization.
REPT ALM T1	Report alarm associated with a DS1 facility.
REPT ALM T3	Report alarm associated with a DS3 facility.
REPT ALM VT1	Report alarm associated with a VT1 path.
REPT ALM X25	Report alarm associated with X.25 protocol stack.
REPT EVT BITS	Report event associated with a BITS facility.
REPT EVT COM	Report event associated with COMMON equipment/NE.
REPT EVT DLMAP	Report event associated with a connection or DLMAP misprovisioning.
REPT EVT EC1	Report event associated with an EC1 facility.
REPT EVT EQPT	Report event associated with an equipment.
REPT EVT OC3	Report event associated with an OC-3.
REPT EVT PORT	Report event associated with a port.
REPT EVT RMT	Report event associated with a remote NE.
REPT EVT SDCC	Report event associated with a section data communications channel.
REPT EVT SML	Report event associated with an SML facility.
REPT EVT STS1	Report event associated with an STS-1 path.
REPT EVT SYNCN	Report event associated with synchronization.
REPT EVT T1	Report event associated with a DS1.
REPT EVT T3	Report event associated with a DS3.
REPT EVT VT1	Report event associated with a VT1 path.

**Table A. 1603/12 SM Autonomous Messages Summary (cont)**

<b>MESSAGE</b>	<b>DESCRIPTION</b>
REPT EVT X25	Report alarm associated with X.25 protocol stack.
REPT PM EC1	Report scheduled performance monitoring data associated with an EC1 facility.
REPT PM EQPT	Report scheduled performance monitoring data associated with an equipment.
REPT PM OC3	Report scheduled performance monitoring data associated with an OC-3 facility.
REPT PM STS1	Report scheduled performance monitoring data associated with an STS-1 path.
REPT PM SYNCN	Report scheduled performance monitoring data associated with a SYNCN NE clock type.
REPT PM T1	Report scheduled performance monitoring data associated with a DS1 facility.
REPT PM T3	Report scheduled performance monitoring data associated with a DS3 facility.
REPT PM VT1	Report scheduled performance monitoring data associated with a VT1 path.
REPT RMV BITS	Report removal from service for a BITS facility.
REPT RMV EC1	Report removal from service for an EC1 facility.
REPT RMV EQPT	Report removal from service for an equipment.
REPT RMV OC3	Report removal from service for an OC-3 facility.
REPT RMV SML	Report removal from service for an SML facility.
REPT RMV T1	Report removal from service for a DS1 facility.
REPT RMV T3	Report removal from service for a DS3 facility.
REPT RST BITS	Report restoral to service for a BITS facility.
REPT RST EC1	Report restoral to service for an EC1 facility.
REPT RST EQPT	Report restoral to service for an equipment.
REPT RST OC3	Report restoral to service for an OC-3 facility.
REPT RST SML	Report restoral to service for an SML facility.
REPT RST T1	Report restoral to service for a DS1 facility.
REPT RST T3	Report restoral to service for a DS3 facility.
REPT SW	Report switch (duplex, protection, or synchronization reference) and the reason for switching.

**Table B. Common Equipment/NE**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
CNFRNERR	NSA	MN	Ring line group configuration error	ABN (NEP)	53
FA	NSA	MN	Fuse alarm	—	13
FANALM	NSA	MN	Fan alarm	—	14
LOGBUFR90-SYSTEM	NSA	NA	System log buffer 90% full	—	—
LOGBUFROVFL-SYSTEM	NSA	NA	System log buffer overflow	—	—
LOGBUFR90-SECURITY	NSA	NA	Security log buffer 90% full	—	—
LOGBUFROVFL-SECURITY	NSA	NA	Security log buffer overflow	—	—
PWRF-48VA*	NSA	MN	Power fail -48V A	—	—
PWRF-48VB*	NSA	MN	Power fail -48V B	—	—
SECUINTRU	NSA	MN	Security intrusion	—	—
BUFROVLD	—	Event	Session overload	—	—
CAMRBU-FROVFL	—	Event	CAMR buffer overflow	—	—
OSDRPMSG	—	Event	Dropping messages at the Gateway Network Element	—	—
PROCROVLD	—	Event	Processor overload	—	—
INHMSG	—	Condition	All autonomous messages inhibited	—	—
INHMSG-CR	—	Condition	Critical autonomous messages inhibited	—	—
INHMSG-MJ	—	Condition	Major autonomous messages inhibited	—	—
INHMSG-MN	—	Condition	Minor autonomous messages inhibited	—	—
INHMSG-NA	—	Condition	Not alarmed autonomous messages inhibited	—	—
ACODELD	—	Condition	Alarm cut-off, delayed	—	—
ACOIMED	—	Condition	Alarm cut-off, immediate	—	—
ACOMAN	—	Condition	Alarm cut-off, manual	—	—

\* Requires COA40X or later unit.

**Table B. Common Equipment/NE (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
ACOACT	—	Condition	Alarm cut-off, active	—	—
TM	—	Condition	NE type: Terminal Multiplexer	—	—
ADM	—	Condition	NE type: Add/Drop Multiplexer	—	—
LINEAR	—	Condition	NE supports line operation only	—	—
RING	—	Condition	NE supports line and ring operation	—	—

**Table C. DLMAP**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
E2ACONN	NSA	MN	E2A gateway/connection failure	—	—
E2APROV	NSA	MN	E2A misprovisioned	—	—
CDACCONN	NSA	MN	CDAC connection failure	—	—
CDACPROV	NSA	MN	CDAC misprovisioned	—	—
FEAPROV	NSA	MN	Far end alarm misprovisioned	—	—
RMTCONN	NSA	MN	Remote connection failure	—	—

**Table D. ENV (CDAC Environmental Alarm Inputs)**

<b>ALARM CONDITION</b>	<b>SRVCE- AFFCTG (ACTIVE)</b>	<b>DEFAULT NTFCNCDE ACT/STBY</b>	<b>DESCRIPTION</b>	<b>LED</b>	<b>SERIAL E2A BIT</b>
(ENV-1)	NSA	MN	ENV alarm input #1	—	1
(ENV-2)	NSA	MN	ENV alarm input #2	—	2
(ENV-3)	NSA	MN	ENV alarm input #3	—	3
(ENV-4)	NSA	MN	ENV alarm input #4	—	4
(ENV-5)	NSA	MN	ENV alarm input #5	—	5
(ENV-6)	NSA	MN	ENV alarm input #6	—	6
(ENV-7)	NSA	MN	ENV alarm input #7	—	7
(ENV-8)	NSA	MN	ENV alarm input #8	—	8
(ENV-9)	NSA	MN	ENV alarm input #9	—	9
(ENV-10)	NSA	MN	ENV alarm input #10	—	10
(ENV-11)	NSA	MN	ENV alarm input #11	—	11
(ENV-12)	NSA	MN	ENV alarm input #12	—	12

**Table E. Equipment: CLK Unit**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
CNTBUS	NSA	MN/MN	Standby eqpt reflect test fail	ALM	16
CONTCOM	NSA	MN/MN	Control comm failure	ALM	16
FAILTOSW	SA	MJ/MN	Fail to switch	—	15
IMPROPRMVL	SA	MJ/MN	Improper removal	—	15
INH DGN	NSA	MN/MN	Inhibit diagnostics	—	—
INH PMREPT	NSA	NR/NR	Inhibit PM report	—	—
INH SWDX	NSA	MN/MN	Inhibit switch duplex	ABN (NEP)	53
INT	SA	MJ/MN	Internal hardware fault	ALM	15
INVERR	NSA	MN/MN	Inventory error	ALM	16
MEA	NSA	MN/MN	Mismatch of equipment and attributes	—	—
MTCE	NSA	MN/MN	Remove from service for maintenance	ABN (NEP)	53
PLLEOR	NSA	MN/MN	PPL end of range	ALM	16
SYNCCLK	NSA	MN/MN	Crossover clock alarm	ALM	16
AUTORESET	—	Event	Automatic reset	—	—
AUTOSW	—	Event	Automatic switch	—	—
EQUIP	—	Event	Clock is equipped	—	—
MANSW	—	Event	Manual switch	—	—
UNASSIGN	—	Event	Clock is unassigned	—	—
UNEQUIP	—	Event	Clock is unequipped	—	—
ACT	—	Condition	Unit is active	—	—
STBY	—	Condition	Unit is standby	—	—

**Table F. Equipment: COA Unit**

<b>ALARM CONDITION</b>	<b>SRVCE- AFFCTG (ACTIVE)</b>	<b>DEFAULT NTFCNCDE ACT/STBY</b>	<b>DESCRIPTION</b>	<b>LED</b>	<b>SERIAL E2A BIT</b>
BKUPMEMP	NSA	MN	EEPROM failure	ALM	18
CONTCOM	NSA	MN	Control comm failure	ALM	19
CNTBUS	NSA	MN	Standby eqpt reflect test fail	ALM	19
IMPROPRMVL	NSA	MJ	Improper removal	—	19
INHDBGN	NSA	MN	Inhibit diagnostics	—	—
INT	NSA	MN	Internal hardware fault	ALM	19
INVERR	NSA	MN	Inventory error	—	19
MEA	NSA	MN	Mismatch of equipment and attributes	—	—
MEMCHK	NSA	MN	Memory checksum error	—	18
MEMDIF	NSA	MN	Data base mismatch between WKG and PRI	—	18
MEMDIFTRAN	NSA	MN	Data base mismatch between WKG and PRI after successful conversion	—	18
MEMVER	NSA	MN	Data base version mismatch between WKG and PRI	—	18
MTCE	NSA	MN	Remove from service for maintenance	ABN (NEP)	53
AUTORESET	—	Event	Automatic reset	—	—
DBCONVERR	—	Event	Data base conversion error	—	—
EQUIP	—	Event	COA is equipped	—	—
UNEQUIP	—	Event	Clock is unequipped	—	—



**Table G. Equipment: DMI Unit**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
BOOT	SA	MJ/MN	Processor is running boot code	ABN (NEP)	53
BUERR	SA	CR/MN	STS-1** B2 excessive errors	ALM	24
CNTBUS	NSA	CR/MN	Standby eqpt reflect test fail	ALM	27
CONTBUS	NSA	CR/MN	Control bus failure	ALM	27
CONTCOM	NSA	CR/MN	Control comm failure	—	—
CONTEQPT	SA	CR/MN	Switch test fail	ALM	24
CONTRDUP	NSA	MJ/MN	Act – Stdby DMI link fail	—	—
CTNEQPT	SA	CR/MN	STS-1** interconnection eqpt failure	ALM	24
FAILTOSW	SA	MJ/MN	Fail to switch	—	36
IMPROPRMVL	SA	MJ/MN	Improper removal	—	24
INHDBGN	NSA	MN/MN	Inhibit diagnostics	—	—
INHMPREPT	NSA	NR/NR	Inhibit PM report	—	—
INHSWDX	NSA	MN/MN	Inhibit switch	ABN (NEP)	53 & 42
INT	SA	CR/MN	Internal hardware failure	ALM	24
INVERR	NSA	MJ/MN	Inventory error	ALM	27
MEA	NSA	MN/MN	Mismatch of equipment and attributes	—	—
MTCE	NSA	MN/MN	Remove from service for maintenance	ABN (NEP)	53
PROGVER	NSA	MN/MN	Program version error	ABN (NEP)	53
SYNCCLK	SA	CR/MN	Sync clock fail	ALM	24
AUTORESET-0	—	Event	Automatic reset level 0 (warm restart)	—	—
AUTORESET-1	—	Event	Automatic reset level 1 (cold restart)	—	—
EQUIP	—	Event	DMI is equipped	—	—
FRCDSW	—	Event	Forced switch	—	—
MANRESET-0	—	Event	Manual reset level 0 (warm restart)	—	—

**Table G. Equipment: DMI Unit (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
MANRESET-1	—	Event	Manual reset level 1 (cold restart)	—	—
MANRESET-2	—	Event	Manual reset level 2 (download)	—	—
MANSW	—	Event	Manual switch	—	—
UNASSIGN	—	Event	DMI is unassigned	—	—
UNEQUIP	—	Event	DMI is unequipped	—	—
WTRREVERT	—	Event	Wait to restore/revertive time out	—	—
ACT	—	Condition	Unit is active	—	—
STBY	—	Condition	Unit is standby	—	—

**Table H. Equipment: HIF Unit**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
BOOT	SA	MJ/MN	Processor is running boot code	ABN (NEP)	53
BUERR	SA	CR/MN	STS-1** B2 excessive errors	ALM	22 (LG1) 23 (LG2)
CNTBUS	NSA	CR/MN	Standby eqpt reflect test fail	ALM	25 (LG1) 26 (LG2)
CONTBUS	SA	CR/MN	Control bus failure	ALM	22 (LG1) 23 (LG2)
CONTCOM	NSA	CR/MN	Control comm failure	—	—
CONTEQPT	SA	CR/MN	Switch test fail	ALM	22 (LG1) 23 (LG2)
CONTRDUP	NSA	MJ/MN	Act – stdby HIF link down	—	—
CTNEQPT	SA	CR/MN	STS-1** interconnection eqpt failure	ALM	22 (LG1) 23 (LG2)
IMPROPRMVL	SA	MJ/MN	Improper removal	—	22 (LG1) 23 (LG2)
INHDBGN	NSA	MN/MN	Inhibit diagnostics	—	—
INT	SA	CR/MN	Internal hardware failure	ALM	22 (LG1) 23 (LG2)

**Table H. Equipment: HIF Unit (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
INVERR	NSA	MJ/MN	Inventory error	ALM	25 (LG1) 26 (LG2)
LBCL	NSA	MN/MN	High TX laser bias	ALM	25 (LG1) 26 (LG2)
LOM	NSA	MJ/MN	Loss of modulation	ALM	25 (LG1) 26 (LG2)
MEA	NSA	MN/MN	Mismatch of equipment and attributes	—	—
MTCE	NSA	MN/MN	Remove from service for maintenance	ABN (NEP)	53
PROGVER	NSA	MN/MN	Program version error	ABN (NEP)	53
SYNCCLK	SA	CR/MN	Sync clock fail	ALM	22 (LG1) 23 (LG2)
AUTORESET-0	—	Event	Automatic reset level 0 (warm restart)	—	—
AUTORESET-1	—	Event	Automatic reset level 1 (cold restart)	—	—
EQUIP	—	Event	HIF equipment is equipped	—	—
MANRESET-0	—	Event	Manual reset level 0 (warm restart)	—	—
MANRESET-1	—	Event	Manual reset level 1 (cold restart)	—	—
MANRESET-2	—	Event	Manual reset level 2 (download)	—	—
UNASSIGN	—	Event	HIF is unassigned	—	—
UNEQUIP	—	Event	HIF equipment is unequipped	—	—
ACT	—	Condition	Unit is active	—	—
STBY	—	Condition	Unit is standby	—	—

**Table I. Equipment: LIF Unit**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
BOOT	SA	MJ/MN	Processor is running boot code	ABN (NEP)	53
BUERR	SA	CR/MN	STS-1** B2 excessive errors	ALM	24
CONTBUS	SA	CR/MN	Control bus failure	ALM	24
CONTCOM	NSA	CR/MN	Control comm failure	—	—
CONTEQPT	SA	CR/MN	Switch test fail	ALM	24
CONTRDUP	NSA	MJ/MN	Act – stby LIF link fail	—	—
CNTBUS	NSA	CR/MN	Standby eqpt reflect test fail	ALM	27
CTNEQPT	SA	CR/MN	STS-1** Interconnection eqpt failure	ALM	24
FAILTOSW	SA	MJ/MN	Fail to switch	—	36
IMPROPRMVL	SA	MJ/MN	Improper removal	—	24
INHDBGN	NSA	MN/MN	Inhibit diagnostics	—	—
INHMPREPT	NSA	NR/NR	Inhibit PM report	—	—
INHSDWX	NSA	MN/MN	Inhibit switch	ABN (NEP)	53 & 42
INT	SA	CR/MN	Internal hardware failure	ALM	24
INVERR	NSA	MJ/MN	Inventory error	ALM	27
MEA	NSA	MN/MN	Mismatch of equipment and attributes	—	—
MTCE	NSA	MN/MN	Remove from service for maintenance	ABN (NEP)	53
PROGVER	NSA	MN/MN	Program version error	ABN (NEP)	53
SYNCCLK	SA	CR/MN	Sync clock fail	ALM	24
AUTORESET-0	—	Event	Automatic reset level 0 (warm restart)	—	—
AUTORESET-1	—	Event	Automatic reset level 1 (cold restart)	—	—
EQUIP	—	Event	LIF is equipped	—	—
FRCDSW	—	Event	Forced switch	—	—
MANRESET-0	—	Event	Manual reset level 0 (warm restart)	—	—

**Table I. Equipment: LIF Unit (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
MANRESET-1	—	Event	Manual reset level 1 (cold restart)	—	—
MANRESET-2	—	Event	Manual reset level 2 (download)	—	—
MANSW	—	Event	Manual switch	—	—
UNASSIGN	—	Event	LIF is unassigned	—	—
UNEQUIP	—	Event	LIF is unequipped	—	—
WTRREVERT	—	Event	Wait to restore/revertive time out	—	—
ACT	—	Condition	Unit is active	—	—
STBY	—	Condition	Unit is standby	—	—

**Table J. Equipment: LDR Unit**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
CONTCOM	SA	CR/MN	Active LDR – LIF control comm failure	ALM	24
CONTEQPT	SA	CR/MN	A/B select fail	ALM	24
IMPROPRMVL	SA	MJ/MN	Improper removal	—	24
INHDBGN	NSA	MN/MN	Inhibit diagnostics	—	—
INT	SA	CR/MN	Internal hardware failure	ALM	24
INVERR	NSA	MJ/MN	Inventory error	ALM	27
MEA	NSA	MN/MN	Mismatch of equipment and attributes	—	—
MTCE	NSA	MN/MN	Remove from service for maintenance	ABN (NEP)	53
TRMT	SA	CR/MN	Transmitter failure	ALM	24
AUTORESET	—	Event	Automatic reset	—	—
EQUIP	—	Event	LDR is equipped	—	—
UNASSIGN	—	Event	LDR is unassigned	—	—
UNEQUIP	—	Event	LDR is unequipped	—	—
ACT	—	Condition	Unit is active	—	—
STBY	—	Condition	Unit is standby	—	—

**Table K. Equipment: NEP Unit**

<b>ALARM CONDITION</b>	<b>SRVCE-AFFCTG (ACTIVE)</b>	<b>DEFAULT NTFNCNDE ACT/STBY</b>	<b>DESCRIPTION</b>	<b>LED</b>	<b>SERIAL E2A BIT</b>
BOOT	SA	MJ/MN	Processor is running boot code	ABN	53
CONTBUS	NSA	MN/MN	Control bus failure; SBI out-of-frame, parity errors	ALM	18
CONTEQPT	NSA	MN/MN	Control equipment failure, A/B select fail	ALM	18
CONTRDUP	NSA	MJ/MN	Active-to-standby processor link failure	—	—
FAILTOSW	NSA	MJ/MN	Fail to switch	—	—
IMPROPRMVL	NSA	MJ/MN	Improper removal	—	18
INHDBGN	NSA	MN/MN	Inhibit diagnostics	—	—
INHMPREPT	NSA	NR/NR	Inhibit PM report	—	—
INHSWDX	NSA	MN/MN	Inhibit switch duplex	ABN	53
INT	NSA	MJ/MN	Internal hardware failure	ALM	18
INVERR	NSA	MN/MN	Inventory error	ALM	18
MEA	NSA	MN/MN	Mismatch of equipment and attributes	—	—
MTCE	NSA	MN/MN	Remove from service for maintenance	ABN	53
PROGVER	NSA	MN/MN	Program version error	ABN	53
SYNCCLK	NSA	MN/MN	Sync clock fail	ALM	18
AUTORESET-0	—	Event	Automatic reset level 0 (warm restart)	—	—
AUTORESET-1	—	Event	Automatic reset level 1 (cold restart)	—	—
EQUIP	—	Event	NEP is equipped	—	—
FRCDSW	—	Event	Forced switch	—	—
MANRESET-0	—	Event	Manual reset level 0 (warm restart)	—	—
MANRESET-1	—	Event	Manual reset level 1 (cold restart)	—	—
MANRESET-2	—	Event	Manual reset level 2 (download)	—	—
MANSW	—	Event	Manual switch	—	—
UNASSIGN	—	Event	NEP is unassigned	—	—

**Table K. Equipment: NEP Unit (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
UNEQUIP	—	Event	NEP is unequipped	—	—
WTRREVERT	—	Event	Wait to restore/revert time out	—	—
ACT	—	Condition	Unit is active	—	—
STBY	—	Condition	Unit is standby	—	—

**Table L. Equipment: PWR Unit**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
CNVT	NSA	MN	Power converter failure	ALM	13
IMPROPRMVL	NSA	MJ	Improper removal	—	13
INVERR	NSA	MN	Inventory error	ALM	13
INT	NSA	MN	Internal hardware failure	ALM	13
MEA	NSA	MN	Mismatch of equipment and attributes	—	—
MTCE	NSA	MN	Remove from service for maintenance	ABN (NEP)	53
EQUIP	—	Event	PWR is equipped	—	—
UNEQUIP	—	Event	PWR is unequipped	—	—

**Table M. Equipment: VSCC Unit**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
BOOT	SA	MJ/MN	Processor is running boot code	ABN (NEP)	53
BUERR	SA	CR/MN	STS-1** B2 excessive errors	ALM	20
CNTBUS	NSA	CR/MN	Standby NEP – VSCC reflection test fail	ALM	21
CONTCOM	NSA	CR/MN	NEP – VSCC link fail	—	—
CONTRDUP	NSA	MJ/MN	Act – Stdby VSCC link fail	—	—
CTNEQPT	SA	CR/MN	STS-1** interconnection eqpt failure	ALM	20
FAILTOSW	SA	MJ/MN	Fail to switch	—	—
IMPROPRMVL	SA	MJ/MN	Improper removal	—	20
INHDBGN	NSA	MN/MN	Inhibit diagnostics	—	—
INHMPREPT	NSA	NR/NR	Inhibit PM report	—	—
INHSDWX	NSA	MN/MN	Inhibit switch	ABN (NEP)	53
INT	SA	CR/MN	Internal hardware failure	ALM	20
INVERR	NSA	MJ/MN	Inventory error	ALM	21
MEA	NSA	MN/MN	Mismatch of equipment and attributes	—	—
MTCE	NSA	MN/MN	Remove from service for maintenance	ABN (NEP)	53
PROGVER	NSA	MN/MN	Program version error	ABN (NEP)	53
SYNCCLK	SA	CR/MN	Sync clock fail	ALM	20
AUTORESET-0	—	Event	Automatic reset level 0 (warm restart)	—	—
AUTORESET-1	—	Event	Automatic reset level 1 (cold restart)	—	—
EQUIP	—	Event	VSCC is equipped	—	—
FRCDSW	—	Event	Forced switch	—	—
MANRESET-0	—	Event	Manual reset level 0 (warm restart)	—	—
MANRESET-1	—	Event	Manual reset level 1 (cold restart)	—	—



**Table M. Equipment: VSCC Unit (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
MANRESET-2	—	Event	Manual reset level 2 (download)	—	—
MANSW	—	Event	Manual switch	—	—
UNEQUIP	—	Event	VSCC is unequipped	—	—
UNASSIGN	—	Event	VSCC is unassigned	—	—
WTRREVERT	—	Event	Wait to restore/revertive time out	—	—
ACT	—	Condition	Unit is active	—	—
STBY	—	Condition	Unit is standby	—	—

**Table N. Equipment: VTG Unit**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
BUERR	SA	MJ	VTG group parity error, VTG bus fail	ALM	24
CONTBUS	SA	MJ	VTG reflection test fail	ALM	24
CONTEQPT	SA	MJ	A/B select fail	ALM	24
FAILTOSW	SA	MJ	Fail to switch	—	36
INHPRMREPT	NSA	NR	Inhibit PM report	—	—
IMPROPRMVL	SA	MJ	Improper removal	—	24
INHDBGN	NSA	MN	Inhibit diagnostics	—	—
INHSWPR	NSA	MN	Inhibit switch to protection	ABN (NEP)	53 & 42
INHSWWKG	NSA	MN	Inhibit switch to working	ABN (NEP)	53 & 42
INT	SA	MJ	Internal hardware failure	ALM	24
INVERR	NSA	MJ	Inventory error	ALM	27
MEA	NSA	MN	Mismatch of equipment and attributes	—	—
MTCE	NSA	MN	Remove from service for maintenance	ABN (NEP)	53
SWEQPT	SA	MJ	VTG control bus test fail	ALM	24

**Table N. Equipment: VTG Unit (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
SYNC	SA	MJ	Loss of timing on synchronization link; high speed sync failure	ALM	24
SYNCCLK	SA	MJ	Sync clock failure	ALM	24
EQUIP	—	Event	VTG is equipped	—	—
FRCDWKSWBK	—	Event	Force switch back to working	—	—
FRCDWKSWPR	—	Event	Force switch to protection	—	—
MANWKSWBK	—	Event	Manual switch back to working	—	—
MANWKSWPR	—	Event	Manual switch to protection	—	—
UNASSIGN	—	Event	VTG is unassigned	—	—
UNEQUIP	—	Event	VTG is unequipped	—	—
WKSWBK	—	Event	Switch back to working	—	—
WKSWPR	—	Event	Switch to protection	—	—
WTRREVERT	—	Event	Wait to restore/ revertive time out	—	—
ACT	—	Condition	Unit is active	—	—
STBY	—	Condition	Unit is standby	—	—

**Table O. Facility: BITS Synchronization Input**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
AIS	NSA	NA	Alarm indication signal (All 1's)	—	—
AISYEL	NSA	NA	AIS yellow	—	—
BER-HT	NSA	MN	Bit error ratio – high threshold (SFBER)	—	—
LOF	NSA	MN	Loss of frame	—	—
LOS	NSA	MN	Loss of signal	—	—
MTCE	NSA	MN	Remove from service for maintenance	ABN (NEP)	53
YEL	NSA	NA	Yellow	—	—

**Table P. Facility: EC1 Drop Group**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
AISL	SA	NA	Line AIS	SF	30
APSB	SA	MJ	APS byte failure	SF	30
BERL-HT	SA	CR	BER Line – high threshold	SF	30
BERL-LT	SA	MJ	BER Line – low threshold	SF	30
FERF	SA	NA	Far end failure	SF	30
INHMPREPT	NSA	NR	Inhibit PM report	—	—
LOF	SA	CR	Loss of frame	SF	30
LOS	SA	CR	Loss of signal	SF	30
MTCE	NSA	MN	Remove from service for maintenance	ABN (NEP)	53
T-CVL	NSA	NA	Line coding violation count Threshold Crossing Alert (TCA) 15MIN/1DAY	—	—
T-CVS	NSA	NA	Section coding violation count TCA 15MIN/1DAY	—	—
T-BPV	NSA	NA	BPV TCA 15MIN/1DAY	—	—
T-ESL	NSA	NA	Line errored seconds TCA 15MIN/1DAY	—	—
T-ESS	NSA	NA	Section errored seconds TCA 15MIN/1DAY	—	—
T-SEFS	NSA	NA	Severe err framing secs TCA 15MIN/1DAY	—	—
T-SESL	NSA	NA	Line severe err secs TCA 15MIN/1DAY	—	—
T-SESS	NSA	NA	Section severe err secs TCA 15MIN/1DAY	—	—
T-UASL	NSA	NA	Line unavailable seconds TCA 15MIN/1DAY	—	—
ACTLPBK	—	Condition	Loopback is active	—	—

**Table Q. Facility: OC3 Line Group**

<b>ALARM CONDITION</b>	<b>SRVCE- AFFCTG (ACTIVE)</b>	<b>DEFAULT NTFCNCDE ACT/STBY</b>	<b>DESCRIPTION</b>	<b>LED</b>	<b>SERIAL E2A BIT</b>
AISL	SA	NA/NA	Line AIS	SF	28 (LG1) 29 (LG2)
ALS	SA	MN/MN	Automatic laser shutdown	—	—
APSB	SA	MJ/MN	APS (auto prot sw) fail	SF	28 (LG1) 29 (LG2)
APSCM	SA	MJ/MN	APS channel match failure	SF	28 (LG1) 29 (LG2)
APSCONF	SA	MJ/MN	APS configuration error	SF	28 (LG1) 29 (LG2)
BERL-HT	SA	CR/MN	BER Line – high threshold	SF	28 (LG1) 29 (LG2)
BERL-LT	SA	MJ/MN	BER Line – low threshold	SF	28 (LG1) 29 (LG2)
FAILTOSW	SA	MJ/MN	Fail to switch	—	34 (LG1) 35 (LG2)
FEPRLF	SA	MN/MN	APS far end protection line fail	SF	28 (LG1) 29 (LG2)
FERF	SA	NA/NA	Far end failure	SF	28 (LG1) 29 (LG2)
FRCD	NSA	MN/MN	APS forced switch	ABN (NEP)	53
INHMPREPT	NSA	NR/NR	Inhibit PM report	—	—
LOCKOUTOFPR	NSA	MN/MN	APS lock out of protection	ABN (NEP)	53 & 40 (LG1) 41 (LG2)
LOF	SA	CR/MN	Loss of frame	SF	28 (LG1) 29 (LG2)
LOS	SA	CR/MN	Loss of signal or clock	SF	28 (LG1) 29 (LG2)
MAN	NSA	MN/MN	APS manual switch	ABN (NEP)	53
MTCE	NSA	MN/MN	Remove from service for maintenance	ABN (NEP)	53
T-CVL	NSA	NA/NA	Line coding violation count TCA (Threshold Crossing Alert) 15MIN/1DAY	—	—
T-CVS	NSA	NA/NA	Section coding violation count TCA 15MIN/1DAY	—	—

**Table Q. Facility: OC3 Line Group (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
T-ESL	NSA	NA/NA	Line errored seconds TCA 15MIN/1DAY	—	—
T-ESS	NSA	NA/NA	Section errored seconds TCA 15MIN/1DAY	—	—
T-SEFS	NSA	NA/NA	Severe err framing secs TCA 15MIN/1DAY	—	—
T-SESL	NSA	NA/NA	Line severe err secs TCA 15MIN/1DAY	—	—
T-SESS	NSA	NA/NA	Section severe err secs TCA 15MIN/1DAY	—	—
T-UASL	NSA	NA/NA	Line unavailable seconds TCA 15MIN/1DAY	—	—
FRCDWKSWBK	—	Event	Forced switch back to wkg; near end or far end	—	—
FRCDWKSWPR	—	Event	Forced switch to protection; near end or far end	—	—
LOCKOUTOFP	—	Event	Lock out of protection; near end or far end	—	—
MANWKSWBK	—	Event	Manual switch back to working; near end or far end	—	—
MANWKSWPR	—	Event	Manual switch to protection; near end or far end	—	—
SIGFAIL	—	Event	Far end: signal fail	—	—
SIGDEG	—	Event	Far end: signal degraded	—	—
UNASSIGN	—	Event	OC-3 facility is unassigned	—	—
WKSWBK	—	Event	Near end: switch back to working	—	—
WKSWPR	—	Event	Near end: switch to protection	—	—
WTRREVERT	—	Event	Wait for restore time out; near end or far end	—	—

**Table Q. Facility: OC3 Line Group (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
ACT	—	Condition	Facility is active; near end or far end	—	—
STBY	—	Condition	Facility is standby; near end or far end	—	—
ACTLPBK	—	Condition	Loopback is active	—	—
K1-( )	—	Condition	Contents of K1 byte	—	—
K2-( )	—	Condition	Contents of K2 byte	—	—

**Table R. Facility: T1 (DS1) Drop Group**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
AIS	SA	NA	Alarm indication signal, All 1's	SF	30
BER-HT	SA	MJ	Bit error ratio – high threshold (SFBER)	SF	30
INHLPBK	NSA	MN	Inhibit loopback	—	—
INHMPREPT	NSA	NR	Inhibit PM report	—	—
LOS	SA	MJ	Loss of signal	SF	30
MTCE	NSA	MN	Remove from service for maintenance	ABN (NEP)	53
T-BPV	NSA	NA	Bipolar violat threshold crossing 15MIN/1DAY	—	—
T-ESL	NSA	NA	Errored seconds threshold crossing 15MIN/1DAY	—	—
T-SESL	NSA	NA	Severe errored seconds TCA 15MIN/1DAY	—	—
ACTLPBK	—	Condition	Loopback is active	—	—

**Table S. Facility: T3 (DS3) Drop Group**

ALARM CONDITION	SRVCE- AFFCTG (ACTIVE)	DEFAULT NTFCNCDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
BERL-HT	SA	CR	BER Line -- high threshold	SF	30
INHMPREPT	NSA	NR	Inhibit PM report	—	—
LOS	SA	CR	Loss of signal	SF	30
MTCE	NSA	MN	Remove from service for maintenance	ABN (NEP)	53
T-BPV	NSA	NA	BPV TCA 15MIN/1DAY	—	—
T-ESL	NSA	NA	Line errored seconds TCA 15MIN/1DAY	—	—
T-SESL	NSA	NA	Line severe err secs TCA 15MIN/1DAY	—	—
ACTLPBK	—	Condition	Loopback is active	—	—

Table T. Port , RMT, SDCC, SML, and X25

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
<b>PORT:</b>					
CD	NSA	MN	Port failure	—	—
<b>RMT:</b>					
RMTALM	NSA	MN	Remote NE alarm indication	—	—
<b>SDCC:</b>					
EOC	NSA	MN	Embedded operation channel fail	—	—
<b>SML:</b>					
AIS	NSA	NA	Alm indication sig (All 1's)	—	—
AISYEL	NSA	NA	AIS yellow	—	—
BER-HT	NSA	MN	Bit error ratio – high threshold (SFBER)	—	—
LOF	NSA	MN	Loss of frame	—	—
LOS	NSA	MN	Loss of signal	—	—
MTCE	NSA	MN	Remove from service for maintenance	ABN (NEP)	53
YEL	NSA	NA	Yellow	—	—
<b>X25:</b>					
LAPBERR	NSA	MN	LAPB link fail	—	—



**Table U. STS1 Path**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
<b>STS1 Path (Line Group):</b>					
AISP	SA	NA/NA	STS path AIS (alm insert sig)	—	—
BERP-HT†	NSA	NA	BER path – high threshold	—	—
BERP-LT†	NSA	NA	BER path – low threshold	—	—
INHMPREPT	NSA	NR/NR	Inhibit PM report	—	—
LOMF*	SA	MJ/MN	STS loss of multiframe	—	—
LOP	SA	MJ/MN	STS loss of pointer	—	—
PTHTRCMF*	NSA	MN/MN	STS path tracer match failure	—	—
SLMF*	SA	MN/MN	STS signal label match failure	—	—
YELP*	SA	NA/NA	STS path yellow	—	—
T-CVP*	NSA	NA/NA	STS NEnd or FEnd path coding violation count TCA (threshold crossing alert) 15MIN/1DAY	—	—
T-ESP*	NSA	NA/NA	STS NEnd or FEnd path Err Secs TCA 15MIN/1DAY	—	—
T-PJC	NSA	NA/NA	STS pointer justification TCA 15MIN/1DAY	—	—
T-SESP*	NSA	NA/NA	STS NEnd or FEnd path sev err sec TCA 15MIN/1DAY	—	—
T-UASP*	NSA	NA/NA	STS NEnd or FEnd path unavail sec TCA 15MIN/1DAY	—	—
PTHTRCCHG*	—	Event	STS path tracer change	—	—
SIGBLEQ-( )	—	Condition	Signal label equipped with ( ) code	—	—
SIGLBLUEQ	—	Condition	Signal label unequipped	—	—
† Monitoring is on the VSCC101 units (alarm will not occur with VSCC20X hard-wired cross-connects). * These conditions apply only if STS-1 path is terminated (provisioned for VT payload or interfaces DS3 port).					

**Table U. STS1 Path (cont)**

<b>ALARM CONDITION</b>	<b>SRVCE- AFFCTG (ACTIVE)</b>	<b>DEFAULT NTFCNCDE ACT/STBY</b>	<b>DESCRIPTION</b>	<b>LED</b>	<b>SERIAL E2A BIT</b>
<b>STS1 Path (Ring, Reported Against Line Group):</b>					
FRCD	NSA	MN	Ring forced switch request	ABN (NEP)	53 & 42
MAN	NSA	MN	Ring manual switch request	ABN (NEP)	53 & 42
BUERR	—	Event	STS-1** fail, reported as switch reason	—	—
WTRREVERT	—	Event	Wait to revert time out, reported as switch reason	—	—
<b>STS1 Path (Drop Group to LIF):</b>					
AISP	SA	NA	STS path AIS (alm insert sig)	—	—
INHPMREPT	NSA	NR	Inhibit PM report	—	—
LOMF*	SA	MJ	STS loss of multiframe	—	—
LOP	SA	MJ	STS loss of pointer	—	—
PTHTRCMF*	NSA	MN	STS path tracer match failure	—	—
SLMF*	SA	MN	STS signal label match failure	—	—
YELP*	SA	NA	STS path yellow	—	—
T-CVP*	NSA	NA	STS NEnd or FEnd path coding violation count TCA (threshold crossing alert) 15MIN/1DAY	—	—
T-ESP*	NSA	NA	STS NEnd or FEnd path Err Secs TCA 15MIN/1DAY	—	—
T-PJC	NSA	NA	STS pointer justification TCA 15MIN/1DAY	—	—
T-SESP*	NSA	NA	STS NEnd or FEnd path sev err sec TCA 15MIN/1DAY	—	—
T-UASP*	NSA	NA	STS NEnd or FEnd path unavail sec TCA 15MIN/1DAY	—	—
* These conditions apply only if STS-1 path is terminated (provisioned for VT payload or interfaces DS3 port).					

**Table U. STS1 Path (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
<b>STS1 Path (Drop Group to LIF): (cont)</b>					
PTHTRCCHG*	—	Event	STS path tracer change	—	—
SIGBLEQ-( )	—	Condition	Signal label equipped with ( ) code	—	—
SIGLBLUEQ	—	Condition	Signal label unequipped	—	—
<i>* These conditions apply only if STS-1 path is terminated (provisioned for VT payload or interfaces DS3 port).</i>					
<b>STS1 Path (Ring Path Selector, Reported Against Drop Group):</b>					
PATHSEL	SA	CR	Both paths failed, did not switch	—	43
FRCDWKSWBK	NSA	NRT†	Protected path forced switch back	—	—
FRCDWKSWPR	NSA	NRT†	Protected path forced switch to protecting	—	—
MANWKSWBK	NSA	NRT†	Manual switch back to protected	—	—
MANWKSWPR	NSA	NRT†	Manual switch of protected to protecting	—	—
WKSWBK	NSA	NRT†	Protected path switch back	—	—
WKSWPR	NSA	NRT†	Protected path switch to protection	—	—
PROTECTED-LG1	—	Condition	Protected path is Line Group 1	—	—
PROTECTING-LG1	—	Condition	Protecting path is Line Group 1	—	—
PROTECTED-LG2	—	Condition	Protected path is Line Group 2	—	—
PROTECTING-LG2	—	Condition	Protecting path is Line Group 2	—	—
PROTECTED-ACT	—	Condition	Protected path is active	—	—
PROTECTING-ACT	—	Condition	Protecting path is active	—	—
† The notification code for these conditions only can be provisioned as NR or NA.					

**Table U. STS1 Path (cont)**

<b>ALARM CONDITION</b>	<b>SRVCE- AFFCTG (ACTIVE)</b>	<b>DEFAULT NTFCNCDE ACT/STBY</b>	<b>DESCRIPTION</b>	<b>LED</b>	<b>SERIAL E2A BIT</b>
<b>STS1 Path (Ring Path Selector, Reported Against Drop Group):</b>					
PROTECTED- STBY	—	Condition	Protected path is standby	—	—
PROTECTING- STBY	—	Condition	Protecting path is standby	—	—
PROTECTED- FAIL	—	Condition	Protected path is failed	—	—
PROTECTING- FAIL	—	Condition	Protecting path is failed	—	—
PROTECTED- FRCD	—	Condition	Protected path has forced switch	—	—
PROTECTING- FRCD	—	Condition	Protecting path has forced switch	—	—
PROTECTED- MAN	—	Condition	Protected path has manual switch	—	—
PROTECTING- MAN	—	Condition	Protecting path has manual switch	—	—

**Table V. SYNCN: NESYNC**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
(-)-DG1A-1	NSA	MN/MN	Drop group 1, side A reference fail	—	17
(-)-DG1B-1	NSA	MN/MN	Drop group 1, side B reference fail	—	17
(-)-DG2A-1	NSA	MN/MN	Drop group 2, side A reference fail	—	17
(-)-DG2B-1	NSA	MN/MN	Drop group 2, side B reference fail	—	17
(-)-DG3A-1	NSA	MN/MN	Drop group 3, side A reference fail	—	17
(-)-DG3B-1	NSA	MN/MN	Drop group 3, side B reference fail	—	17
FRNG	NSA	NA/NA	Free run mode	—	—
FST	NSA	MN/MN	Fast start mode	—	—
(-)-HIF1A	NSA	MN/MN	Line group 1, side A reference fail	—	17
(-)-HIF1B	NSA	MN/MN	Line group 1, side B reference fail	—	17
(-)-HIF2A	NSA	MN/MN	Line group 2, side A reference fail	—	17
(-)-HIF2B	NSA	MN/MN	Line group 2, side B reference fail	—	17
HLDOVR	NSA	MN/MN	Holdover mode	—	—
INHATOMO-DESW	NSA	MN/MN	Inhibit autorestitution	ABN (NEP)	53
INHPMREPT	NSA	NR/NR	Inhibit PM report	—	—
LOCKOUTOF-SYNC	NSA	MN/MN	Lock out of SYNC reference	—	—
SYNC	SA	MJ/MN	Clock is in internal reference	—	—
(-)-SYNCPRI	NSA	MN/MN	Sync primary BITS input reference fail	—	17
(-)-SYNCSEC	NSA	MN/MN	Sync secondary BITS input reference fail	—	17
MANSWTOPRI	—	Event	Manual switch to primary reference	—	—
MANSWTOSEC	—	Event	Manual switch to secondary reference	—	—
MANSWTO-THIRD	—	Event	Manual switch to 3rd reference	—	—
() = PRI, SEC, THIRD, FOURTH or FIFTH (for NESYNC only)					

**Table V. SYNCN: NESYNC (cont)**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
MANSWTO-FOURTH	—	Event	Manual switch to 4th reference	—	—
MANSWTO-FIFTH	—	Event	Manual switch to 5th reference	—	—
SWTOPRI	—	Event	Automatic switch to primary reference	—	—
SWTOSEC	—	Event	Automatic switch to secondary reference	—	—
SWTOTHIRD	—	Event	Automatic switch to 3rd reference	—	—
SWTOFOURTH	—	Event	Automatic switch to 4th reference	—	—
SWTOFIFTH	—	Event	Automatic switch to 5th reference	—	—
SWTOINT	—	Event	Automatic switch to internal clock reference	—	—
FRNGSYNC	—	Condition	Free-run mode (provisioned)	—	—
FSTSYNC	—	Condition	Fast-start mode (provisioned)	—	—
HLDVRSYNC	—	Condition	Hold-over mode (provisioned)	—	—
IMEDSWSYNC	—	Condition	Immediate sync switch mode (provisioned)	—	—
DELAWSWSYNC	—	Condition	Delayed sync switch mode (provisioned)	—	—
OPRSYNC-PRI	—	Condition	Operate sync on primary ref.	—	—
OPRSYNC-SEC	—	Condition	Operate sync on secondary ref.	—	—
OPRSYNC-THIRD	—	Condition	Operate sync on third ref.	—	—
OPRSYNC-FOURTH	—	Condition	Operate sync on fourth ref.	—	—
OPRSYNC-FIFTH	—	Condition	Operate sync on fifth ref.	—	—

**Table W. SYNCN: BITSSYNC**

<b>ALARM CONDITION</b>	<b>SRVCE- AFFCTG (ACTIVE)</b>	<b>DEFAULT NTFCNCDE ACT/STBY</b>	<b>DESCRIPTION</b>	<b>LED</b>	<b>SERIAL E2A BIT</b>
( )-DG1A-1	NSA	MN/MN	Drop group 1, side A reference fail	—	17
( )-DG1B-1	NSA	MN/MN	Drop group 1, side B reference fail	—	17
( )-DG2A-1	NSA	MN/MN	Drop group 2, side A reference fail	—	17
( )-DG2B-1	NSA	MN/MN	Drop group 2, side B reference fail	—	17
( )-DG3A-1	NSA	MN/MN	Drop group 3, side A reference fail	—	17
( )-DG3B-1	NSA	MN/MN	Drop group 3, side B reference fail	—	17
( )-HIF1A	NSA	MN/MN	Line group 1, side A reference fail	—	17
( )-HIF1B	NSA	MN/MN	Line group 1, side B reference fail	—	17
( )-HIF2A	NSA	MN/MN	Line group 2, side A reference fail	—	17
( )-HIF2B	NSA	MN/MN	Line group 2, side B reference fail	—	17
INHAUTOMO- DESW	NSA	MN/MN	Inhibit auto restoration	ABN (NEP)	53
LOCKOUTOF- SYNC	NSA	MN/MN	Lock out of SYNC reference	—	—
MANSWTOPRI	—	Event	Manual switch to primary reference	—	—
MANSWTOSEC	—	Event	Manual switch to secondary reference	—	—
SWTOPRI	—	Event	Automatic switch to primary reference	—	—
SWTOSEC	—	Event	Automatic switch to secondary reference	—	—
OPRSYNC-PRI	—	Condition	Operate sync on primary ref.	—	—
OPRSYNC-SEC	—	Condition	Operate sync on secondary ref.	—	—
( ) = PRI (for BITSSYNC only)					

**Table X. VT1 Path**

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
<b>VT1 Path (Line Group) (Parent STS-1 Path Must Be Provisioned for VT Payload):</b>					
INHMPREPT	NSA	NR/NR	Inhibit PM report	—	—
AISP	SA	NA/NA	VT path AIS	—	—
LOP	SA	MJ/MN	VT loss of pointer	—	—
VTSIZE	SA	MJ/MN	VT size mismatch	—	—
T-PJC	NSA	NA/NA	Pointer justification TCA 15MIN/1DAY	—	—
<b>VT1 Path (Ring, Reported Against Line Group):</b>					
FRCD	NSA	MN	Ring forced switch request	ABN (NEP)	53 & 42
MAN	NSA	MN	Ring manual switch request	ABN (NEP)	53 & 42
WTRREVERT	—	Event	Wait to revert time out, reported as switch reason	—	—
<b>VT1 Path (Drop Group to DMI):</b>					
INHMPREPT	NSA	NR	Inhibit PM report	—	—
AISP	SA	NA	VT path AIS	—	—
LOP	SA	MN	VT loss of pointer	—	—
VTSIZE	SA	MN	VT size mismatch	—	—
SLMF	SA	MN	VT signal label mismatch	—	—
YELP	SA	NA	VT path yellow	—	—
T-CVP	NSA	NA	VT near or far end path coding violation count TCA 15MIN/1DAY	—	—
T-ESP	NSA	NA	VT near or far end path err sec TCA 15MIN/1DAY	—	—
T-PJC	NSA	NA	Pointer justification TCA 15MIN/1DAY	—	—
T-SESP	NSA	NA	VT near or far end path sev err sec TCA 15MIN/1DAY	—	—
T-UASP	NSA	NA	VT NEnd or FEnd path unavail sec TCA 15MIN/1DAY	—	—



Table X. VT1 Path (cont)

ALARM CONDITION	SRVCE-AFFCTG (ACTIVE)	DEFAULT NTFNCNDE ACT/STBY	DESCRIPTION	LED	SERIAL E2A BIT
<b>VT1 Path (Drop Group to DMI): (cont)</b>					
SIGLBLEQ-( )	—	Condition	Signal label equipped with ( ) code	—	—
SIGLBLUEQ	—	Condition	Signal label unequipped	—	—
<b>VT1 Path (Drop Group to LIF) (Parent STS-1 Path Must Be Provisioned for VT Payload):</b>					
INHMPREPT	NSA	NR	Inhibit PM report	—	—
AISP	SA	NA	VT path AIS	—	—
LOP	SA	MJ	VT loss of pointer	—	—
VTSIZE	SA	MJ	VT size mismatch	—	—
T-PJC	NSA	NA	Pointer justification TCA 15MIN/1DAY	—	—
<b>VT1 Path (Ring Path Selector, Reported Against Drop Group):</b>					
PATHSEL	SA	MJ	Both paths failed, did not switch	—	43
FRCDWKSWBK	NSA	NR†	Protected path forced switch back	—	—
FRCDWKSWPR	NSA	NR†	Protected path forced switch to protecting	—	—
MANWKSWBK	NSA	NR†	Manual switch back to protected	—	—
MANWKSWPR	NSA	NR†	Manual switch of protected to protecting	—	—
WKSWBK	NSA	NR†	Protected path switch back	—	—
WKSWPR	NSA	NR†	Protected path switch to protection	—	—
PROTECTED-LG1	—	Condition	Protected path is Line Group 1	—	—
PROTECTING-LG1	—	Condition	Protecting path is Line Group 1	—	—
PROTECTED-LG2	—	Condition	Protected path is Line Group 2	—	—
PROTECTING-LG2	—	Condition	Protecting path is Line Group 2	—	—
† The notification code for these conditions only can be provisioned as NR or NA.					

**Table X. VT1 Path (cont)**

<b>ALARM CONDITION</b>	<b>SRVCE- AFFCTG (ACTIVE)</b>	<b>DEFAULT NTFCNCDE ACT/STBY</b>	<b>DESCRIPTION</b>	<b>LED</b>	<b>SERIAL E2A BIT</b>
<b>VT1 Path (Ring Path Selector, Reported Against Drop Group):</b>					
PROTECTED- ACT	—	Condition	Protected path is active	—	—
PROTECTING- ACT	—	Condition	Protecting path is active	—	—
PROTECTED- STBY	—	Condition	Protected path is standby	—	—
PROTECTING- STBY	—	Condition	Protecting path is standby	—	—
PROTECTED- FAIL	—	Condition	Protected path is failed	—	—
PROTECTING- FAIL	—	Condition	Protecting path is failed	—	—
PROTECTED- FRCD	—	Condition	Protected path has forced switch	—	—
PROTECTING- FRCD	—	Condition	Protecting path has forced switch	—	—
PROTECTED- MAN	—	Condition	Protected path has manual switch	—	—
PROTECTING- MAN	—	Condition	Protecting path has manual switch	—	—

## GENERAL

This document provides a list of the 1603/12 SM system TL-1 commands with prerequisites that may be required prior to executing the commands. When entering a TL-1 command, the command requires a target entity that specifies what entity the command is to take action on. The target entity is specified by the "aid" parameter of the command (see TNG-501). The target entity generally may specify any of the following: data base entries, equipment, facilities, traffic- or nontraffic-carrying paths (channels), ports, and synchronization sources.

Sometimes, you may receive the "Not in Valid State" (SNVS) error message when trying to execute a command. This error message indicates that either the target entity of a command, or other entities that support the target entity, may not be in the proper service state when attempting to execute the command. If the target or supporting entities are not in the proper state, the command is denied and the SNVS error message is displayed. To aid in resolving the error, locate the command in Table A, Page 2, to determine what other commands may need to be entered first.

Refer to TNG-502 for a summary of the TL-1 commands of the 1603/12 SM system. For more detailed information on the TL-1 commands and messages, refer to the Commands and Messages Manual (650205-823-022).

All entities have a default primary service state (pst) and, when assigned, have default parameters. Refer to TNG-509 for a summary of the defaults associated with the 1603/12 SM Network Element. Also refer to TNG-514 for more information on the Network Element service states.

Retrieve (RTRV) commands can be entered anytime and, therefore, are not listed in Table A.

To execute any given command, it is assumed that the session privilege level is sufficient to execute the command (see TNG-510).

To edit parameters of any entity that has an alterable Primary State (PST), the entity's primary state should first be set to OOS-MA (Out-of-Service for Memory Administration). The exception is when the primary state of the entity is the only parameter to be changed. For example, to edit the parameter of an entity that is in-service (pst=IS), first edit the entity's state to OOS-MA, then return its primary state to in-service in the command where the parameter is changed.

### EXAMPLE:

```
ED-XYZ::::PST=MA;  
ED-XYZ::::new_parameter:PST=IS;
```

ISSUE 2	JULY 1994
ALCL 363-203-502	TNG
PAGE 1 of 10	508

**Table A. 1603/12 SM Command Entry Prerequisites**

<b>COMMAND</b>	<b>PREREQUISITES</b>
ACT-USER	Login ID must exist (ENT-SECU-USER command)
ALW-AUTORST	Must be previously inhibited (INH-AUTORST command)
ALW-DGN-EQPT	Equipment must be assigned (ENT-EQPT command)
ALW-LPBK-T1*	T1 facility must be assigned (ENT-T1 command)
ALW-MSG-ALL	Messages must be previously inhibited (INH-MSG-ALL command)
ALW-PMREPT-ALL	No prerequisites
ALW-PMREPT-EC1*	EC1 facility must be assigned (ENT-EC1 command)
ALW-PMREPT-EQPT*	Equipment must be assigned (ENT-EQPT command)
ALW-PMREPT-OC3*	OC-3 facility must be assigned (ENT-OC3 command)
ALW-PMREPT-STS1*	STS-1 path must be assigned (see entry for ED-STS1 in this table for more information)
ALW-PMREPT-SYCN*	CLK unit must be assigned (ENT-EQPT command)
ALW-PMREPT-T1*	T1 must be assigned (ENT-T1 command)
ALW-PMREPT-T3*	T3 must be assigned (ENT-T3 command)
ALW-PMREPT-VT1*	VT-1.5 path must be assigned (parent STS1 STSPTYPE parameter must be set to VT, via ED-STS1 command)
ALW-SWDX-EQPT	Duplex equipment must be assigned (ENT-EQPT command)
ALW-SWTOPROTN-EQPT	VTG working and protection equipment must be assigned (ENT-EQPT command)
ALW-SWTOWKG-EQPT	VTG working and protection equipment must be assigned (ENT-EQPT command)
CANC-USER	Login ID must exist (ENT-SECU-USER command) and user must be logged in (ACT-SECU-USER command)
CPY-MEM	Target equipment (processor) must be assigned (ENT-EQPT command) and OOS-MA
CLR-E2ADISP	E2A display must be set (SET-E2ADISP command)
CONFIG-SYS	No prerequisites
DGN-EQPT	Equipment must be assigned (ENT-EQPT command) and OOS-MT state (RMV-EQPT command for service-affecting diagnostics)
DLT-BITS	BITS facility must be assigned (ENT-BITS command) and in OOS-MA state (ED-BITS command). Also, BITS source cannot be in NE SYNC reference list; if it is, DLT-BITS must be preceded by ED-SYCN command to remove it from the list
DLT-CRS-STS1 (VSCC101 only)	Cross-connection must be assigned (ENT-CRS-STS1 command) and all end-point STS-1 paths associated with the cross-connection must be OOS-MA (ED-STS1 command)

\* Inhibited, by default

Table A. 1603/12 SM Command Entry Prerequisites (cont)

COMMAND	PREREQUISITES
DLT-CRS-VT1 (VSCC101 only)	Cross-connection must be assigned (ENT-CRS-VT1 command) and all end-point VT-1 paths associated with the cross-connection must be OOS-MA (ED-VT1 command)
DLT-DLMAP	Applies to remote DLMAP entries only; entry must already be entered into data base (ENT-DLMAP command). Also, if any Serial E2A destination IDs are provided via DLMAP to be deleted, E2A connection must be deleted first (DLT-E2AMAP and CLR-E2ADISP commands)
DLT-E2AMAP	E2A entry must already be entered in data base (ENT-E2AMAP command)
DLT-EC1	Facility must be assigned (ENT-EC1 command) and OOS-MA state (ED-EC1 command). Also, may first need to do any of the following: <ul style="list-style-type: none"> <li>- Sibling STS-1 path must be OOS-MA (ED-STSS1 command)</li> <li>- If VSCC101 is used, delete all cross-connections to the facility (DLT-CRS-STSS1 and/or DLT-CRS-VT1 commands)</li> <li>- Remove facility from NESYNC or BITSSYNC reference list (ED-SYCN command)</li> </ul>
DLT-EQPT	Equipment must be assigned (ENT-EQPT command) and OOS-MA state (ED-EQPT command). Also, any supported entities must be deleted first: <p><b>CLK:</b> SYCN ref. list must be OOS-MA (ED-SYCN command)  If deleting CLKA, BITS SYNCPRI port must be deleted first,  If deleting CLKB, BITS SYNCSEC port must be deleted</p> <p><b>COA</b> and <b>NEPA:</b> cannot be deleted</p> <p><b>DMI:</b> If simplex, or duplex and deleting both sides (A and B), all VTG units in drop group must first be deleted</p> <p><b>HIF:</b> associated OC-3 facility and its supported entities must be deleted first (DLT-OC3 command)</p> <p><b>LIF:</b> If deleting LIFA, LDRA must be deleted first;  If deleting LIFB, LDRB must be deleted first</p> <p><b>LDR:</b> If simplex, or duplex and deleting both sides (A and B), EC1 port must be deleted first (DLT-EC1 command)</p> <p><b>PWRA, PWRB, PWRC:</b> cannot be deleted</p> <p><b>VSCC101:</b> All cross-connections must be deleted (DLT-CRS-STSS1 and DLT-CRS-VT1 commands)</p> <p><b>VSCC20X:</b> no additional prerequisites</p> <p><b>VTG:</b> Associated T1(s) must first be deleted (DLT-T1 command)</p>

**Table A. 1603/12 SM Command Entry Prerequisites (cont)**

COMMAND	PREREQUISITES
DLT-OC3	Facility must be assigned (ENT-OC-3 command) and OOS-MA state (ED-OC3 command). Also, may first need to do any of the following: <ul style="list-style-type: none"> <li>- Sibling STS-1 paths must be OOS-MA (ED-ST51 command)</li> <li>- If VSCC101 is used, delete all cross-connections to the facility (DLT-CRS-ST51 and/or DLT-CRS-VT1 commands)</li> <li>- If VSCC20X units are used, implicitly delete all cross-connections to the facility by deleting any facilities (line group and drop group) that are connected to the facility via the fixed-path cross-connections provided by the VSCC20X unit used</li> <li>- Remove facility from any DLMAP entries (ED-DLMAP or DLT-DLMAP commands)</li> <li>- Delete SDCC channel (DLT-SDCC command) on facility</li> <li>- Remove facility from NESYNC or BITSSYNC reference list (ED-SYCN command)</li> </ul>
DLT-PORT	Applies to CRAFT2, SE2A and X25PORT ports only. Ports must be assigned (ENT-PORT command) and OOS-MA state (ED-PORT command)
DLT-SDCC	If facility carrying SDCC channel is supporting a DLMAP entry, edit or delete the DLMAP entry to remove the facility from the entry (ED-DLMAP or DLT-DLMAP commands)
DLT-SECU-USER	Login ID must exist (ENT-SECU-USER command)
DLT-SML	Facility must be assigned (ENT-SML command) and OOS-MA state (ED-SML command). Also, may first need to do any of the following: <ul style="list-style-type: none"> <li>- Remove facility from any DLMAP entries (ED-DLMAP or DLT-DLMAP commands)</li> <li>- Delete SDCC channel (DLT-SDCC command) on SML facility</li> </ul>
DLT-T1	T1 must be assigned (ENT-T1) and OOS-MA state (ED-T1 command). Also, any of the following may apply: <ul style="list-style-type: none"> <li>- The associated VT1 path, if in-service (pst=IS) must be edited to make it OOS-MA (ED-VT1 command)</li> <li>- If VSCC101 is used, VT1 cross-connection to/from T1 port must be deleted (DLT-CRS-VT1 command)</li> </ul>
DLT-T3	T3 must be assigned (ENT-T3) and OOS-MA state (ED-T3 command). Also, any of the following may apply: <ul style="list-style-type: none"> <li>- Sibling STS1 path must be OOS-MA (ED-ST51 command)</li> <li>- If VSCC101 is used, STS1 cross-connection to/from T3 port must be deleted (DLT-CRS-ST51 command)</li> <li>- If provided, facility must be removed from NESYNC or BITSSYNC reference list (ED-SYCN command)</li> </ul>
ED-BITS	Facility must be assigned (ENT-BITS command)

**Table A. 1603/12 SM Command Entry Prerequisites (cont)**

<b>COMMAND</b>	<b>PREREQUISITES</b>
ED-CRS-ST51 (VSCC101 only)	Cross-connection must be assigned (ENT-CRS-ST51 command) and all end-point STS-1 paths associated with the cross-connection must be OOS-MA (ED-ST51 command)
ED-CRS-VT1 (VSCC101 only)	Cross-connection must be assigned (ENT-CRS-VT1 command) and all end-point VT1 paths associated with the cross-connection must be OOS-MA (ED-VT1 command)
ED-DLMAP	Entry must exist in data base (ENT-DLMAP command for remote entries, local entry always exists)
ED-EC1	Facility must be assigned (ENT-EC1 command) and OOS-MA state (ED-EC1 command)
ED-EQPT	Equipment must be assigned (ENT-EQPT command)
ED-FFP-OC3	OC-3 facility must be entered (ENT-OC3 command) and OOS-MA state (ED-OC3 command)
ED-FFP-ST51 (VSCC101 only)	Cross-connection must be assigned (ENT-CRS-ST51 command) and Ring-type cross-connection and all end-point STS-1 paths associated with the cross-connection must be OOS-MA (ED-ST51 command)
ED-FFP-VT1 (VSCC101 only)	Cross-connection must be assigned (ENT-CRS-VT1 command) and Ring-type cross-connection and all end-point VT-1 paths associated with the cross-connection must be OOS-MA (ED-VT1 command)
ED-OC3	Facility must be assigned (ENT-OC-3 command)
ED-PORT	Port must be assigned (ENT-PORT command)
ED-SDCC	SDCC channel must be assigned (ENT-SDCC command)
ED-SECU-CID	No prerequisites
ED-SECU-CMD	No prerequisites
ED-SECU-PID	No prerequisites
ED-SECU-USER	No prerequisites
ED-SML	Facility must be assigned (ENT-SML command)
ED-ST51	STS-1 path must be assigned: STS-1 paths are assigned indirectly by entering the STS-1 path's parent facility into service (as a result of the ENT-OC3 command for line group STS-1 paths and ENT-EC1 command for drop group STS-1 paths). The STS-1 path to any DMI/VTG equipped drop group is always unassigned and, therefore, cannot be edited
ED-SYNCN	Clock unit (CLK) must be assigned (ENT-EQPT command) and facility to be placed in clock reference list must be assigned (ENT-OC3, ENT-EC1 and/or ENT-BITS commands)
ED-T1	T1 facility (ENT-T1 command) and supporting drop group equipment (ENT-EQPT command) must be assigned

**Table A. 1603/12 SM Command Entry Prerequisites (cont)**

<b>COMMAND</b>	<b>PREREQUISITES</b>
ED-T3	T3 facility (ENT-T3 command) and supporting drop group equipment (ENT-EQPT command) must be assigned
ED-VT1	VT1 path must be assigned (parent STS1 STSPTYPE parameter must be set to VT, via ED-STS1 command)
ED-X25	X25PORT must be assigned (ENT-PORT command)
ENT-BITS	For SYNCPRI, CLK-A must be assigned (ENT-EQPT command) For SYNCSEC, CLK-B must be assigned
ENT-CRS-STS1 (VSCC101 only)	All end-point STS-1 paths associated with the cross-connection must be OOS-MA and have a STS payload type (STSPTYPE parameter) of STS (ED-STS1 command)
ENT-CRS-VT1 (VSCC101 only)	All end-point VT1 paths associated with the cross-connection must be assigned (ED-STS1 command) and be OOS-MA (ED-VT1 command)
ENT-DLMAP	Supporting facility (ENT-OC3 or ENT-SML command) and SDCC channel (ENT-SDCC command) must be assigned
ENT-E2AMAP	No prerequisites
ENT-EC1	Associated drop group equipment (LIF2 and LDR2) must be assigned (ENT-EQPT command)
ENT-EQPT	No prerequisites except for VTG units which require the associated DMI units to be assigned, and LDR units which require associated LIF units to be assigned (ENT-EQPT)
ENT-OC3	Requires associated HIF unit to be assigned (ENT-EQPT)
ENT-PORT	COA301 is required for CRAFT2 and X25PORT ports; COA302 is required for SE2A port
ENT-SDCC	Supporting facility is required to be assigned first (ENT-OC3 or ENT-SML command)
ENT-SECU-USER	No prerequisites
ENT-SML	MAINT1 port requires NEPA to be assigned (no action required); MAINT2 port requires NEPB to be assigned (FUTURE)
ENT-T1	Associated drop group equipment (DMI and VTG) must be assigned (ENT-EQPT command)
ENT-T3	Associated drop group equipment (LIF3 and LDR3) must be assigned (ENT-EQPT command)
INH-AUTORST	No prerequisites
INH-DGN-EQPT	Equipment must be assigned (ENT-EQPT command)
INH-LPBK-T1	Facility must be assigned (ENT-T1 command)
INH-MSG-ALL	No prerequisites
INH-PMREPT-ALL	No prerequisites



**Table A. 1603/12 SM Command Entry Prerequisites (cont)**

<b>COMMAND</b>	<b>PREREQUISITES</b>
INH-PMREPT-EC1	Facility must be assigned (ENT-EC1 command) and performance monitoring previously allowed (ALW-PMREPT-EC1 command)
INH-PMREPT-EQPT	Equipment must be assigned (ENT-EQPT command) and performance monitoring previously allowed (ALW-PMREPT-EQPT command)
INH-PMREPT-OC3	Facility must be assigned (ENT-OC3 command) and performance monitoring previously allowed (ALW-PMREPT-OC3 command)
INH-PMREPT-STS1	Parent OC-3 facility must be assigned (ENT-OC3 command) and performance monitoring previously allowed (ALW-PMREPT-STS1 command)
INH-PMREPT-SYNCN	Clock unit (CLK) must be assigned (ENT-EQPT) and performance monitoring previously allowed (ALW-PMREPT-SYNCN command)
INH-PMREPT-T1	T1 facility must be assigned (ENT-T1 command) and performance monitoring previously allowed (ALW-PMREPT-T1 command)
INH-PMREPT-T3	T3 facility must be assigned (ENT-T3 command) and performance monitoring previously allowed (ALW-PMREPT-T3 command)
INH-PMREPT-VT1	VT1 path must be assigned (parent STS1 STSPTYPE parameter must be set to VT, via ED-STS1 command) and performance monitoring previously allowed (ALW-PMREPT-VT1 command)
INH-SWDX-EQPT	Equipment must be assigned (ENT-EQPT command)
INH-SWTOPROTN-EQPT	VTG working and protection equipment must be assigned (ENT-EQPT command)
INH-SWTOWKG-EQPT	VTG working and protection equipment must be assigned (ENT-EQPT command)
INIT-LOG	No prerequisites
INIT-REG-EC1	Facility must be assigned (ENT-EC1 command)
INIT-REG-EQPT	Equipment must be assigned (ENT-EQPT command)
INIT-REG-OC3	Facility must be assigned (ENT-OC3 command)
INIT-REG-STS1	Parent OC-3 facility must be assigned (ENT-OC3 command)
INIT-REG-SYNCN	Clock unit (CLK) must be assigned (ENT-EQPT)
INIT-REG-T1	T1 facility must be assigned (ENT-T1 command)
INIT-REG-T3	T3 facility must be assigned (ENT-T3 command)
INIT-REG-VT1	VT1 path must be assigned (parent STS1 STSPTYPE parameter must be set to VT, via ED-STS1 command)
INIT-SYS	No prerequisites
LOGOFF	User must be logged in (ACT-SECU-USER command)
OPR-ACO-COM	No prerequisites
OPR-EXT-CONT	Attributes of external control output must be set for CMD or E2A operation (SET-ATTR-CONT command)

**Table A. 1603/12 SM Command Entry Prerequisites (cont)**

<b>COMMAND</b>	<b>PREREQUISITES</b>
OPR-LPBK-EC1	Facility must be assigned (ENT-EC1 command) and in OOS-MT state (RMV-EC1 command)
OPR-LPBK-OC3	Facility must be assigned (ENT-OC3 command) and in OOS-MT state (RMV-OC3 command)
OPR-LPBK-T1	Facility must be assigned (ENT-T1 command) and in OOS-MT state (RMV-T1 command)
OPR-LPBK-T3	Facility must be assigned (ENT-T3 command) and in OOS-MT state (RMV-T3 command)
OPR-LSR	HIF unit must be assigned (ENT-EQPT command) and OC-3 entered (ENT-OC3 command)
OPR-PROTNSW-OC3	A and B sides of OC-3 facility must be assigned (ENT-OC3 command)
OPR-PROTNSW-STS1 (VSCC101 only)	Cross-connection must be assigned (ENT-CRS-STS1 command) and Ring-type cross-connection
OPR-PROTNSW-VT1 (VSCC101 only)	Cross-connection must be assigned (ENT-CRS-VT1 command) and Ring-type cross-connection
OPR-SYNCNSW	A and B side clock units must be assigned (ENT-EQPT command)
RD-MEM-ADRS	Equipment must be assigned (ENT-EQPT command)
RD-SYCN	Clock unit(s) (CLK) must be assigned (ENT-EQPT command)
RLS-EXT-CONT	Control must be operated (OPR-EXT-CONT command)
RLS-LPBK-EC1	Loopback must be operated (OPR-LPBK-EC1 command)
RLS-LPBK-OC3	Loopback must be operated (OPR-LPBK-OC3 command)
RLS-LPBK-T1	Loopback must be operated (OPR-LPBK-T1 command)
RLS-LPBK-T3	Loopback must be operated (OPR-LPBK-T3 command)
RLS-PROTNSW-OC3	Protection switch must be operated (OPR-PROTNSW-OC3 command)
RLS-PROTNSW-STS1 (VSCC101 only)	Protection switch must be operated (OPR-PROTNSW-STS1 command)
RLS-PROTNSW-VT1 (VSCC101 only)	Protection switch must be operated (OPR-PROTNSW-VT1 command)
RLS-SYNCNSW	Sync switch must be operated (OPR-SYNCNSW command)
RMV-BITS	BITS facility must be assigned (ENT-BITS) and in service (pst=IS)
RMV-EC1	EC1 facility must be assigned (ENT-EC1) and in service (pst=IS)
RMV-EQPT	Equipment must be assigned (ENT-EQPT) and in service (pst=IS)
RMV-OC3	OC-3 facility must be assigned (ENT-OC3) and in service (pst=IS)
RMV-SML	SML facility must be assigned (ENT-SML) and in service (pst=IS)
RMV-T1	T1 facility must be assigned (ENT-T1) and in service (pst=IS)
RMV-T3	T3 facility must be assigned (ENT-T3) and in service (pst=IS)

**Table A. 1603/12 SM Command Entry Prerequisites (cont)**

<b>COMMAND</b>	<b>PREREQUISITES</b>
RST-BITS	BITS facility must be OOS-MT:MAN (RMV-BITS command)
RST-EC1	EC1 facility must be OOS-MT:MAN (RMV-EC1 command)
RST-EQPT	Equipment must be OOS-MT:MAN (RMV-EQPT command)
RST-OC3	OC-3 facility must be OOS-MT:MAN (RMV-OC3 command)
RST-SML	SML facility must be OOS-MT:MAN (RMV-SML command)
RST-T1	T1 facility must be OOS-MT:MAN (RMV-T1 command)
RST-T3	T3 facility must be OOS-MT:MAN (RMV-T3 command)
SET-ACO-COM	No prerequisites
SET-ATTR-BITS	BITS facility must be assigned (ENT-BITS)
SET-ATTR-COM	No prerequisites
SET-ATTR-CONT	No prerequisites
SET-ATTR-DLMAP	NE name (netid) must be in DLMAP
SET-ATTR-EC1	EC1 facility must be assigned (ENT-EC1)
SET-ATTR-ENV	No prerequisites
SET-ATTR-EQPT	Equipment must be assigned (ENT-EQPT)
SET-ATTR-OC3	OC-3 facility must be assigned (ENT-OC3)
SET-ATTR-PORT	Port must be assigned (ENT-PORT command)
SET-ATTR-RMT	NE name (netid) must be in DLMAP
SET-ATTR-SDCC	SDCC channel must be assigned (ENT-SDCC)
SET-ATTR-SML	SML facility must be assigned (ENT-SML)
SET-ATTR-STS1	Parent OC-3 facility must be assigned (ENT-OC3 command)
SET-ATTR-SYNCN	Clock unit (CLK) must be assigned (ENT-EQPT)
SET-ATTR-T1	T1 facility must be assigned (ENT-T1)
SET-ATTR-T3	T3 facility must be assigned (ENT-T3)
SET-ATTR-VT1	VT1 path must be assigned (parent STS1 STSPTYPE parameter must be set to VT, via ED-STS1 command)
SET-ATTR-X25	X25PORT must be assigned (ENT-PORT command)
SET-DAT	No prerequisites
SET-E2ADISP	No prerequisites
SET-NE-ALL	No prerequisites
SET-PMODE-EC1	EC1 facility must be assigned (ENT-EC1)
SET-PMODE-EQPT	Equipment must be assigned (ENT-EQPT)
SET-PMODE-OC3	OC-3 facility must be assigned (ENT-OC3 command)
SET-PMODE-SYNCN	Clock unit (CLK) must be assigned (ENT-EQPT)
SET-PMODE-T1	T1 facility must be assigned (ENT-T1)

**Table A. 1603/12 SM Command Entry Prerequisites (cont)**

<b>COMMAND</b>	<b>PREREQUISITES</b>
SET-PMODE-T3	T3 facility must be assigned (ENT-T3)
SET-PTHTRC-NE	No prerequisites
SET-SYCN	Clock unit (CLK) must be assigned (ENT-EQPT)
SET-TH-EC1	EC1 facility must be assigned (ENT-EC1)
SET-TH-OC3	OC-3 facility must be assigned (ENT-OC3 command)
SET-TH-STS1	Parent OC-3 facility must be assigned (ENT-OC3 command)
SET-TH-T1	T1 facility must be assigned (ENT-T1)
SET-TH-T3	T3 facility must be assigned (ENT-T3)
SET-TH-VT1	VT1 path must be assigned (parent STS1 STSPTYPE parameter must be set to VT, via ED-STS1 command)
SW-DX-EQPT	Duplex equipment must be assigned (ENT-EQPT command)
SW-TOPROTN-EQPT	VTG working and protection equipment must be assigned (ENT-EQPT command)
SW-TOWKG-EQPT	VTG working and protection equipment must be assigned (ENT-EQPT command)

# GENERAL

This document provides a summary of the provisionable parameters for the 1603/12 SM Network Element (NE). It also provides the factory defaults that exist when the NE is first turned up (powered-up). The NE data base is contained in non-volatile memory on the COA plug-in unit and has default values when shipped from the factory. If the COA has been used in any 1603/12 SM system before, the values may be different from the values listed here. If you wish to return the COA to its default condition, call Alcatel Customer Service (TNG-505).

Where listed, upper-case parameters are name-defined and lower-case parameters are position-defined when used in TL-1 commands (see TNG-501).

## PRIMARY STATE

The Primary state (pst) indicates the service availability of an entity (equipment, facility, etc). For most entities, the factory default Primary state is: Out-of-Service-Memory Administration-Unassigned (OOS-MA-UAS). This service state indicates that the entity is unavailable and must be entered into the data base before it can perform its intended function. However a minimum set of entities is assigned by default to allow Craft communication and provisioning of the start-up system. They either default to In-Service (pst = IS) or Out-of-Service-Memory Administration-Assigned (OOS-MA-AS).

The parameters listed, other than the Primary state, show the default values that are assigned after the entity is entered (assigned) into the NE data base using the appropriate ENT-xxx TL-1 command. The ENT-xxx command is applied to either the entity itself or, in some cases, to the supporting entity (STS-1 and VT paths, for example). When an entity is unassigned (pst = OOS-MA-UAS), its parameters do not appear if a retrieve (RTRV) is performed on the entity. The Primary state of the entities default to In-Service (IS) when entered (ENT command), except as noted.

The 1603/12 SM system monitors and reports alarms for the entities listed in the following tables. Since there are so many alarm types, the alarms, along with non-alarmed events and retrievable conditions, are listed in a separate document (TNG-507). The TNG-507 provides the following information for the alarm conditions: a brief description, default notification codes (Critical, Major, Minor, Not-Reported or Not-Alarmed), whether the alarm is service-affecting or not, the plug-in unit LED that is lighted when the alarm condition is active, and the Serial E2A Bit that is associated with the alarm condition.

A summary of provisionable parameters is contained in the following tables:

<u>Description</u>	<u>Table-Page</u>
CLK Units Provisioning .....	A-3
COA Unit Provisioning .....	B-4
DMI Units Provisioning .....	C-5
HIF Units Provisioning .....	D-6
LIF Units Provisioning .....	E-7
LDR Units Provisioning .....	F-8
NEP Unit Provisioning .....	G-9
PWR Units Provisioning .....	H-10
VSCC20x Units Provisioning .....	I-11
VSCC101 Units Provisioning .....	J-12
VTG Units Provisioning .....	K-13
OC3 Facility Provisioning .....	L-14
OC3 Facility Alarm Thresholds .....	M-15
EC1 Facility Provisioning .....	N-16
EC1 Facility Alarm Thresholds .....	O-16
T1 Facility Provisioning .....	P-17
T1 Facility Alarm Thresholds .....	Q-17
T31 Facility Provisioning .....	R-18
T31 Facility Alarm Thresholds .....	S-18
STS1 Path Provisioning .....	T-19
STS1 Path Alarm Thresholds .....	U-20
VT1 Path Provisioning .....	V-21
VT1 Path Alarm Thresholds .....	W-21
Performance Monitoring Provisioning Parameters .....	X-22
STS1 Cross-Connections Provisioning .....	Y-23
VT1 Cross-Connections Provisioning .....	Z-24
BITS Facilities Provisioning .....	AA-24
SML Facilities Provisioning .....	AB-25
SDCC Provisioning .....	AC-25
PORT (CRAFT1, CRAFT2, SE2A, X25PORT) Provisioning .....	AD-26
X25 Protocol Stack Provisioning .....	AE-28
Security Provisioning .....	AF-28
Synchronization Provisioning .....	AG-30
DLMAP Provisioning .....	AH-31
Serial E2A Provisioning .....	AI-32

ISSUE 3	OCT 1994
ALCL 363-203-502	TNG
PAGE 2 of 32	509

**Table A. Equipment: CLK Units Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	CLKA, CLKB	Identifies unit to be provisioned
Equipment type (eqpttype)	CLK201, CLK202	Must match code of unit installed
Compatibility code (compat)	CLK201, CLK202	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	(Note 3)	Not applicable to this unit
Multiple parallel E2A (MULTI)	(Note 3)	Not applicable to this unit
Revertive switching (RVRTV)	Y (Yes), N (No)	Reverts to Side A unit if set to Yes
Primary state (pst) (See text)	<b>IS</b> (IS-NR), MA (OOS-MA-AS), (OOS-MA-UAS) MT (OOS-MT)	Factory default is In-Service (IS) when used in shared power SP101 shelf. If used in ADM150 shelf (two power supplies), primary state defaults to OOS-MA-UAS.
Secondary service state (sst)	AINS	Automatic In-Service upon insertion; select pst=MA for ENT-EQPT command if AINS is selected.

**NOTES:** 1. See DLP-204 for more provisioning information on the CLK units.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the CLK units, but will appear during command entry if using the prompt mode.

**Table B. Equipment: COA Unit Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	COA	Identifies unit to be provisioned
Equipment type (eqpttype)	COA301, COA302, COA401, COA402	Must match code of unit installed
Compatibility code (compat)	COA301, COA302	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	<b>CR</b> , MJ or MN	Two-character notification code for severity of frame alarm when NEP fails
Multiple parallel E2A (MULTI)	MULTI, <b>NOMULTI</b>	Parallel E2A (discrete alarms)
Revertive switching (RVRTV)	(Note 3)	Not applicable to this unit
Primary state (pst) (See text)	<b>IS</b> (IS-NR), MA (OOS-MA-AS), MT (OOS-MT)	Factory default is In-Service (IS)
Secondary service state (sst)	(Note 3)	Not applicable to this unit

**NOTES:** 1. See DLP-205 for more provisioning information on the COA unit.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the COA unit, but will appear during command entry if using the prompt mode.



**Table C. Equipment: DMI Units Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	DGx-DMly	Identifies unit to be provisioned
Equipment type (eqpttype)	DMI102	Must match code of unit installed
Compatibility code (compat)	DMI102	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	(Note 3)	Not applicable to this unit
Multiple parallel E2A (MULTI)	(Note 3)	Not applicable to this unit
Revertive switching (RVRTV)	Y (Yes), N (No)	Reverts to Side A unit if set to Yes
Primary state (pst) (See text)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-EQPT), defaults to In-Service (IS) if no pst parameter is chosen.
Secondary service state (sst)	AINS	Automatic In-Service upon insertion; select pst=MA for ENT-EQPT command if AINS is selected.

**NOTES:** 1. See DLP-206 for more provisioning information on the DMI units.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the DMI units, but will appear during command entry if using the prompt mode.

**Table D. Equipment: HIF Units Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	LGx-HIFy	Identifies unit to be provisioned
Equipment type (eqpttype)	HIF101, HIF102 HIF501, HIF502	Must match code of unit installed
Compatibility code (compat)	HIF101	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	(Note 3)	Not applicable to this unit
Multiple parallel E2A (MULTI)	(Note 3)	Not applicable to this unit
Revertive switching (RVRTV)	(Note 3)	Use ED-FFP-OC3 command to set OC3 line switching parameters
Primary state (pst) (See text)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-EQPT), defaults to In-Service (IS) if no pst parameter is chosen.
Secondary service state (sst)	AINS	Automatic In-Service upon insertion; select pst=MA for ENT-EQPT command if AINS is selected.

**NOTES:** 1. See DLP-207 for more provisioning information on the HIF units.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the HIF units, but will appear during command entry if using the prompt mode.

**Table E. Equipment: LIF Units Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	DGx-LIFy	Identifies unit to be provisioned
Equipment type (eqpttype)	LIF201 (EC1 drop) LIF301 (DS3 drop)	Must match code of unit installed
Compatibility code (compat)	LIF201 (EC1 drop) LIF301 (DS3 drop)	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	(Note 3)	Not applicable to this unit
Multiple parallel E2A (MULTI)	(Note 3)	Not applicable to this unit
Revertive switching (RVRTV)	Y (Yes), <b>N</b> (No)	Reverts to Side A unit if set to Yes
Primary state (pst) (See text)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-EQPT), defaults to In-Service (IS) if no pst parameter is chosen.
Secondary service state (sst)	AINS	Automatic In-Service upon insertion; select pst=MA for ENT-EQPT command if AINS is selected.

**NOTES:** 1. See DLP-218 for more provisioning information on the LIF units.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the LIF units, but will appear during command entry if using the prompt mode.

**Table F. Equipment: LDR Unit Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	DGx-LDRy-1	Identifies unit to be provisioned
Equipment type (eqptype)	LDR201 (EC1 drop) LDR301 (DS3 drop)	Must match code of unit installed
Compatibility code (compat)	LDR201 (EC1 drop) LDR301 (DS3 drop)	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	(Note 3)	Not applicable to this unit
Multiple parallel E2A (MULTI)	(Note 3)	Not applicable to this unit
Revertive switching (RVRTV)	(Note 3)	LDR unit switches with parent LIF unit; i.e., LDR-A is active when LIF-A is active, LDR-B is active when LIF-B is active
Primary state (pst) (See text)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-EQPT), defaults to In-Service (IS) if no pst parameter is chosen.
Secondary service state (sst)	AINS	Automatic In-Service upon insertion; select pst=MA for ENT-EQPT command if AINS is selected.

**NOTES:** 1. See DLP-219 for more provisioning information on the LDR units.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the LDR units, but will appear during command entry if using the prompt mode.

ISSUE 3	OCT 1994
ALCL 363-203-502	TNG
PAGE 8 of 32	509

**Table G. Equipment: NEP Unit Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	NEPA	Identifies unit to be provisioned
Equipment type (eqptype)	NEP301	Must match code of unit installed
Compatibility code (compat)	NEP301	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	(Note 3)	Not applicable to this unit
Multiple parallel E2A (MULTI)	(Note 3)	Not applicable to this unit
Revertive switching (RVRTV)	(Note 3)	Not applicable to this unit (requires NEP-B which is not supported by this software)
Primary state (pst) (See text)	<b>IS</b> (IS-NR), <b>MA</b> (OOS-MA-AS), <b>MT</b> (OOS-MT)	Factory default is In-Service (IS).
Secondary service state (sst)	(Note 3)	Not applicable to this unit

**NOTES:** 1. See DLP-208 for more provisioning information on the NEP unit.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the NEP unit, but will appear during command entry if using the prompt mode.

ISSUE 3	OCT 1994
ALCL 363-203-502	TNG
PAGE 9 of 32	509

**Table H. Equipment: PWR Unit Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	PWRA, PWRB, PWRC	Identifies unit to be provisioned
Equipment type (eqptype)	PWRA01 (SP101 shelf), or PWR801 (ADM150 shelf)	Must match code of unit installed
Compatibility code (compat)	PWRA01 or PWR801	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	(Note 3)	Not applicable to this unit
Multiple parallel E2A (MULTI)	(Note 3)	Not applicable to this unit
Revertive switching (RVRTV)	(Note 3)	Not applicable to this unit
Primary state (pst) (See text)	<b>IS</b> (IS-NR), <b>MA</b> (OOS-MA-AS), <b>MT</b> (OOS-MT)	Factory default is In-Service (IS) for all three PWRA01 units. IF ADM150 shelf, PWRA defaults to IS and PWRB defaults to OOS-MA-UAS
Secondary service state (sst)	(Note 3)	Not applicable to this unit

**NOTES:** 1. See DLP-209 for more provisioning information on the PWR unit.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the PWR unit, but will appear during command entry if using the prompt mode.

**Table I. Equipment: VSCC20x Units Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	VSCCA, VSCCB	Identifies unit to be provisioned
Equipment type (eqpttype)	VSCC201, VSCC202, VSCC203, VSCC204	Must match code of unit installed
Compatibility code (compat)	VSCC201, VSCC202, VSCC203, VSCC204	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	(Note 3)	Not applicable to this unit
Multiple parallel E2A (MULTI)	(Note 3)	Not applicable to this unit
Revertive switching (RVRTV)	(Note 3)	Not applicable to this unit
Primary state (pst) (See text)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-EQPT), defaults to In-Service (IS) if no pst parameter is chosen.
Secondary service state (sst)	AINS	Automatic In-Service upon insertion; select pst=MA for ENT-EQPT command if AINS is selected.

**NOTES:** 1. See DLP-210 for more provisioning information on the VSCC units.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the VSCC units, but will appear during command entry if using the prompt mode.

**Table J. Equipment: VSCC101 Unit Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	VSCCA, VSCCB	Identifies unit to be provisioned
Equipment type (eqptype)	VSCC101	Must match code of unit installed
Compatibility code (compat)	VSCC101	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	(Note 3)	Not applicable to this unit
Multiple parallel E2A (MULTI)	(Note 3)	Not applicable to this unit
Revertive switching (RVRTV)	Y (Yes), N (No)	Reverts to Side A unit if set to Yes
Primary state (pst) (See text)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-EQPT), defaults to In-Service (IS) if no pst parameter is chosen.
Secondary service state (sst)	AINS	Automatic In-Service upon insertion; select pst=MA for ENT-EQPT command if AINS is selected.

**NOTES:** 1. See DLP-210 for more provisioning information on the VSCC units.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the VSCC units, but will appear during command entry if using the prompt mode.



Table K. Equipment: VTG Unit Provisioning Options (Note 1)

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note 2)	COMMENTS
Access identification code (aid)	DGx-VTG-unit	Identifies unit to be provisioned
Equipment type (eqpttype)	VTG101	Must match code of unit installed
Compatibility code (compat)	VTG101	Forward compatibility of equipment with software
Notification code (NTFCNCDE)	(Note 3)	Not applicable to this unit
Multiple parallel E2A (MULTI)	(Note 3)	Not applicable to this unit
Revertive switching (RVRTV)	Y (Yes), N (No)	Reverts to main VTG units to keep protection VTG available
Primary state (pst) (See text)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-EQPT), defaults to In-Service (IS) if no pst parameter is chosen.
Secondary service state (sst)	AINS	Automatic In-Service upon insertion; select pst=MA for ENT-EQPT command if AINS is selected.

**NOTES:** 1. See DLP-211 for more provisioning information on the VTG unit.

2. Factory defaults are shown in **bold** typeface.

3. This parameter is not applicable for the VTG unit, but will appear during command entry if using the prompt mode.

Table L. OC3 Line Group Facility Provisioning Options (Note 1)

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note 2)	COMMENTS
Access identification code (aid)	LGx-OC3y	Identifies facility to be provisioned
(ALS)	Y (Yes) or N (No)	Enable/Disable Automatic Laser Shutdown (ALS) capability
(ALSMODE)	<b>AUTO</b> (Automatic) MAN (Manual)	Automatic/Manual Restart of Automatic Laser Shutdown (ALSMODE) capability
(ALSDELAY)	<b>60</b> ...300 (seconds)	Delay time of Automatic Restart of Automatic Laser Shutdown, in seconds
(AUTOAIS)	Y (Yes) or N (No)	Enable/Disable Automatic AIS (Alarm Insertion Signal) insertion for BERL-HT (Signal Fail Bit Error Ratio)
Primary state (pst)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-OC3), defaults to In-Service (IS) if no pst parameter is chosen.
Switching direction (swdirn)	<b>UNI</b> (Unidirectional) or BI (Bidirectional)	Direction of automatic protection switching; does not apply to Ring configuration
Switching mode (rvrtv)	Y (Yes) or N (No)	If enabled (Yes), line reverts to Side A; Does not apply to Ring configuration

**NOTES:** 1. See DLP-214 for more provisioning information on the OC3 facility.

2. Factory defaults are shown in **bold** typeface.

**Table M. OC3 Line Group Facility Alarm Thresholds**

MONITOR TYPE	DEFAULT		RANGE	DESCRIPTION
	15-MIN	1-DAY		
BERL-LT	7		5...9	Bit Error Ratio Line – low threshold (DGBER)
BERL-HT	4		3...4	Bit Error Ratio Line – high threshold (SFBER)
CVL	1328	13288	1...4,294,967,295	Coding violation count (line)
CVS	1328	13288	1...4,294,967,295	Coding violation count (section)
DSESL	2500		1...65535	Number of coding violations to make one SESL
DSESS	2500		1...65535	Number of coding violations to make one SESS
ESL	87	864	1...65535	Line Errored Seconds
ESS	87	864	1...65535	Section Errored Seconds
SEFS	2	17	1...65535	Severely Errored Framing Seconds – OOFs/COFAS
SESL	1	4	1...65535	Line Severely Errored Seconds
SESS	1	4	1...65535	Section Severely Errored Seconds
UASL	3	10	1...65535	Line Unavailable Seconds

**NOTE:** See RTP-001 for retrieving and setting the performance monitoring parameters on the OC3 facility.

**Table N. EC1 Drop Group Facility Provisioning Options (Note 1)**

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note 2)	COMMENTS
Access identification code (aid)	DGx-EC1-1	Identifies facility to be provisioned
(AUTOAIS)	Y (Yes) or N (No)	Enable or Disable automatic AIS insertion for BERL-HT condition
(LINEBLDOUT)	Y (Yes) or N (No)	Enable or Disable line build-out
Primary state (pst)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-EC1), defaults to In-Service (IS) if no pst parameter is chosen.

**NOTES:** 1. See DLP-222 for more provisioning information on the EC1 facility.

2. Factory defaults are shown in **bold** typeface.

**Table O. EC1 Facility Alarm Thresholds**

MONITOR TYPE	DEFAULT		RANGE	DESCRIPTION
	15-MIN	1-DAY		
BERL-LT	7		5...9	Bit Error Ratio Line -- low threshold (DGBER)
BERL-HT	4		3...4	Bit Error Ratio Line -- high threshold (SFBER)
CVL	1328	13288	1...4,294,967,295	Coding Violation Count -- Line
CVS	1328	13288	1...4,294,967,295	Coding Violation Count -- Section
BPV	1328	13288	1...4,294,967,295	Bipolar violations
DSESL	2500		1...65535	Number of coding violations to make one SESL
DSESS	2500		1...65535	Number of coding violations to make one SESS
ESL	87	864	1...65535	Line Errored Seconds
ESS	87	864	1...65535	Section Errored Seconds
SEFS	2	17	1...65535	Severely Errored Framing Seconds -- OOFs/COFAS
SESL	1	4	1...65535	Line Severely Errored Seconds
SESS	1	4	1...65535	Section Severely Errored Seconds
UASL	3	10	1...65535	Line Unavailable Seconds

**NOTE:** See RTP-008 for retrieving and setting the performance monitoring parameters on the EC1 facility.

ISSUE 3	OCT 1994
ALCL 363-203-502	TNG
PAGE 16 of 32	509

**Table P. T1 (DS1) Drop Group Facility Provisioning Options (Note 1)**

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note 2)	COMMENTS
Access identification code (aid)	DGx-T1-ds1port	Identifies facility to be provisioned
(EQLZ)	<b>0</b> ...655	Equalization in feet for 22 gauge. See DLP-212 for 26 gauge
(LINECDE)	<b>AMI</b> or B8ZS	DS1 Line Code; Alternate Mark Inversion or Bipolar with 8 Zero Substitution
(PTRSET)	<b>Y</b> (Yes) or N (No)	Reset mux pointer to 12. Should always be set to Yes to allow bit-stuffing for asynchronous DS1s
(ESCALATEAIS)	Y (Yes) or <b>N</b> (No)	Escalate DS1 LOS to VT1 AIS. Should only be set to Yes when used at double hubbed NEs for interconnecting rings
Primary state (pst)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-T1), defaults to In-Service (IS) if no pst parameter is chosen.

**NOTES:** 1. See DLP-212 for more provisioning information on the T1 facility.

2. Factory defaults are shown in **bold** typeface.

**Table Q. DS1 Facility Alarm Thresholds**

MONITOR TYPE	DEFAULT		RANGE	DESCRIPTION
	15-MIN	1-DAY		
BPV	12240	133400	1...4,294,967,295	Bipolar violations
ESL	65	648	1...65535	Line Errored Seconds
SESL	10	100	1...65535	Line Severely Errored Seconds
BERL-HT	4		3...6	Bit Error Ratio Line – high threshold (SFBER)

**NOTE:** See RTP-004 for retrieving and setting the performance monitoring parameters on the T1 facility.

Table R. T3 (DS3) Drop Group Facility Provisioning Options (Note 1)

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note 2)	COMMENTS
Access identification code (aid)	DGx-T3-1	Identifies facility to be provisioned
(ESCALATEAIS_T3)	Y (Yes) or N (No)	Escalate DS3 LOS or LOC to STS1 AIS
(LINEBLDOUT)	Y (Yes) or N (No)	Enable or Disable line build-out
Primary state (pst)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-T3), defaults to In-Service (IS) if no pst parameter is chosen.

**NOTES:** 1. See DLP-224 for more provisioning information on the T3 facility.

2. Factory defaults are shown in **bold** typeface.

Table S. DS3 Facility Alarm Thresholds

MONITOR TYPE (mont3th)	DEFAULT		RANGE	DESCRIPTION
	15-MIN	1-DAY		
BERL-HT	4		4...9	Bit Error Ratio Line -- high threshold
BPV	387	3865	1...4,294,967,295	Bipolar violations
DSESL	44		1...65535	Number of coding violations to make one SESL
ESL	25	250	1...65535	Line Errored Seconds
SESL	4	40	1...65535	Line Severely Errored Seconds

**NOTE:** See RTP-009 for retrieving and setting the performance monitoring parameters on the T3 facility.

**Table T. STS1 Path Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	LGx-STs1-stspath, or DGy-STs1-1	Identifies path to be provisioned
STS path payload type (stsptype)	<b>STS</b> or VT	Selecting VT terminates the STS1 path (required for VT-type cross-connections)
VT payload type (VTTYPE)	<b>VT1.5</b>	Applicable only when stsptype = VT
(VTPJCSEL)	<b>1...28</b>	VT # for VT pointer justification accumulation, applicable only when stsptype = VT
(EXPTRC)	(null)	Expected path trace string. This string may be 0 - 64 alphacharacters in length.
(AUTOVTRINGAIS)	<b>Y</b> (Yes) or <b>N</b> (No)	Automatically transmit VT path AIS upon detection of STS BERP-HT
(SPEMODE)	<b>AIS</b> or UEQ	Determines what signal (AIS or UEQ) the NE generates for unconnected VT1 and STS1 paths. Set to same value for all VT1 and STS1 paths (SET-NE-ALL command)
Primary state (pst)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When parent facility is assigned, the STS1 path's primary state becomes OOS-MA-AS.

**NOTES:** 1. See DLP-216 for more provisioning information on the STS1 path.

2. Factory defaults are shown in **bold** typeface.

**Table U. STS1 Path AlarmThresholds**

MONITOR TYPE	DEFAULT		RANGE	DESCRIPTION
	15-MIN	1-DAY		
BERP-HT	4		3...4	Bit Error Ratio Path – high threshold (SFBER)
BERP-LT	7		5...9	Bit Error Ratio Path – low threshold (DGBER)
CVP	433	4330	1...4,294,967,295	Coding Violation Count – Path (near end or far end)
DSESP	2400		1...65535	Number of coding violations to make one SESP (one threshold used by both near end or far end counts)
ESP	87	864	1...65535	STS Path Errored Seconds (near end or far end)
PJC	433	4330	1...4,294,967,295	STS Pointer Justification Counter
SESP	1	4	1...65535	STS Path Severely Errored Seconds (near end or far end)
UASP	3	10	1...65535	STS Path Unavailable Seconds (near end)

**NOTE:** See RTP-002 for retrieving and setting the performance monitoring parameters on the STS1 path.



**Table V. VT1 Path Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	LGx-VT1-stspath- vtpath or DGy-VT1-1-vtpath	Identifies path to be provisioned
(SPEMODE)	<b>AIS</b> or UEQ	Determines what signal (AIS or UEQ) the NE generates for unconnected VT1 and STS1 paths. Set to same value for all VT1 and STS1 paths (SET-NE-ALL command)
Primary state (pst)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). Path becomes assigned (OOS-MA-AS) when parent STS path is provisioned for VT payload (stspath=VT), or when DMI unit is assigned (VT paths to drop group equipped for DS1 ports)

**NOTES:** 1. See DLP-216 for more provisioning information on the STS1 path.

2. Factory defaults are shown in **bold** typeface.

**Table W. VT1 Path Alarm Thresholds**

<b>MONITOR TYPE</b>	<b>DEFAULT</b>		<b>RANGE</b>	<b>DESCRIPTION</b>
	<b>15-MIN</b>	<b>1-DAY</b>		
CVP	15	146	1...4,294,967,295	Coding violation count – path
DSESP	600		1...65535	Number of coding violations to make one SESP (one threshold used by both near end or far end counts)
ESP	87	864	1...65535	VT Path Errored Seconds (VTG DMs only – near end or far end)
PJC	15	146	1...65535	VT Pointer Justification Counter
SESP	1	4	1...65535	VT Path Severely Errored Seconds (VTG DMs only – near end or far end)
UASP	3	10	1...65535	VT Path Unavailable Seconds (VTG DMs only – near end)

**NOTE:** See RTP-003 for retrieving and setting the performance monitoring parameters on VT1 path.

<b>ISSUE 3</b>	<b>OCT 1994</b>
<b>ALCL 363-203-502</b>	<b>TNG</b>
<b>PAGE 21 of 32</b>	<b>509</b>

**Table X. Performance Monitoring Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
<b>Equipment</b> (Also see RTP-005)		
For Default Threshold Levels – None (no thresholds for Protection Switch Count)		
PM time-of-day to start (pmdaystart)	<b>0</b> (midnight)...23	Time of day to start accumulating PM counts
<b>OC3</b> (Also see RTP-001)		
For Default Threshold Levels, see Table M		
PM state (pmstate)	<b>ON</b> or OFF	For pmtypes – Path, Line and Section
PM time-of-day to start (pmdaystart)	<b>0</b> (midnight)...23	Time of day to start accumulating PM counts
<b>EC1</b> (Also see RTP-008)		
For Default Threshold Levels, see Table O		
PM state (pmstate)	<b>ON</b> or OFF	For pmtypes – Path, Line and Section
PM time-of-day to start (pmdaystart)	<b>0</b> (midnight)...23	Time of day to start accumulating PM counts
<b>T1</b> (Also see RTP-004)		
For Default Threshold Levels, see Table Q		
PM state (pmstate)	<b>ON</b> or OFF	For pmtypes – Path and Line
PM time-of-day to start (pmdaystart)	<b>0</b> (midnight)...23	Time of day to start accumulating PM counts
<b>T3</b> (Also see RTP-009)		
For Default Threshold Levels, see Table S		
PM state (pmstate)	<b>ON</b> or OFF	For pmtypes – Path and Line
PM time-of-day to start (pmdaystart)	<b>0</b> (midnight)...23	Time of day to start accumulating PM counts
<b>STS1</b> (Also see RTP-002)		
For Default Threshold Levels, see Table U		
<b>VT1</b> (Also see RTP-003)		
For Default Threshold Levels, see Table W		
<b>NESYNC</b> (Also see RTP-006)		
For Default Threshold Levels – None (no thresholds)		
PM time-of-day to start (pmdaystart)	<b>0</b> (midnight)...23	Time of day to start accumulating PM counts

**NOTES:** 1. *Scheduled reporting of performance monitoring is inhibited by default for all entities.*

2. *Factory defaults are shown in **bold** typeface.*

ISSUE 3	OCT 1994
ALCL 363-203-502	TNG
PAGE 22 of 32	509

Table Y. STS1 Cross-Connection Provisioning Options (Note 1)

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note 2)	COMMENTS
Access identification code (aidfrom, aidto)	LGx-STs1-stspath, DGy-STs1-1, or DGy-T3-1	Identifies end-point STS1 paths of the cross-connection (can be mapped to the DS3 port using the DGy-T3-1 aid format)
cross-connection type (cctype)	1WAY, <b>2WAY</b> , 2WAYPR, 2WAYBR, or 1WAYPR	2WAYPR, 2WAYBR and 1WAYPR are ring cross-connections and require NE to be running Ring (ADR) software
(WTSDEL)	<b>IMMED</b> or DELAY (Immediately)	Wait-to-switch delay for FFP selector. Set to same value for all VT1 and STS1 FFP selectors (SET-NE-ALL command)
(PREF)	LG1 or <b>LG2</b>	Line group reference of FFP selector for revertive switching, if enabled
(RVRTV)	Y (Yes) or <b>N</b> (No)	Revertive switching mode of FFP selector, revertive (Yes) or nonrevertive (No)
(RVTWTR)	0...12 (default= <b>5</b> )	Wait-to-restore delay for revertive switching, in minutes

- NOTES:** 1. See DLP-220 (STS1) for more provisioning information on cross-connections.  
 2. Factory defaults are shown in **bold** typeface.

**Table Z. VT1 Cross-Connection Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aidfrom, aidto)	LGx-VT1-stspath-vpath, DGy-VT1-1-vpath, or DGy-T1-ds1port	Identifies end-point VT1 paths of the cross-connection (can be mapped to the T1 port using the DGy-T1-ds1port aid format)
cross-connection type (cctype)	1WAY, <b>2WAY</b> , 2WAYPR, 2WAYBR, or 1WAYPR	2WAYPR, 2WAYBR and 1WAYPR are ring cross-connections and require NE to be running Ring (ADR) software
(WTSDEL)	<b>IMMED</b> or DELAY (Immediately)	Wait-to-switch delay for FFP selector. Set to same value for all VT1 and STS1 FFP selectors (SET-NE-ALL command)
(PREF)	LG1 or <b>LG2</b>	Line group reference of FFP selector for revertive switching, if enabled
(RVRTV)	Y (Yes) or <b>N</b> (No)	Revertive switching mode of FFP selector, revertive (Yes) or nonrevertive (No)
(RVTWTR)	0...12 (default= <b>5</b> )	Wait-to-restore delay for revertive switching, in minutes

**NOTES:** 1. See DLP-221 (VT1) for more provisioning information on cross-connections.

2. Factory defaults are shown in **bold** typeface.

**Table AA. BITS Facility Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Access identification code (aid)	SYNCPRI, SYNCSEC	Identifies facility to be provisioned
Equalization (EQLZ)	<b>0</b> ...655	Equalization in feet for 22 gauge. See DLP-200 for 26 gauge
Line Code (LINECDE)	<b>AMI</b> or B8ZS	DS1 Line Code; Alternate Mark Inversion or Bipolar with 8 Zero Substitution
Frame format (FMT)	ESF or <b>SF</b>	Extended Super-frame or Super Frame
Primary state (pst)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-BITS), defaults to In-Service (IS) if no pst parameter is chosen.

**NOTES:** 1. See DLP-200 for more provisioning information on the BITS facility.

2. Factory defaults are shown in **bold** typeface.

ISSUE 3	OCT 1994
ALCL 363-203-502	TNG
PAGE 24 of 32	509

Table AB. SML Facility Provisioning Options (Note 1)

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note 2)	COMMENTS
Access identification code (aid)	MAINT1	Identifies facility to be provisioned
Equalization (EQLZ)	<b>0</b> ...655	Equalization in feet for 22 gauge. See DLP-200 for 26 gauge
Line Code (LINECDE)	<b>B8ZS</b>	DS1 Line Code; Bipolar with 8 Zero Substitution is only choice
Frame format (FMT)	ESF or <b>SF</b>	Extended Super-frame or Super Frame
Primary state (pst)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-SML), defaults to In-Service (IS) if no pst parameter is chosen.

- NOTES:** 1. See DLP-213 for more provisioning information on the SML facility.  
2. Factory defaults are shown in **bold** typeface.

Table AC. SDCC Provisioning Options (Note 1)

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note 2)	COMMENTS
Access identification code (aid)	LG1, LG2 or MAINT1	Identifies facility to be provisioned
L2SIDE	<b>USER</b> or NETWORK	Layer 2, side roles [The L2SIDE parameter must be different (NETWORK or USER) at the two NEs that terminate the SML facility.]
L2IF	1...7 ( <b>3</b> )	Layer 2, outstanding I frame
L2NOA	15...40 ( <b>30</b> )	Layer 2, no-activity timer in seconds
L2REX	2...5 ( <b>3</b> )	Layer 2, retransmission count
L2WAIT	15...45 ( <b>20</b> )	waiting acknowledgement timer, T200, one unit corresponds to 100 msec
Primary state (pst)	IS (IS-NR), MA (OOS-MA-AS), <b>(OOS-MA-UAS)</b> MT (OOS-MT)	Factory default is OOS-MA-UAS (unassigned). When entered into service (ENT-SDCC), defaults to In-Service (IS) if no pst parameter is chosen.

- NOTES:** 1. See DLP-215 for more provisioning information on the SDCC.  
2. Factory defaults are shown in **bold** typeface.

ISSUE 3	OCT 1994
ALCL 363-203-502	TNG
PAGE 25 of 32	509

Table AD. PORT Provisioning Options

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note)	COMMENTS
<b>CRAFT1</b>		
Baud Rate (BAUD)	300, 1200, 2400, 4800, <b>9600</b> , 19200, AUTO_BAUD	
(BITS)	7 or <b>8</b>	Number of Bits
(PAR)	<b>NONE</b> , ODD or EVEN	Parity
(SBITS)	<b>1</b> , 1.5, 2	Stop Bits
(LWID)	10...132 (default = <b>80</b> )	Line Width in characters
(TYPE)	<b>VT100</b> or TTY	Terminal Type
(ECHO)	<b>Y</b> (Yes) or N (No)	local echo on (full duplex) or off (half duplex)
Primary state (pst)	IS (IS-NR), MA( <b>OOS-MA-AS</b> )	Factory default is OOS-MA-AS (assigned).
<b>CRAFT2</b>		
Baud Rate (BAUD)	300, 1200, 2400, 4800, <b>9600</b> , 19200, AUTO_BAUD	
(BITS)	7 or <b>8</b>	Number of Bits
(PAR)	<b>NONE</b> , ODD or EVEN	Parity
(SBITS)	<b>1</b> , 1.5, 2	Stop Bits
(LWID)	10...132 (default = <b>80</b> )	Line Width in characters
(TYPE)	<b>VT100</b> or TTY	Terminal Type
(ECHO)	<b>Y</b> (Yes) or N (No)	local echo on (full duplex) or off (half duplex)
Primary state (pst)	IS (IS-NR), MA( <b>OOS-MA-UAS</b> ) (OOS-MA-AS)	Factory default is OOS-MA-UAS (unassigned). When entered into service, port defaults to OOS-MA-AS (must specify pst=IS to place port into service)

**NOTE:** Factory defaults are shown in **bold** typeface.

Table AD. PORT Provisioning Options (cont)

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note)	COMMENTS
<b>SE2A</b> All parameters are fixed (not provisionable)		
Baud rate (BAUD)	<b>2400</b>	
(BITS)	<b>8</b>	No. of Bits
(PAR)	<b>ODD</b>	Parity
(SBITS)	<b>2</b>	Stop Bits
(LWID)	<b>80</b>	Line Width
(TYPE)	<b>TTY</b>	Terminal Type
<b>SE2A</b> (cont)		
(ECHO)	<b>N</b> (No)	local echo is disabled
Primary state (pst)	IS (IS-NR), MA ( <b>OOS-MA-UAS</b> ) (OOS-MA-AS)	Factory default is OOS-MA-UAS (unassigned). When entered into service, port defaults to OOS-MA-AS (must specify pst=IS to place port into service)
<b>X25PORT</b> All parameters are fixed (not provisionable)		
Baud rate (BAUD)	Depends on TX CLK signal on T-OPT pin	Baud Rate
(BITS)	<b>8</b>	No. of Bits
(PAR)	<b>NONE</b>	Parity
(SBITS)	<b>1</b>	Stop Bits
(LWID)	<b>80</b>	Line Width
(TYPE)	<b>VT100</b>	Terminal Type
(ECHO)	<b>N</b> (No)	local echo
Primary state (pst)	IS (IS-NR), MA ( <b>OOS-MA-UAS</b> ) (OOS-MA-AS)	Factory default is OOS-MA-UAS (unassigned). When entered into service, port defaults to OOS-MA-AS (must specify pst=IS to place port into service)

**NOTE:** Factory defaults are shown in **bold** typeface.

**Table AE. X25 Protocol Stack Provisioning Options**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note)</b>	<b>COMMENTS</b>
(L2AB)	<b>B</b>	Layer 2, A/B address assignment (Side A or B)
(L2N1)	<b>2104</b>	Layer 2, maximum frame size
(L2N2)	<b>7</b>	Layer 2, number of attempts
(L2T1)	<b>10</b>	Layer 2, acknowledgment timer
(L2T2)	<b>2</b>	Layer 2, response delay
(L2WS)	<b>7</b>	Layer 2, window size
(L3LT)	<b>DTE</b>	Layer 3, line type
(L3PS)	<b>128</b>	Layer 3, packet size (user data field)
(L3THCL)	<b>9600</b>	Layer 3, through-put class (baud rate)
(L3T10)	<b>60</b>	Layer 3, restart indication
(L3T12)	<b>60</b>	Layer 3, reset indication
(L3T20)	<b>180</b>	Layer 3, restart request
(L3T22)	<b>180</b>	Layer 3, reset request
(L3WS)	<b>2</b>	Layer 3, window size
Primary state (pst)	IS (IS-NR), MA ( <b>OOS-MA-UAS</b> ) (OOS-MA-AS)	Factory default is OOS-MA-UAS (unassigned). Stack is implicitly assigned when X25 port is assigned. Stack defaults to OOS-MA-AS (must edit stack using ED-X25 command to place stack into service)

**NOTE:** All X25 protocol stack parameters are fixed (not provisionable) except for the primary state (pst).

**Table AF. Security Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
<b>Calling Address Identifier (CID) Security Levels</b>		
(cid)	CRAFT, REMOTE, MAINT-OS, TEST-OS or MEMADM-OS	calling address identifier
(pcmaint)	0...7 ( <b>6</b> is default)	privilege code level for Maintenance privilege category (pc)
(pcprov)	0...7 ( <b>6</b> is default)	privilege code level for Provisioning pc
(pcsecu)	0...7 ( <b>6</b> is default)	privilege code level for Security pc

<b>ISSUE 3</b>	<b>OCT 1994</b>
<b>ALCL 363-203-502</b>	<b>TNG</b>
<b>PAGE 28 of 32</b>	<b>509</b>



Table AF. Security Provisioning Options (Note 1) (cont)

PARAMETER (TL-1 MNEMONIC)	OPTIONS (Note 2)	COMMENTS
<b>Calling Address Identifier (CID) Security Levels (cont)</b>		
(pctest)	0...7 ( <b>6</b> is default)	privilege code level for Test pc
(DURAL)	hh=0...99, mm=0...59, ss=0...59 ( <b>0-1-0</b> is default)	time interval to disable CID due to intrusion alert: hh-mm-ss, 0-0-0 disables this feature
(MINT)	<b>0</b> ...99	minimum time interval, in seconds, required between consecutive session set-up attempts, 0 disables this feature
(MXINV)	0...9 ( <b>5</b> is default)	maximum number of invalid session set-up attempts allowed before declaring an intrusion alert, 0 disables this feature
(TMOUT)	0...99 <b>30</b> for CRAFT, REMOTE <b>60</b> for MAINT-OS, TEST-OS, and MEMADM-OS	Time-out interval, in minutes, of interaction required on CID before session is terminated, 0 disables this feature
<b>Command Security Levels</b>		
(See TNG-510 for default security levels for TL-1 commands)		
<b>User Security Levels</b>		
(pcmaint)	0...7 ( <b>1</b> is default)	privilege code level for Maintenance privilege category (pc)
(pcprov)	0...7 ( <b>1</b> is default)	privilege code level for Provisioning pc
(pcsecu)	0...7 ( <b>1</b> is default)	privilege code level for Security pc
(pctest)	0...7 ( <b>1</b> is default)	privilege code level for Test pc
(PAGE)	0...999	Password aging interval in days; 0 disables
(UAGE)	0...999	User aging interval in days, 0 disables
(TMDIS)	Y (Yes) or N (No)	Ignore ED-SECU-CID time-out (TMOUT) interval

**NOTES:** 1. See NTP-004 for more provisioning information on security.

2. Factory defaults are shown in **bold** typeface.

**Table AG. Synchronization Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
<b>NE Synchronization (NESYNC)</b>		
PRICREF	(Note 3)	Primary reference
SECCREF	(Note 3)	Secondary reference
THIRDCREF	(Note 3)	Third reference
FOURTHCREF	(Note 3)	Fourth reference
FIFTHCREF	(Note 3)	Fifth reference
Primary state (pst)	IS (IS-NR), MA ( <b>OOS-MA-UAS</b> ) (OOS-MA-AS)	Factory default is OOS-MA-UAS (unassigned). NESYNC is implicitly assigned when CLK units are assigned
Sync Mode (syncnmode)	<b>NORM, FRNG,</b> HLDOVER, or FST	NORM (Normal) is default if external sync source is active, or FRNG (Free Running) is default if internal (INT) syncref is active
Sync Switch Mode (syncswmode)	<b>IMED</b> or DELAY	Immediate or delayed (2-3 sec) reference switch when LOF/OOF or BER threshold is exceeded
<b>BITS Output (BITSSYNC)</b>		
PRICREF	(Note 4)	Primary reference
SECCREF	(Note 5)	Secondary reference
Primary state (pst)	IS (IS-NR), MA ( <b>OOS-MA-UAS</b> ) (OOS-MA-AS)	Factory default is OOS-MA-UAS (unassigned). BITSSYNC is implicitly assigned when CLK units are assigned

**NOTES:** 1. See NTP-009 for provisioning synchronization.

2. Factory defaults are shown in **bold** typeface.

3. Synchronization sources available for NESYNC are:

*SYNCPRI (BITS primary input)*

*SYNCSEC (BITS secondary input)*

*DG1-1 (Drop Group 1 – Facility 1)*

*DG2-1 (Drop Group 2 – Facility 1)*

*DG3-1 (Drop Group 3 – Facility 1)*

*LG1 (Line Group 1)*

*LG2 (Line Group 2)*

*INT (Internal Stratum 3 clock on CLK unit, default).*

4. Synchronization sources available for PRICREF of BITSSYNC are:

*DG1-1 (Drop Group 1 – Facility 1)*

*DG2-1 (Drop Group 2 – Facility 1)*

*DG3-1 (Drop Group 3 – Facility 1)*

*LG1 (Line Group 1)*

*LG2 (Line Group 2)*

*NEREF (current source used by NESYNC, default).*

5. Synchronization source available for SECCREF of BITSSYNC is **NEREF** only.

<b>ISSUE 3</b>	<b>OCT 1994</b>
<b>ALCL 363-203-502</b>	<b>TNG</b>
<b>PAGE 30 of 32</b>	<b>509</b>

**Table AH. DLMAP Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
Network identification (netid)	1-20 alphanumeric characters ( <b>1603SM</b> )	assigns network name of NE, default netid (1603SM) applies only to local entry
Primary port (PRIPORT)	LG1, LG2, MAINT1, <b>NONE</b>	Primary port for network access to remote NE, applies only to entry for remote NE
Alternate port (ALTPORT)	LG1, LG2, MAINT1, <b>NONE</b>	Alternate port for network access to remote NE, applies only to entry for remote NE
(REPTRMT)	CONC, FCONC, RMT, <b>NONE</b>	Report autonomous messages and Far-end alarms function
(FEDISPNUM)	<b>0...32</b>	Far-end display number
(AFI)	X121-NZS, X121-ZS, E164-NZS, E164-ZS, LOCAL	Authority format identifier; X.121 format for public data network, E.164 format for ISDN network, or local format
(DOMNID)	3-digits (X.121), 1-digit (E.164), or <b>NONE</b> (LOCAL)	Domain Identifier; for X.121 enter Data country code (DCC), if E.164 enter ISDN country code.
(TERMID)	2-11 decimal digits (X.121), 1-14 decimal digits (E.164), or <b>NONE</b> if LOCAL	Terminal identifier; for X.121 enter National Number, if E.164 enter National Destination Code followed by Subscriber Number
(HODSP)	1-10 hex-digits (X.125 or E.164); 1-22 hex digits (LOCAL); or <b>NONE</b> to enter zero length string	High-order Domain Specific Part (DSP)
(ID)	6 hex digits	System identifier to identifier the NE within a routing area (subnetwork). The LAN ethernet address can be placed here. If AFI is LOCAL, enter NE address
(SEL)	<b>0...255</b>	Selector field (last octet) of the DSP; specifies the entity to be communicated with above the Network Layer in the SONET protocol. It is only meaningful in the End System.

**NOTES:** 1. See DLP-201 for more provisioning information on DLMAP.

2. Factory defaults are shown in **bold** typeface.

**Table AI. Serial E2A Provisioning Options (Note 1)**

<b>PARAMETER (TL-1 MNEMONIC)</b>	<b>OPTIONS (Note 2)</b>	<b>COMMENTS</b>
<b>Provisioning at E2A Concentrator</b>		
Remote Network identifier (rmtid)	1-20 alphanumeric characters	Network ID of contributor NE reporting to this Concentrator NE
(aide2a)	0...7	E2A address of contributor NE (should match E2ADISP number provisioned at Contributor NE)
<b>Provisioning at E2A Contributor</b>		
Concentrator Network identifier (conctid)	1-20 alphanumeric characters	Network ID of concentrator NE that contributor NE reports to
(dispnum)	0...7	E2A Display number of contributor NE

**NOTES:** 1. See DLP-202 for more provisioning information on Serial E2A.

2. Factory defaults are shown in **bold** typeface.

## GENERAL

This document provides a summary of the security mechanism provided by the 1603/12 SM Network Element (NE) to restrict either the intentional or inadvertent unauthorized use of input commands. Other security issues, such as physical security and the security mechanisms provided by the Operation Systems (OS) interfacing with the 1603/12 SM, are not covered here, but are assumed to be provided per local telephone practices.

The main purpose of command entry security is to restrict the access to the NE data base which stores the vital information concerning the operations and configuration of the NE. Inadvertent alterations to this data base can disrupt the traffic-carrying and communications ability of the NE and, ultimately, interrupt service. Restricting access to and action on the information stored in the NE data base to those who need this access privilege for the performance of their tasks is an effective security strategy to preserve the integrity of the NE data base. This strategy is called the policy of least user privilege or, sometimes, the need-to-know policy, as it grants all users the smallest set of privileges necessary to perform their tasks.

The general security features provided by the 1603/12 SM are categorized as follows:

- **Identification:** Identification is the process of recognizing a session requester's unique and (audible) identity, such as the user ID. The user ID is not confidential; it is the name by which a valid user is recognized by the NE. A user ID aging mechanism is available to disable a user ID after some extended period of non-use time.
- **Authentication:** Authentication is the process of verifying the claimed identity of the session requester. For a user login, this is done by the use of a password which must be entered after the user ID when logging in to the NE. This password is known only by the NE and the user. A password aging mechanism is available which requires periodic changing of a user's password. In the case of OS network access channels that use the three-layer protocol such as X.25, a network-level security (i.e., not end-to-end connection security) is provided by verifying the calling address that is delivered to the NE via the "call-set-up packet."
- **System Access Control:** System access control authorizes establishment of a login session and continuation of a session until logoff. System access (except for a limited set of commands) is allowed only to those users who are identified and authenticated. A session privilege level is established that is determined by the combination of the user and the channel (port) privilege levels.
- **Command Access Control:** Command access control provides the capability of denying access to certain commands depending on the comparison of the session privilege level and the command privilege level. This subject is explained in greater detail in the remainder of this section.

## GENERAL (cont)

- **Data and System Integrity:** Data integrity and system integrity deal with the consistency and reliability issues associated with the NE system and its data and software resources.
- **Security Log (Audit):** Security log provides tools to establish an audit trail. If a security breach is suspected, an audit trail may be used to investigate the breach.
- **Security Administration:** Security administration consists of proper activation, maintenance, and usage of the security features of the NE, conducted by the system administrator. It includes, among other things, overriding Alcatel-supplied defaults and managing the security data base (i.e., keeping up-to-date user logins, privilege codes for users, commands and calling channels/ports).

## CALLING CHANNEL IDENTIFIER (CID)

The Calling Channel Identifier (CID) describes what port or OS channel is used to access the NE. Two general classes of CIDs are available: user login and OS.

Local and remote user login access points are available. Local access consists of craft ports physically located at the NE. Remote login capability is provided over the SONET overhead channels to allow login capability at one NE while physically being located at another.

Operations performed on an NE can be tendered from centralized operations centers (OCs), often via Operations Systems (OSs). An OC may have a number of work groups that provide technical expertise and clearly defined assignment of responsibilities in a central location for the best use of human resources. To accommodate the different work groups, OS-channel recognition is provided by the NE. The OS channels provided by the 1603/12 SM are for maintenance (MAINT-OS), testing (TEST-OC), and memory administration (MEMADM-OS).

Certain security parameters are defined for each of the CIDs. A privilege code (described in more detail later) is assigned to each CID which is used for restricting access to commands that are outside of the CID's domain of responsibility. Also, certain monitoring parameters can be set for each CID such as: maximum number of invalid login attempts (MXINV), minimum time interval required between consecutive session setup attempts (MINT), inactivity time-out interval (TMOUT), and time interval over which the CID can be disabled due to an intrusion alert (DURAL).

ISSUE 2	JULY 1994
ALCL 363-203-502	TNG
PAGE 2 of 18	510

## PRIVILEGE CODES

The determination of whether a command can be executed is based on privilege codes. A privilege code can be associated with a command, a user, a port, or a (login) session. The Command Privilege Code (COPC) specifies the minimum privilege requirements for all who will be able to execute a given command. Each command has an associated COPC which is set up by a system default and maintained by the system administrator. The User Privilege Code (UPC) provides the user with a set of privileges which will eventually help determine which commands he can execute and where he stands in the system user hierarchy. Each user has an associated UPC which is assigned when he is entered into the system, and maintained by the system administrator. The Calling Address Identifier (CID, also known as port) Privilege Code (CAPC) is assigned to each network access point to provide a means of regulating the types of commands which can be executed through a given port. Each network access point to the NE has an associated CAPC assigned to it. The CAPC is initially set up by a system default and is maintained by the system administrator. Finally, the Session Privilege Code (SPC) is defined by a combination of the UPC and CAPC, just as the user session itself is defined by both the user who is logged in and the port with which he is accessing the NE.

Once all of these privilege codes have been established, the question of command execution versus denial is answered by a comparison of the command privilege code (COPC) and the session privilege code (SPC). In general, if the SPC is "greater-than" or "equal-to" the COPC, the command will be executed. If not, the command will be denied. Before more details of the comparison can be made, a more detailed look at the privilege code is in order.

## PRIVILEGE CATEGORIES

Each privilege code is made up of four categories, and each category contains a one-digit privilege level. The categories are defined as Maintenance (M), Provisioning (P), Security (S), and Test (T). These categories reflect the four basic categories of system TL-1 commands. The privilege levels for the four categories are concatenated into a single Privilege Code (PC):

PC = (M, P, S, T)

where: M, P, S, and T are the privilege levels for the respective categories.

## PRIVILEGE LEVELS

Each privilege category (M, P, S, and T) is assigned a privilege level that ranges from 0 to 7. Privilege levels from 0 to 7 can be assigned by the system administrator to user privilege codes (UPC), CID privilege codes (CAPC) and command privilege codes (COPC). The privilege levels (0 - 7) are defined as follows:

- **Level 7:** Level 7 is reserved for the system administrator and commands which can alter the integrity of the system.
- **Levels 3 - 6:** These levels are open and can be used by the system administrator to organize the user hierarchy as required by the application (e.g., supervisor, clerk).
- **Level 2:** Level 2 is the base level of a user who is considered logged into the system. This level includes basic commands which for security purposes should be executable by anyone who is allowed to login (includes most of the RTRV commands).
- **Level 1:** The Level 1 privilege is the lowest level and it is applied to all users who are "connected" to the system, but have not yet logged in. This level allows the user to execute the most basic commands such as RTRV-HDR (to retrieve the system header ), ACT-USER (to activate a user), and LOGOFF.
- **Level 0:** This level is assigned to a privilege category when it is not to be considered during the process of deciding whether to allow a user to execute a command.

## COMMAND EXECUTION

When a user enters a command, the NE's command processor must first decide whether the user has the proper privilege levels before allowing or denying the execution of the command. This is done by comparing each privilege category (M, P, S, and T) of the Session Privilege Code (SPC) and Command Privilege Code (COPC). When an SPC and a COPC are being compared, only the common categories are considered. A common category is one in which the both the SPC and COPC have a non-zero privilege level. In this way, a zero privilege level disables or disqualifies a category from the comparison. A zero value in the category for either the SPC or COPC causes the comparison process to skip to the next category with no immediate effect on the outcome. If a common category is found and the SPC's privilege level is greater-than or equal-to the COPC's privilege level, the comparison is considered successful and the next category is compared. The comparison is done for each privilege category until a comparison fails or all categories have been compared. In the case of a comparison failure, the comparison process is halted and the command's execution is denied.

ISSUE 2	JULY 1994
ALCL 363-203-502	TNG
PAGE 4 of 18	510



## COMMAND EXECUTION (cont)

At least one successful comparison must be found before the command can be executed. It is possible that a command could be denied execution even though none of the comparisons failed. This is possible if no common categories are found. For example, if a session user with an SPC = 5500 tries to execute a command with a COPC = 0003, the command would be denied, since the two privilege codes contain no common categories to be compared. Likewise, if a session user with an SPC = 5500 tries to execute a command with a COPC = 7003, the command would also be denied, since in its only common category, MAINT, the COPC (7) is greater than the SPC (5). On the other hand, if a session user with an SPC = 0500 tries to execute a command with a COPC = 6406, the command would be executed, since in the only common category, PROV, the SPC (5) is greater than the COPC (4).

Commands and users can be grouped by category. In the case of the COPC, the privilege level associated with each category determines to which categories the command belongs (e.g., COPC = 0005 would indicate this command is strictly a T command and the session user trying to execute it must have a minimum T privilege of 5). In the case of an SPC, the privilege level associated with each category determines which types of commands the session user can execute (e.g., SPC = 0070 implies that this session will be able to execute S commands of privilege levels up to 7). Table A, Page 9, lists the 1603/12 SM system TL-1 commands, their functional category and their default COPC levels.

## THE SUPERUSER AND A SUPERUSER

The "Superuser" is the system administrator who has a security privilege level of 7. No user in the system is able to delete the superuser. The superuser can create another user, with privilege levels equal to his own, who may also be considered a superuser. To distinguish between the two, they are referenced as The superuser (system administrator) and A superuser (created superuser). The difference is that The superuser can modify and delete A superuser, but A superuser cannot modify The superuser or any other created superuser (there can be more than one created). The superuser's user ID and password are provided by Alcatel and are programmed into the NE's factory-default software. The superuser's password can be changed but not its user ID. A superuser is simply a user ID with a user privilege code set to 7777.

## SECURITY TL-1 COMMANDS

Described in this section are the TL-1 commands associated with security administration. Only the commands available in Release 3 of the 1603/12 SM product are described. Other security related commands available in later releases will be added as applicable.

- **ACT-USER** This is the command for logging on to the NE. It should have a fairly low security privilege code since it must be executed by users who, prior to login, are provided only a default low level (connected) privilege. The recommended security code is 1111.
- **CANC-USER** This is the command executed by the user to logoff the NE. This command can also be used by A superuser or The superuser to log another user off the NE. Since this command must be executed by all users, its recommended security code is 1111.
- **DLT-SECU-USER** This command deletes a user from the system and can only be executed by The superuser or A superuser. The superuser can delete A superuser. The superuser cannot be deleted. This command allows deletion of one or a combination (by grouping) of users at the same time. Even if this command's security level is lowered, it can only be executed by successfully by A/The superuser. The recommended security code is 0070.
- **ED-SECU-CID** This command is used to edit or change the privilege code (CAPC) associated with a single or combination (grouping) of CIDs. Also, certain monitoring parameters can be set for each CID such as: maximum number of invalid login attempts (MXINV), minimum time interval required between consecutive session setup attempts (MINT), inactivity time-out interval (TMOUT), and time interval over which the CID can be disabled due to an intrusion alert (DURAL). This command should have a high security privilege code which would only allow A/The superuser to execute it. If the command privilege level is lowered, an internal mechanism prohibits a user from modifying the CID if his security privilege is lower than that of the CID. The recommended security code is 7777.
- **ED-SECU-CMD** This command is used to edit the privilege code (COPC) associated with a single or combination of commands. This command should have a high security privilege code which would only allow The/A superuser to execute it. But, if the command privilege level is lowered, an internal mechanism will prohibit a user from modifying the command if his security privilege is lower than that of the command. The recommended security code is 0070.

ISSUE 2	JULY 1994
ALCL 363-203-502	TNG
PAGE 6 of 18	510

## SECURITY TL-1 COMMANDS (cont)

- **ED-SECU-PID** This command is used by an user to edit his own password (private identifier). The user must enter his old password before he can change it. The recommended security code is 2222.
- **ED-SECU-USER** This command is used to edit the security parameters associated with a single or combination of users. This command permits changing a user's privilege code (UPC), user ID, and password. Parameters also can be set for password aging as well as user ID aging. This command should have a high security privilege code which would only allow The/A superuser to execute it. If the command privilege level is lowered, an internal mechanism will prohibit a user from modifying another user of equal or greater privilege. The superuser can modify A superuser, but The superuser cannot be modified by any other user. The recommended security code is 0070.
- **ENT-SECU-USER** This command is used to enter a new user and all associated parameters listed for the ED-SECU-USER command. This command should have a high security privilege code which would only allow The/A superuser to execute it. If the command privilege level is lowered, an internal mechanism will not allow a user to create another user with higher privileges than his own. The recommended security code is 0070.
- **RTRV-SECU-CID** This command is used to retrieve the security parameters associated with a single or combination of CIDs. This command should have a low security privilege code which would allow all users to execute it. Although a user may have sufficient privilege to execute the command, he may not have sufficient privilege to view all the requested data base information. An internal mechanism will not allow a user with a lower security privilege than that of the CID to actually retrieve it. For example, a user with a security privilege sufficient to execute this command, yet lower than all the CIDs, would get the "completed" message (verifying his execution privilege), but he would still not be able to see any CID data in output. The recommended security code is 2222.
- **RTRV-SECU-CMD** This command is used to retrieve the privilege code associated with a single or combination of commands. This command should have a low security privilege code which would allow all users to execute it. An internal mechanism will not allow a user to retrieve information for a command which has a higher security privilege level than his own. In this case, provided a user has sufficient command privilege, he could execute the command, but would only see data pertaining to those commands which he is sufficiently privileged to see. The recommended security code is 2222.

ISSUE 2	JULY 1994
ALCL 363-203-502	TNG
PAGE 7 of 18	510

## SECURITY TL-1 COMMANDS (cont)

- **RTRV-SECU-UPC** This command is executed by a user to retrieve his own User Privilege Code (UPC). The recommended security code is 2222.
- **RTRV-SECU-USER** This command is used to retrieve the security parameters associated with a single or combination of users. This command should have a low security privilege code which would allow all users to execute it. An internal mechanism will not allow a user to retrieve data base information on users who have a higher security privilege than his own. For example, a user with a security privilege sufficient to execute this command, yet lower than some of the other users, would get the "completed" message (verifying his execution privilege), but he would still not be able to see any information on users with a security privilege higher than his own; he would only see information for users of equal or lower security privilege. The recommended security code is 2222.
- **LOGOFF** This is another command for logging off the NE. The recommended security code is 1111.

ISSUE 2	JULY 1994
ALCL 363-203-502	TNG
PAGE 8 of 18	510

**Table A. 1603/12 SM Commands and Default Command Privilege Codes (COPC)**

COMMAND	FUNCTIONAL CATEGORY	COPC (MPST)
ACT-USER	MPST	1111
ALW-AUTORST	M---	2000
ALW-DGN-EQPT	M---	2000
ALW-LPBK-T1	M---	2000
ALW-MSG-ALL	M---	2000
ALW-PMREPT-ALL	M---	2000
ALW-PMREPT-EC1	M---	2000
ALW-PMREPT-EQPT	M---	2000
ALW-PMREPT-OC3	M---	2000
ALW-PMREPT-STS1	M---	2000
ALW-PMREPT-SYCN	M---	2000
ALW-PMREPT-T1	M---	2000
ALW-PMREPT-T3	M---	2000
ALW-PMREPT-VT1	M---	2000
ALW-SWDX-EQPT	M---	2000
ALW-SWTOPROTN-EQPT	M---	2000
ALW-SWTOWKG-EQPT	M---	2000
CANC-USER	MPST	1111
CLR-E2ADISP	-P--	0200
CONFIG-SYS	-P--	0700
CPY-MEM	M---	7000
DGN-EQPT	--T	2002
DLT-BITS	-P--	0200
DLT-CRS-STS1	-P--	0200
DLT-CRS-VT1	-P--	0200
DLT-DLMAP	-P--	0200
DLT-E2AMAP	-P--	0200
DLT-EC1	-P--	0200
DLT-EQPT	-P--	0200
DLT-OC3	-P--	0200
DLT-PORT	MP--	2200

**NOTE:** For Functional Category and Default COPC columns: M = Maintenance, P = Provisioning, S = Security, and T = Testing.

**Table A. 1603/12 SM Commands and Default Command Privilege Codes (COPC) (cont)**

COMMAND	FUNCTIONAL CATEGORY	COPC (MPST)
DLT-SDCC	-P--	0200
DLT-SECU-USER	--S-	0070
DLT-SML	-P--	0200
DLT-T1	-P--	0200
DLT-T3	-P--	0200
ED-BITS	-P--	0200
ED-CRS-STS1	-P--	0200
ED-CRS-VT1	-P--	0200
ED-DLMAP	-P--	0200
ED-EC1	-P--	0200
ED-EQPT	-P--	0200
ED-FFP-OC3	-P--	0200
ED-FFP-STS1	-P--	0200
ED-FFP-VT1	-P--	0200
ED-OC3	-P--	0200
ED-PORT	MP--	2200
ED-SDCC	-P--	0200
ED-SECU-CID	--S-	7777
ED-SECU-CMD	--S-	0070
ED-SECU-PID	--S-	2222
ED-SECU-USER	--S-	0070
ED-SML	-P--	0200
ED-STS1	-P--	0200
ED-SYNCN	-P--	0200
ED-T1	-P--	0200
ED-T3	-P--	0200
ED-VT1	-P--	0200
ED-X25	-P--	0200
ENT-BITS	-P--	0200
ENT-CRS-STS1	-P--	0200
ENT-CRS-VT1	-P--	0200

**NOTE:** For Functional Category and Default COPC columns: M = Maintenance, P = Provisioning, S = Security, and T = Testing.

**Table A. 1603/12 SM Commands and Default Command Privilege Codes (COPC) (cont)**

COMMAND	FUNCTIONAL CATEGORY	COPC (MPST)
ENT-DLMAP	-P--	0200
ENT-E2AMAP	-P--	0200
ENT-EC1	-P--	0200
ENT-EQPT	-P--	0200
ENT-OC3	-P--	0200
ENT-PORT	MP--	2200
ENT-SDCC	-P--	0200
ENT-SECU-USER	--S-	0070
ENT-SML	-P--	0200
ENT-T1	-P--	0200
ENT-T3	-P--	0200
INH-AUTORST	M---	2000
INH-DGN-EQPT	M---	2000
INH-LPBK-T1	M---	2000
INH-MSG-ALL	M---	2000
INH-PMREPT-ALL	M---	2000
INH-PMREPT-EC1	M---	2000
INH-PMREPT-EQPT	M---	2000
INH-PMREPT-OC3	M---	2000
INH-PMREPT-STS1	M---	2000
INH-PMREPT-SYNCN	M---	2000
INH-PMREPT-T1	M---	2000
INH-PMREPT-T3	M---	2000
INH-PMREPT-VT1	M---	2000
INH-SWDX-EQPT	M---	2000
INH-SWTOPTN-EQPT	M---	2000
INH-SWTOWKG-EQPT	M---	2000
INIT-LOG	M-S-	7070
INIT-REG-EC1	M---	2000
INIT-REG-EQPT	M---	2000
INIT-REG-OC3	M---	2000

**NOTE:** For Functional Category and Default COPC columns: M = Maintenance, P = Provisioning, S = Security, and T = Testing.

**Table A. 1603/12 SM Commands and Default Command Privilege Codes (COPC) (cont)**

<b>COMMAND</b>	<b>FUNCTIONAL CATEGORY</b>	<b>COPC (MPST)</b>
INIT-REG-STS1	M---	2000
INIT-REG-SYNCN	M---	2000
INIT-REG-T1	M---	2000
INIT-REG-T3	M---	2000
INIT-REG-VT1	M---	2000
INIT-SYS	M---	7000
LOGOFF	MPST	1111
OPR-ACO-COM	M---	2000
OPR-EXT-CONT	M---	2000
OPR-LPBK-EC1	---T	2002
OPR-LPBK-OC3	---T	2002
OPR-LPBK-T1	---T	2002
OPR-LPBK-T3	---T	2002
OPR-LSR	M---	2000
OPR-PROTNSW-OC3	M---	2000
OPR-PROTNSW-STS1	M---	2000
OPR-PROTNSW-VT1	M---	2000
OPR-SYNCNSW	M---	2000
RD-MEM-ADRS	M---	2000
RD-SYNCN	M---	2000
RLS-EXT-CONT	M---	2000
RLS-LPBK-EC1	---T	2002
RLS-LPBK-OC3	---T	2002
RLS-LPBK-T1	---T	2002
RLS-LPBK-T3	---T	2002
RLS-PROTNSW-OC3	M---	2000
RLS-PROTNSW-STS1	M---	2000
RLS-PROTNSW-VT1	M---	2000
RLS-SYNCNSW	M---	2000
RMV-BITS	M---	2000
RMV-EC1	M---	2000

**NOTE:** For Functional Category and Default COPC columns: M = Maintenance, P = Provisioning, S = Security, and T = Testing.



**Table A. 1603/12 SM Commands and Default Command Privilege Codes (COPC) (cont)**

<b>COMMAND</b>	<b>FUNCTIONAL CATEGORY</b>	<b>COPC (MPST)</b>
RMV-EQPT	M---	2000
RMV-OC3	M---	2000
RMV-SML	M---	2000
RMV-T1	M---	2000
RMV-T3	M---	2000
RST-BITS	M---	2000
RST-EC1	M---	2000
RST-EQPT	M---	2000
RST-OC3	M---	2000
RST-SML	M---	2000
RST-T1	M---	2000
RST-T3	M---	2000
RTRV-ALM-ALL	M---	1111
RTRV-ALM-BITS	M---	1111
RTRV-ALM-COM	M---	1111
RTRV-ALM-DLMAP	M---	1111
RTRV-ALM-EC1	M---	1111
RTRV-ALM-ENV	M---	1111
RTRV-ALM-EQPT	M---	1111
RTRV-ALM-OC3	M---	1111
RTRV-ALM-PORT	M---	1111
RTRV-ALM-RMT	M---	1111
RTRV-ALM-SDCC	M---	1111
RTRV-ALM-SML	M---	1111
RTRV-ALM-STS1	M---	1111
RTRV-ALM-SYNCN	M---	1111
RTRV-ALM-T1	M---	1111
RTRV-ALM-T3	M---	1111
RTRV-ALM-VT1	M---	1111
RTRV-ALM-X25	M---	1111
RTRV-ATTR-BITS	M---	2000

**NOTE:** For Functional Category and Default COPC columns: M = Maintenance, P = Provisioning, S = Security, and T = Testing.

**Table A. 1603/12 SM Commands and Default Command Privilege Codes (COPC) (cont)**

COMMAND	FUNCTIONAL CATEGORY	COPC (MPST)
RTRV-ATTR-COM	M---	2000
RTRV-ATTR-CONT	M---	2000
RTRV-ATTR-DLMAP	M---	2000
RTRV-ATTR-EC1	M---	2000
RTRV-ATTR-ENV	M---	2000
RTRV-ATTR-EQPT	M---	2000
RTRV-ATTR-OC3	M---	2000
RTRV-ATTR-PORT	M---	2000
RTRV-ATTR-RMT	M---	2000
RTRV-ATTR-SDCC	M---	2000
RTRV-ATTR-SML	M---	2000
RTRV-ATTR-STS1	M---	2000
RTRV-ATTR-SYNCN	M---	2000
RTRV-ATTR-T1	M---	2000
RTRV-ATTR-T3	M---	2000
RTRV-ATTR-VT1	M---	2000
RTRV-ATTR-X25	M---	2000
RTRV-BITS	-P--	0200
RTRV-CMD-STAT	MPST	1111
RTRV-CNFGRN	M---	2000
RTRV-COND-BITS	M---	2000
RTRV-COND-COM	M---	2000
RTRV-COND-DLMAP	M---	2000
RTRV-COND-EC1	M---	2000
RTRV-COND-ENV	M---	2000
RTRV-COND-EQPT	M---	2000
RTRV-COND-OC3	M---	2000
RTRV-COND-PORT	M---	2000
RTRV-COND-RMT	M---	2000
RTRV-COND-SDCC	M---	2000
RTRV-COND-SML	M---	2000

**NOTE:** For Functional Category and Default COPC columns: M = Maintenance, P = Provisioning, S = Security, and T = Testing.

**Table A. 1603/12 SM Commands and Default Command Privilege Codes (COPC) (cont)**

<b>COMMAND</b>	<b>FUNCTIONAL CATEGORY</b>	<b>COPC (MPST)</b>
RTRV-COND-STS1	M---	2000
RTRV-COND-SYNCN	M---	2000
RTRV-COND-T1	M---	2000
RTRV-COND-T3	M---	2000
RTRV-COND-VT1	M---	2000
RTRV-COND-X25	M---	2000
RTRV-CRS-STS1	-P--	0200
RTRV-CRS-VT1	-P--	0200
RTRV-DLMAP	-P--	0200
RTRV-E2AMAP	-P--	0200
RTRV-EC1	-P--	0200
RTRV-EXT-CONT	M---	2000
RTRV-EQPT	-P--	0200
RTRV-FFP-OC3	MP--	2200
RTRV-FFP-STS1	MP--	2200
RTRV-FFP-VT1	MP--	2200
RTRV-HDR	MPST	1111
RTRV-INV-EQPT	MP--	2200
RTRV-LED	M---	2000
RTRV-LOG	M---	2000
RTRV-NE-ALL	M---	2000
RTRV-OC3	-P--	0200
RTRV-PM-EC1	M---	2000
RTRV-PM-EQPT	M---	2000
RTRV-PM-OC3	M---	2000
RTRV-PM-STS1	M---	2000
RTRV-PM-SYNCN	M---	2000
RTRV-PM-T1	M---	2000
RTRV-PM-T3	M---	2000
RTRV-PM-VT1	M---	2000
RTRV-PMMODE-EC1	M---	2000

**NOTE:** For Functional Category and Default COPC columns: *M* = Maintenance, *P* = Provisioning, *S* = Security, and *T* = Testing.

**Table A. 1603/12 SM Commands and Default Command Privilege Codes (COPC) (cont)**

COMMAND	FUNCTIONAL CATEGORY	COPC (MPST)
RTRV-PMODE-EQPT	M---	2000
RTRV-PMODE-OC3	M---	2000
RTRV-PMODE-SYCN	M---	2000
RTRV-PMODE-T1	M---	2000
RTRV-PMODE-T3	M---	2000
RTRV-PORT	MP-	2200
RTRV-PTHTRC-STS1	M---	2000
RTRV-SDCC	-P--	0200
RTRV-SECU-CID	--S-	2222
RTRV-SECU-CMD	--S-	2222
RTRV-SECU-UPC	--S-	2222
RTRV-SECU-USER	--S-	2222
RTRV-SML	-P--	0200
RTRV-STATUS	MPST	2222
RTRV-STS1	-P--	0200
RTRV-SWVER-EQPT	M---	2000
RTRV-SYCN	M---	2000
RTRV-T1	-P--	0200
RTRV-T3	-P--	0200
RTRV-TH-EC1	M---	2000
RTRV-TH-OC3	M---	2000
RTRV-TH-STS1	M---	2000
RTRV-TH-T1	M---	2000
RTRV-TH-T3	M---	2000
RTRV-TH-VT1	M---	2000
RTRV-VT1	-P--	0200
RTRV-X25	-P--	0200
SET-ACO-COM	M---	2000
SET-ATTR-BITS	M---	2000
SET-ATTR-COM	M---	2000
SET-ATTR-CONT	M---	2000

**NOTE:** For Functional Category and Default COPC columns: M = Maintenance, P = Provisioning, S = Security, and T = Testing.

**Table A. 1603/12 SM Commands and Default Command Privilege Codes (COPC) (cont)**

COMMAND	FUNCTIONAL CATEGORY	COPC (MPST)
SET-ATTR-DLMAP	M---	2000
SET-ATTR-EC1	M---	2000
SET-ATTR-ENV	M---	2000
SET-ATTR-EQPT	M---	2000
SET-ATTR-OC3	M---	2000
SET-ATTR-PORT	M---	2000
SET-ATTR-RMT	M---	2000
SET-ATTR-SDCC	M---	2000
SET-ATTR-SML	M---	2000
SET-ATTR-STS1	M---	2000
SET-ATTR-SYNCN	M---	2000
SET-ATTR-T1	M---	2000
SET-ATTR-T3	M---	2000
SET-ATTR-VT1	M---	2000
SET-ATTR-X25	M---	2000
SET-DAT	-P--	7777
SET-E2ADISP	M---	2000
SET-NE-ALL	M---	2000
SET-PMMODE-EC1	M---	2000
SET-PMMODE-EQPT	M---	2000
SET-PMMODE-OC3	M---	2000
SET-PMMODE-SYNCN	M---	2000
SET-PMMODE-T1	M---	2000
SET-PMMODE-T3	M---	2000
SET-PTHTRC-NE	M---	2000
SET-SYNCN	M---	2000
SET-TH-EC1	M---	2000
SET-TH-OC3	M---	2000
SET-TH-STS1	M---	2000
SET-TH-T1	M---	2000
SET-TH-T3	M---	2000

**NOTE:** For Functional Category and Default COPC columns: M = Maintenance, P = Provisioning, S = Security, and T = Testing.

**Table A. 1603/12 SM Commands and Default Command Privilege Codes (COPC) (cont)**

COMMAND	FUNCTIONAL CATEGORY	COPC (MPST)
SET-TH-VT1	M---	2000
SW-DX-EQPT	M---	2000
SW-TOPROTN-EQPT	M---	2000
SW-TOWKG-EQPT	M---	2000

**NOTE:** For Functional Category and Default COPC columns: *M* = Maintenance, *P* = Provisioning, *S* = Security, and *T* = Testing.

## GENERAL

When troubleshooting a short circuit, overload, etc., you will need to refer to schematics and/or wiring diagrams. Table A provides a list of part numbers (P/N) to help you locate the correct support drawing. These drawings are in the Support Documentation manual (650205-823-006). Figure 1, Page 2, shows a typical 7-foot channel rack; Figure 2, Page 3, shows a typical 7-foot unequal flange frame.

**TABLE A.**

DESCRIPTION	P/N
7-foot frame equipped with FAPXXX	600001-901-XXX
Fuse and Alarm Panel (FAP10X)	625051-000-00X
Fan Assembly (FAN10X)	625052-000-00X
Fuse and Alarm Panel (FAP20X)	625054-000-00X

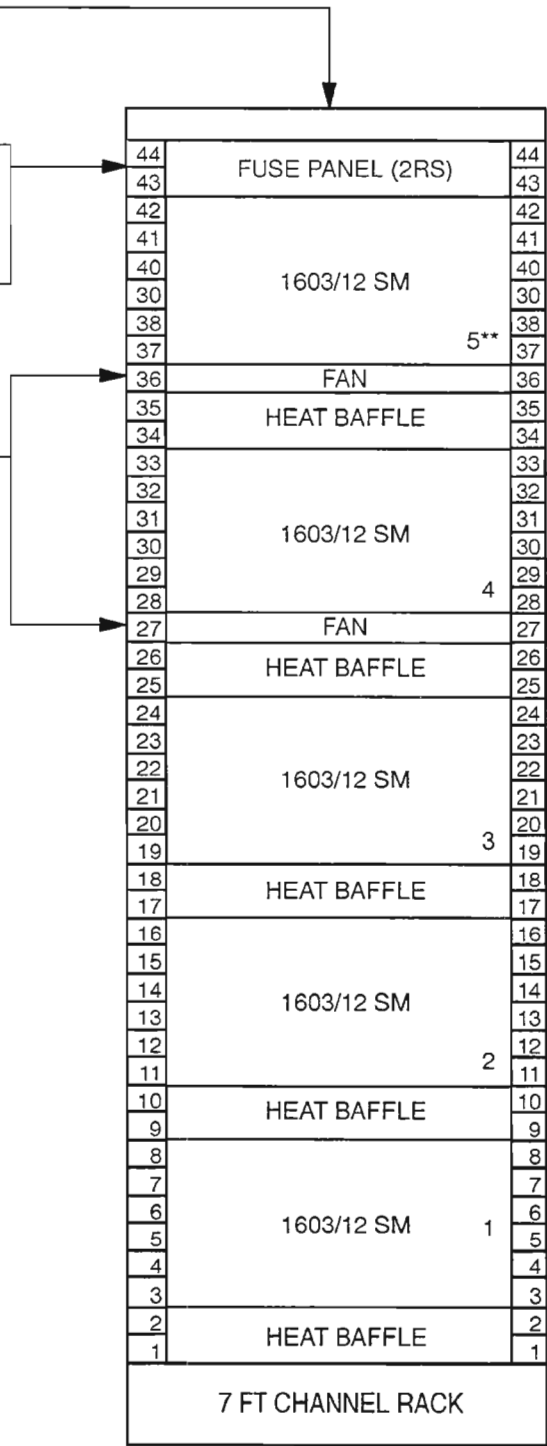
620012-714 – SCHEMATIC 1603/12 SM  
 630012-714 – WIRING DIAGRAM

625051-002 – SCHEMATIC 2RS FUSE PANEL  
 625051-003 – WIRING DIAGRAM  
 OR  
 \* 625054-002-001 – SCHEMATIC 3RS FUSE PANEL  
 \* 625054-003-001 – WIRING DIAGRAM

\* NOT SHOWN

\*\*SHELF 5 CANNOT BE EQUIPPED  
 WITH 3RS FUSE PANEL

625052-002 – SCHEMATIC FAN  
 625052-003 – WIRING DIAGRAM FAN



A7411Rev2

Figure 1. Typical 7-Foot Channel Rack

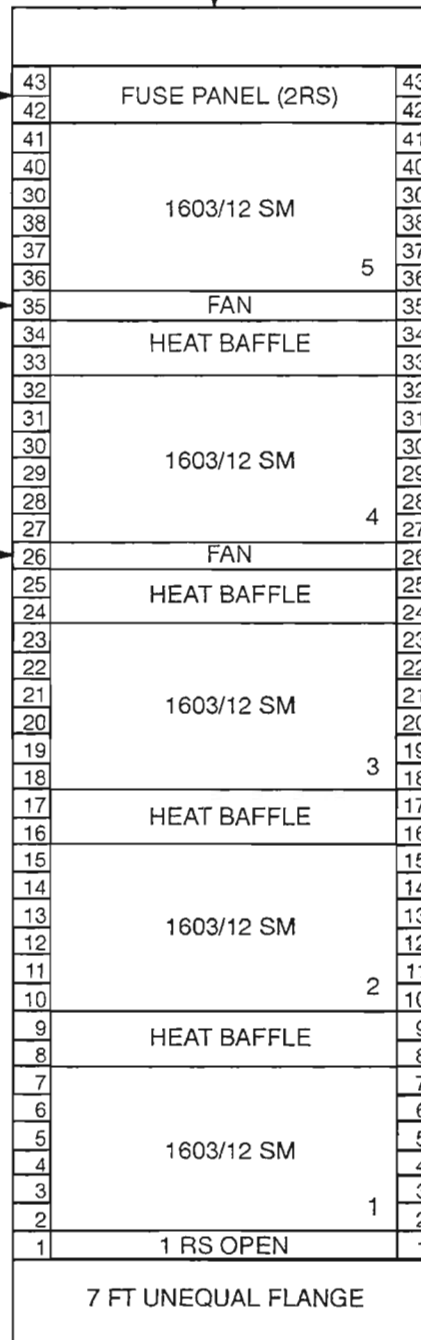
ISSUE 2	JULY 1994
ALCL 363-203-502	TNG
PAGE 2 of 3	511



620012-714 – SCHEMATIC 1603/12 SM  
 630012-714 – WIRING DIAGRAM

625051-002 – SCHEMATIC 2RS FUSE PANEL  
 625051-003 – WIRING DIAGRAM  
 OR  
 \*625054-002-001 – SCHEMATIC 3RS FUSE PANEL  
 \*625054-003-001 – WIRING DIAGRAM  
 \*NOT SHOWN

625052-002 – SCHEMATIC FAN  
 625052-003 – WIRING DIAGRAM FAN



A7412

Figure 2. Typical 7-Foot Unequal Flange Frame



## INTRODUCTION

For a Network Element (NE) to provide its users with efficient and economical service, the NE must be managed properly. Management of 1603/12 SM NE entails two primary responsibilities:

- Monitoring performance to make decisions which relate to optimizing performance and system efficiency.
- Performing tasks that relate to the overall management and control of the system.

This document provides general information about the system management considerations and tasks related to the 1603/12 SM NE.

## OPERATIONAL TASKS

The 1603/12 SM system typically runs with minimal operator intervention. However, operator (craft) interaction is required for the following tasks:

- To install and turn up system.
- To determine security functions for users, commands, and access channels (OS and ports).
- To isolate trouble and replace defective units.
- To add service not originally provisioned on the initial turn-up.

## SECURITY

NE security refers to the measures taken to prevent unauthorized personnel from browsing, altering and/or destroying NE specific information/provisioning and system performance monitoring/alarm data. In so doing, the integrity of the network also is protected.

Achieving and maintaining confidence in a security system is dependent on certain environmental factors, such as personnel and the facilities. Companies must ensure that users honor system controls and a reasonable amount of physical security measures exist to prevent sabotage and vandalism. In addition, privileges must be assigned with discretion.

## PRIVILEGES

System management functions require privileges. Assigning privileges restricts certain users from performing certain system activities. These restrictions protect the integrity of the operating system's performance and, thus, the integrity of service provided to customers.

Privileges should be granted to users on the basis of two factors: (1) does the user have a legitimate need for the privilege, and (2) does the user have the skill and expertise required to avoid service disruption. Never issue "all" privileges to all users. Such indiscriminate assignment will invite user probing, user penetration (breaking controls) and other service-affecting tampering. Refer to TNG-510 for details on system security.

## PERFORMANCE MONITORING

Performance monitoring has two purposes: (1) to identify network problems which need to be addressed to optimize performance, and (2) to recognize NE specific hardware problems which impact performance. System tuning and workload management are time-consuming activities that require both familiarity with the systems (hardware and software which make up the NEs) and the network's design.

System performance (i.e., bit error rate, slip counts, bipolar violations, etc.) is monitored in real time and reported periodically (on a selectable time interval basis) or upon demand. Alarm reporting thresholds are also selectable.

Hardware problems are a common source of performance complaints. When NEs go off-line or an NE goes into a degraded state, the network performance is affected. Timely identification of the source of the problem will expedite performance recovery. Fault location consists of detecting a fault, verifying the fault, attempting automatic recovery or protection, a trouble notification.

## REMOTE INVENTORY INTERROGATION

From time to time, the OS may need to determine exactly what the plug-in configurations are for specific NEs, as well as the current system software version. The 1603/12 SM system provides remote inventory and software version interrogation via the remote craft port on the COA plug-in.

ISSUE 1	MAY 1994
ALCL 363-203-502	TNG
PAGE 2 of 2	512

# GENERAL

This document provides a description of the management states of equipment or facilities associated with Alcatel's SONET Network Element (NE). The management states used in the 1603/12 SM are based on a subset of the specifications in Bellcore Technical Advisory TA-NWT-001093 Issue 1, October 1990 (Generic State Model for Managing Network Elements). Only the specifications applicable to Alcatel's NEs are described here.

The management state of an object (equipment or facility) represents its current condition of availability and operability, or its service ability. A variety of state attributes is available that expresses and controls aspects of the operation of the object. The purpose of having management states is to control the general availability, and, if an object cannot provide service, to indicate what kind of action needs to be taken to restore service.

When the state of an object is retrieved, the response provides the current status of an object's availability to perform its service function as defined by the object's attributes. And, if possible, supplemental information is provided about associated objects that support the object or that are supported by the object. Certain TL-1 commands have additional parameters which allow the states of an object to be entered or modified.

The state of an object is represented by three parameters: the Primary State (PST), the Secondary State (SST), and the Associated State (AST).

## PRIMARY STATE

The Primary State (PST) indicates the service availability of an object and consists of two components: Service Condition and Service Condition Qualifier. The Service Condition component is required for PST while the Service Condition Qualifier is optional.

- **Service Condition:** The Service Condition component is applicable to most object types and places the object in one of two possible states:
  - **In-Service (IS):** the object is performing or is available to perform all or part of its designed service functions;
  - **Out-Of-Service (OOS):** in general, the object is not available to perform any of its designed service functions.
- **Service Condition Qualifier:** When the service condition is IS, the qualifier indicates whether the object is able to perform all or only part of its designed service functions. If an object is able to perform all of its designed service functions, it is considered to be Normal (NR), otherwise, it is Abnormal (ANR). Whether an NE is NR or ANR is automatically updated by the NE according to the current service condition of the object. The OS or craft has no control over the qualifier for IS.

When the service condition is OOS, the qualifier indicates which operations domain is responsible in causing the OOS condition or for putting the object back to IS. For Alcatel SONET NEs, there are two applicable operation domains: provisioning driven Memory Administration (MA) and Maintenance (MT). The distinctions between these two qualifiers are:

- MA deals with the provisioning process, primary resource/service parameter assignment (e.g., data base parameters), and equipage (e.g., detecting the presence or absence of plug-ins).
- MT deals with the fault detection and service recovery. MT also deals with testing that is done to ensure an object is functioning properly or to sectionalize and isolate a suspected or known trouble condition. Faults may be detected automatically (e.g., because of poor performance and exceeding a threshold level) or by testing (initiated automatically by the object itself or by a testing craftsperson/OS). Depending on the severity of the trouble, the object may be left IS and marked abnormal (ANR) or taken OOS for a specific cause which is indicated by the supplemental information.

The PST parameter can be present in the input and normal response to a command that uses the Retrieve (RTRV) verb. Possible output values for the retrieve command are:

IS-NR	Object is in-service and normal.
IS-ANR	Object is in-service but an abnormal condition exists. It may be able to perform all or only part of its designed service function (e.g., due to degrade).
OOS-MA-AS	Out-of-service state for provisioning activity; object has been assigned.
OOS-MA-UAS	Out-of-service state for provisioning activity; object has not been assigned.
OOS-MT	Out-of-service state for maintenance activity such as fault, performance monitoring or testing; object has been assigned.

When PST (Primary State) is used in commands that use Enter (ENT) or Edit (ED) verbs, the value indicates the desired Primary State of the object. When used in the Enter command, if PST is not specified, it defaults to IS. When used in the Edit commands, if PST is not specified, the current value of PST does not change. Only certain input values may be specified for PST using the Enter or Edit commands. Valid input values are:

IS	In-Service; IS [-(NR or ANR)] implied; whether NR (normal) or ANR (abnormal) is determined by the NE.
OOS	Out-Of-Service; OOS-MA implied.
MA	Memory Administration; OOS-MA implied (synonymous with OOS).
MT	Maintenance; OOS-MT implied.

ISSUE 2	OCT 1994
ALCL 363-203-502	TNG
PAGE 2 of 8	514

An example command entry for changing the primary BITS facility to the OOS-MA state is:

**ED-BITS::SYNCPRI:::OOS;**

There are other TL-1 verbs available for manipulating the state of an object. They are:

- DLT            DELETE (ex: DLT-BITS); this verb is used in a command to delete the provisioning information concerning an object from the NE's data base. It effectively sets the object's PST parameter to OOS-MA-UAS.
- RMV            REMOVE (ex: RMV-BITS); this verb is used in a command to place the object into the maintenance state (PST=OOS-MT). The object is able to carry traffic but alarm detection and reporting are suspended.
- RST            RESTORE (ex: RST-BITS); this verb is used in a command to restore the object from the maintenance state to its previous state, if possible.

Certain guidelines and restrictions which apply when manipulating the state of an object are summarized as follows:

- The ENT (Enter) command is only valid if the object is unassigned (PST = OOS-MA-UAS). This verb is used in a command to add a new object to the current configuration.
- To Edit parameters other than (controllable) PST and/or SST parameters, the primary state of the object must be OOS-MA-AS. The Edit command also is used to change the primary state of the object. This ability is useful, for example, to change the primary state of the object to OOS-MA-AS to allow editing of the object's other parameters (other than PST and/or SST), and then return the object to its previous state (e.g., from IS to OOS-MA-AS and back).
- To Delete the object, the primary state must not be unassigned (PST ≠ OOS-MA-UAS). The DELETE function removes the object from the current configuration.
- The Remove (RMV) command is used to place an object into the maintenance state for testing. It is only valid if the primary state is In-Service (PST = IS-NR or IS-ANR). Otherwise, the edit command must be used (i.e., from OOS-MA to OOS-MT).
- The Restore (RST) command is used to return an object from the maintenance state (OOS-MT) to the In-Service state (IS). It is only valid when PST = OOS-MT.

The execution of a command may be denied if a possible service interruption is detected or if the object is in an incorrect state.

## SECONDARY STATE

The Secondary State (SST) provides supplementary information about the state of an object. Such information may consist of detailed reasons for being in a particular primary state, or supplemental information that is useful in managing the object.

Values of SST are specific to the objects and PST. Not all values of SST are applicable to all objects or all values of PST. Some values of SST may apply only if the object is equipment or a facility. Depending on the current state, an object may possess zero to many values of the SST at a point in time.

Some values of the SST can only be changed by the NE itself to reflect the current status of the object. These values are read-only (e.g., from the NORMAL RESPONSE of the Retrieve command). Some SST parameters are also controllable by an OS or craftperson to impose control on the object.

When a value of SST is used in the input of commands with the Enter (ENT) or Edit (ED) verbs, this value specifies the desired secondary state, i.e., the state to be activated (or staying active if it has already been activated). The only controllable value for SST parameter is:

**AINS**            Automatic-In-Service; the equipment is automatically placed In-Service (PST = IS) when installed or plugged in. This value, when used as an input, allows pre-provisioning of uninstalled equipment using the Enter command, effectively placing the equipment into the OOS-MA-AS, unequipped state.

When a value of SST appears in the normal response of the Retrieve command, it indicates that the value is currently active. Valid output values are:

**ACT**            Active; this equipment is currently providing service (versus standby).

**AINS**            Automatic In-service; the equipment is automatically placed "In-Service" (pst = IS) when plugged in.

**APSI**            Automatic Protection Switch Inhibited; for a protected entity, it is equivalent to "lock-on." For a protecting entity, it is equivalent to "lock-out."

**BOOT**           Processor is running bootcode (requires download or CPY-MEM).

**DX**             Configuration is duplex.

**EQ**             Equipped; the entity has been equipped with the necessary equipment (plugged in).

**FLT**            Fault; the equipment is OOS-MT because it is faulty.

**FRCD**          Forced; change of state was forced.

ISSUE 2	OCT 1994
ALCL 363-203-502	TNG
PAGE 4 of 8	514



MAN	Manual; the equipment has been manually taken OOS-MT for maintenance activities.
MEA	Mismatch of equipment and attributes; the equipped object does not match the provisioned object.
OVFL	Overflow; for the LOG and Database Capture Buffer (DBC) objects that are not provisioned with wrap buffer, this indicates that the object has depleted its memory resources, i.e., no additional storage (memory) to capture more records.
PROT	Entity is Protection (not working) side.
PWR	Power; entity is OOS-MT because it has no power.
STBY	Standby; this entity is not currently providing service.
SWDL	Software downloaded.
SWVERR	Software version error.
SX	Configuration is simplex.
TB	Diagnostic test busy.
TSTF	Test failure; the equipment is OOS-MT because of test failure.
UEQ	Unequipped; the entity is not equipped with the necessary equipment.
WORK	Entity is working side.

## ASSOCIATED STATE

The Associated State (AST) parameter provides additional information regarding the existence and service availability of the associated objects for the specified object. The associated objects fall into two categories, namely: "Supporting Object" and "Supported Object." Objects that require other objects' support in order to provide services are called "Supported Objects," and the objects that provide support are called "Supporting Objects." A supporting object may provide support in the sense of controlling or containing the supported object. For example, a high speed OC-3 facility's ability to provide normal service may depend on the service state of its associated HIF plug-in unit. Therefore, the OC-3 facility is the "Supported Object" and the HIF plug-in is the "Supporting Object." Before the OC-3 facility can be provisioned into service, the supporting HIF plug-in must be placed into service. Likewise, before the HIF plug-in can be deleted, the supported OC-3 facility must first be deleted.

When a value of AST appears in the normal response of a Retrieve command, it indicates that the value is currently active. Valid output values are:

FAF	Facility Failure; associated supporting facility is OOS.
FEF	Family of Equipment Failure; associated controlling equipment is OOS.
SEA	Supported Entity Assigned; one or more entities that this equipment directly supports are assigned. (FUTURE)

SEO	Supported Entity Outage. (FUTURE)
UEA	Underlying Entity Abnormal; the associated supporting entity is IS-ANR or OOS.

## STATE TRANSITION DIAGRAMS

A graphical representation that shows the effects on an object's service states as a result of various input commands and events can be useful in understanding the concepts required to effectively turn up and maintain a Network Element (NE). A state transition diagram is typically used to show the interrelationship between input commands/events and the NE's service states.

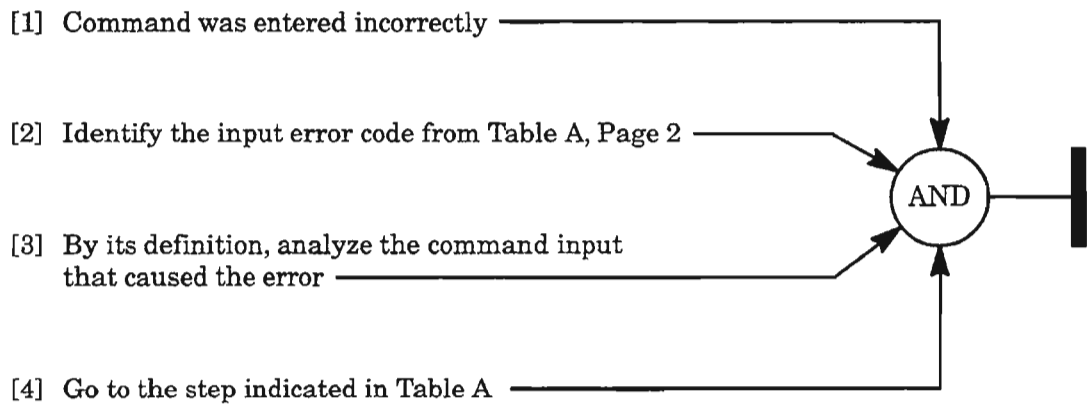
Figure 1, Page 7, shows a state transition diagram for the 1603/12 SM equipment (plug-in units), and Figure 2, Page 8, shows a state transition diagram of the facilities associated with the 1603/12 SM. The boxes in Figures 1 and 2 represent the states, and each line between the boxes represents the input command verb or event that causes a transition from one state to another. Each box contains a primary state and may contain one or more secondary states. The secondary states are listed below the primary state. Not all states are shown. Only the states that are affected by input commands that directly alter the primary state [and the controllable secondary state (AINS) for equipment] are shown. Input events shown in both tables are degradation, failures and recovery from a degradation or failure. For equipment, the effects of the insertion and removal of plug-ins are also shown.

When the 1603/12 SM system is first equipped and turned up, the equipment and facilities are in predetermined default states. Most equipment and facilities are in the OOS-MA-UAS state and must be entered into service. However, some equipment, such as the COA and NEP-A plug-ins are required to "come-up" in-service to allow processing and communications with the NE.

ISSUE 2	OCT 1994
ALCL 363-203-502	TNG
PAGE 6 of 8	514

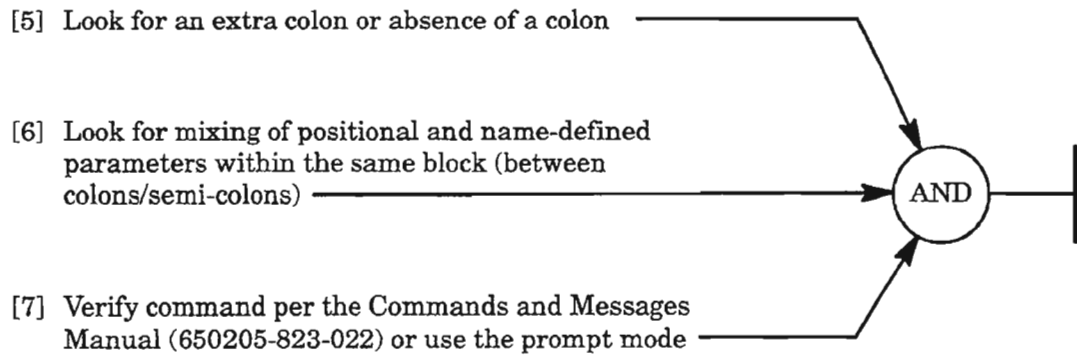






**Table A. Input Error Codes**

<b>CODE</b>	<b>DESCRIPTION</b>	<b>PAGE</b>
IBEX	Input, extra input block detected	3
IBMS	Input, block missing	3
IBNC	Input, block not consistent	3
ICNC	Input, command not consistent	3
ICNV	Input, command not valid	3
IDNC	Input, data not consistent	3
IDNV	Input, data not valid, or superfluous	4
IDRG	Input, data out of range	4
IIAC	Input, invalid access identifier	5
IICT	Input, invalid correlation tag	5
IIFM	Input, invalid data format	4
IIPG	Input, invalid parameter grouping	6
IISP	Input, invalid syntax or punctuation	3
IITA	Input, invalid target identifier	5
INUP	Input, non-null unimplemented parameter	6
IPEX	Input, extra input parameters detected	6
IPMS	Input, parameter missing	6
IPNV	Input, parameter not valid	6



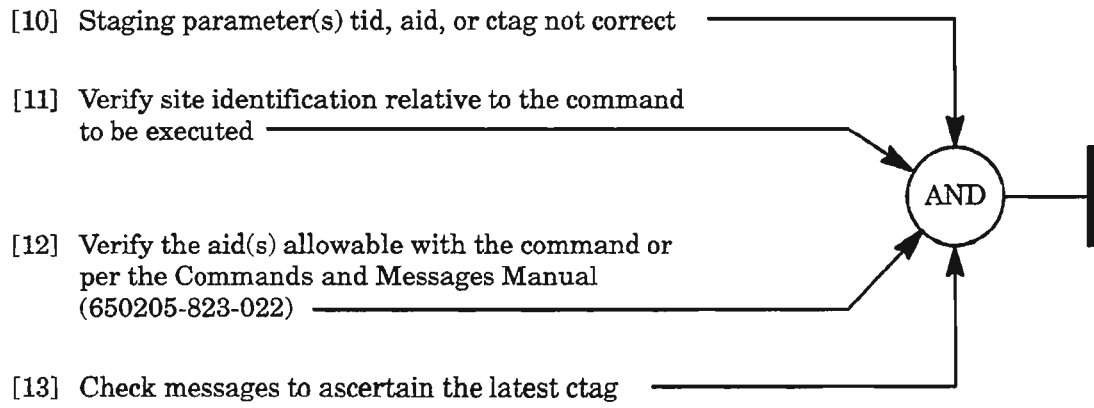
[8] Data parameter(s) values are not consistent with their position or name

[9] Verify with the Commands and Messages Manual (650205-823-022) or use the prompt mode



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 4 of 6	004



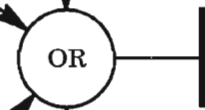


[14] If error is **IIPG**, look for improper usage of the ampersand (&) per the Commands and Messages Manual (650205-823-022)

[15] If the error is **INUP** or **IPMS**, look for a required parameter that has not been input per the Commands and Messages Manual (650205-823-022) or input again using the prompt mode

[16] If the error is **IPEX**, look for an extra parameter by comparing to the Commands and Messages Manual (650205-823-022) or input again using the prompt mode

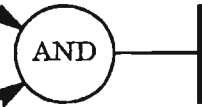
[17] If the error is **IPNV**, the parameter values or parameters are not valid; check parameters per the Commands and Messages Manual (650205-823-022) or input again per the prompt mode



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 6 of 6	004

[1] See NOTE 1. Error (Table A) is received because of an unauthorized entrance from a user or interface per the level specified in the category of the user or interface

[2] From Table A, select the error code received and go to the page indicated



**Table A. Privilege Error**

Code	Description	Page
PICC	Privilege, invalid command code: The command entered is not executable because the session or user is not allowed to use the command that received the error.	2
PIMA	Privilege, invalid memory address: The address is not accessible by the session or user. (First releases: error will not occur; prevention of memory access would only be by command restriction.) RD-MEM-ADRS	5
PIUC	Privilege, illegal user code: The user, probably a system administrator, is trying to change own authorization levels with an ENT/ED command, or the stated user code is illegal.	6
PIUI	Privilege, illegal user identity: The user ID or password is not acceptable because of being illegal, wrong format, or password is already used.	7

**NOTE:** 1. For additional information on Security/User Authorization, see TNG-510.

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 1 of 7	005

[3] The security categories are PCMAINT (Maintenance Privilege Code with levels 0-7), PCPROV (Provisioning Privilege Code, 0-7), PCSECU (Security Privilege Code, 0-7), and PCTEST (Test Privilege Code, 0-7)

[4] Enter command:

**RTRV-SECU-CMD:[tid]:verbmod:[ctag];**

where: verbmod = command verb and associated modifier(s) of the command that received the error

[5] Analyze response:

“VERMOD:[PCMAINT],[PCPROV],  
[PCSECU],[PCTEST]”

to determine the levels of the categories

[6] Enter command:

**RTRV-SECU-UPC:[tid]:uid:[ctag];**

where: uid = the logged-in user's ID

[7] Analyze response:

“UID:PCMAINT,PCPROV,PCSECU,PCTEST”

to determine the levels of the categories

[8] Align the categories of Step 6 above Step 4.

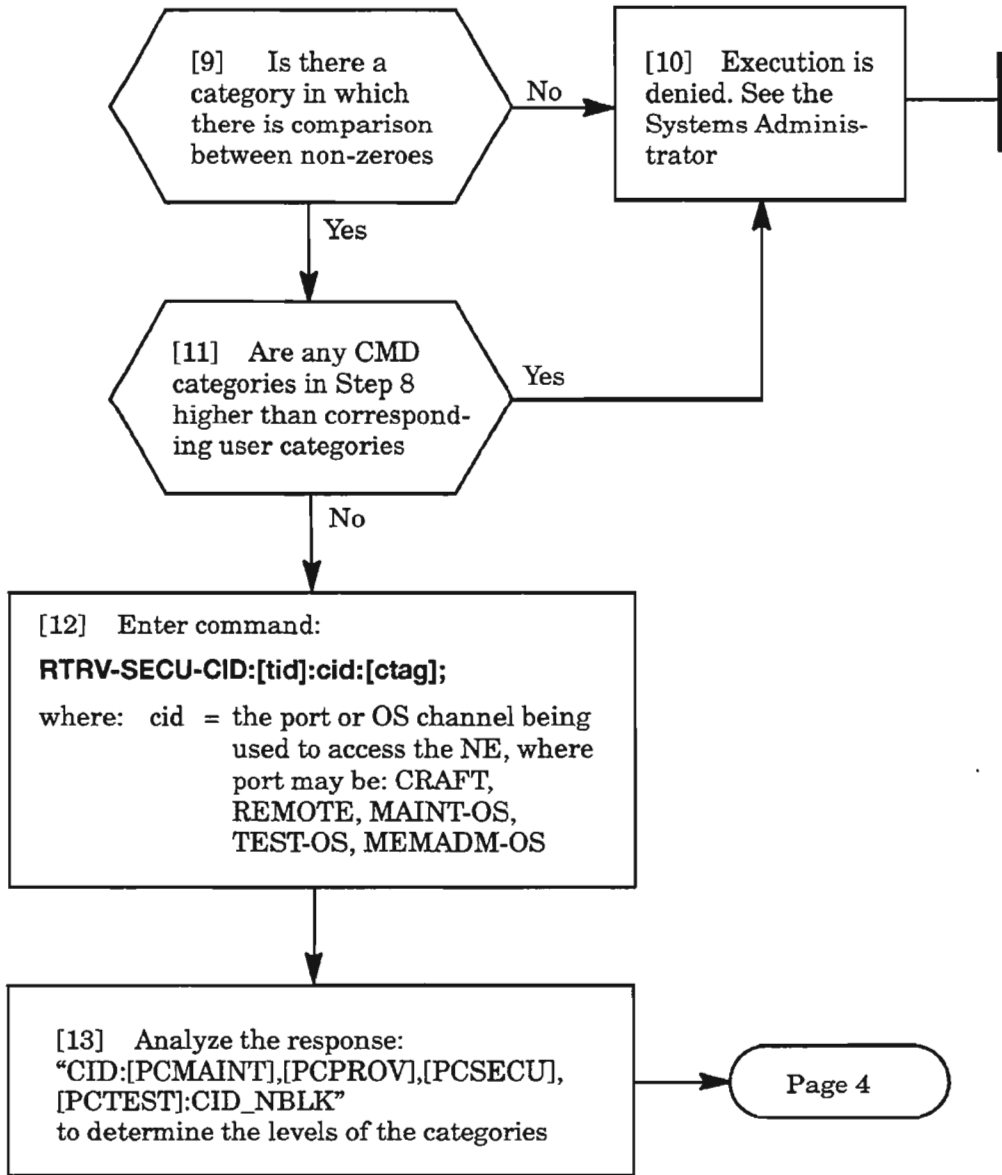
Example:

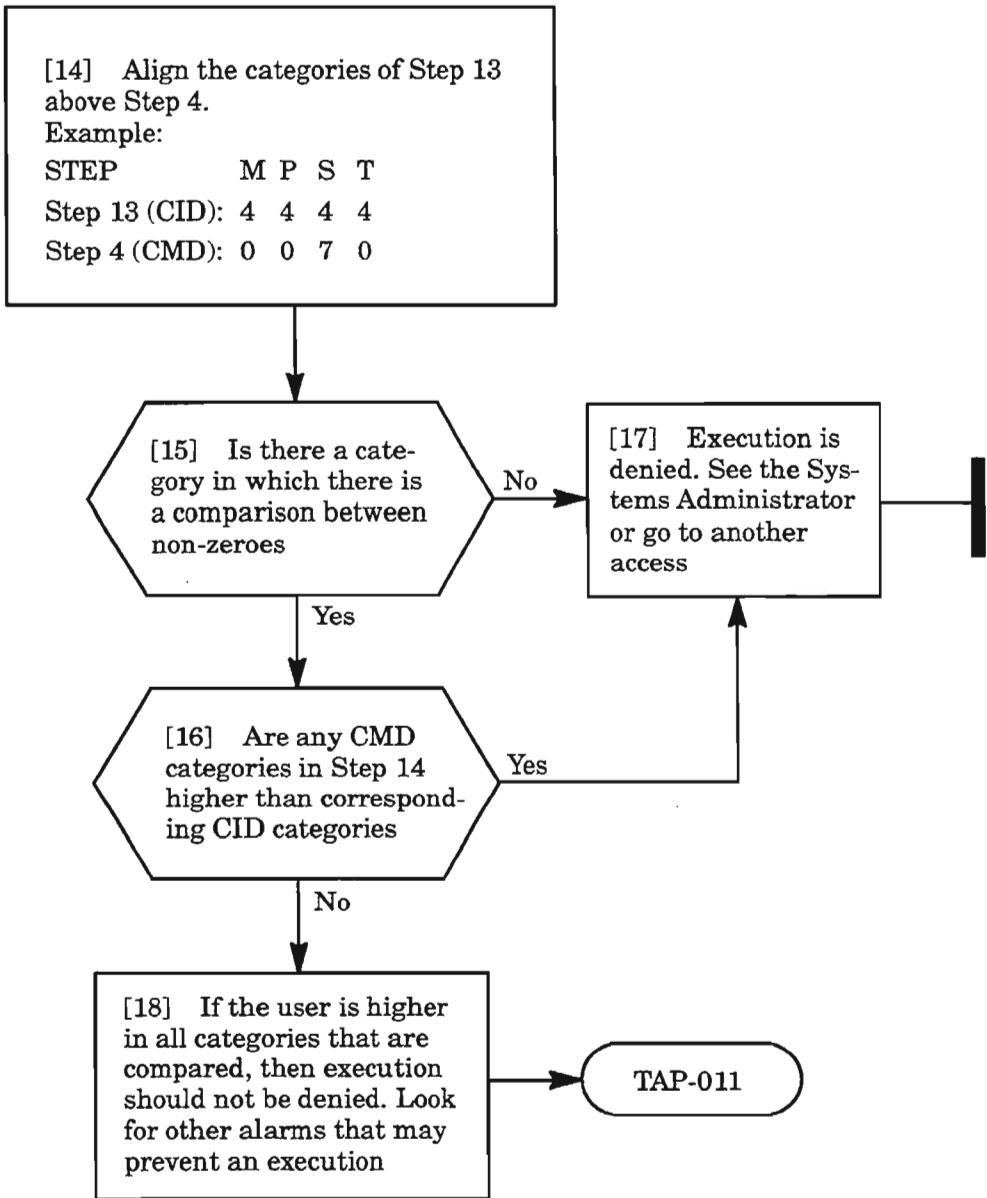
STEP	M	P	S	T
Step 6 (USER):	5	5	4	5
Step 4 (CMD):	0	0	7	0

AND

Page 3

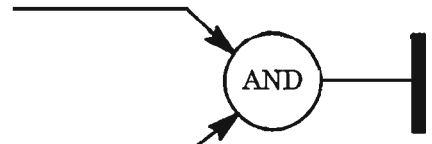
ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 7	005





[19] A release has enabled the System Administrator to inhibit a user from accessing a memory location

[20] Contact the System Administrator



[21] Enter command:

**RTRV-SECU-USER:[tid]:uid:[ctag];**

where: uid = user ID

[22] Analyze response:

**"UID:[PCMAINT],[PCPROV],[PCSECU],  
[PCTEST]:PAGE=x,UAGE=y,TMDIS=z"**

where: PC----- = 0-7

PAGE = password aging interval, 0...999  
(0 disables)

UAGE = user aging interval, 0...999  
(0 disables)

TMDIS = Time-out disable (Y or N)

AND

[23] Are the codes correct (0-7)

No

[24] Have the System Administrator enter the following command and specify the required security codes:

**ED-SECU-USER:[tid]:uid:[ctag>::[nuid],[npid],,  
[pcmaint],[pcprov],[pcsecu],[pctest];**

Yes

[25] If you are authorized to enter an ED/ENT-SECU command, you may be demoting your code levels

[26] Compare command input data on the command that was alarmed with that which was retrieved (Step 22)

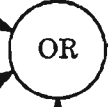
[27] System Administrator must input correct data

AND

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 6 of 7	005



- [28] The User ID with the password used may not be correct
- [29] The password may have been assigned to someone else
- [30] The password entered has illegal characters (6 to 10 alphanumeric characters)
- [31] The UAGE or PAGE has expired



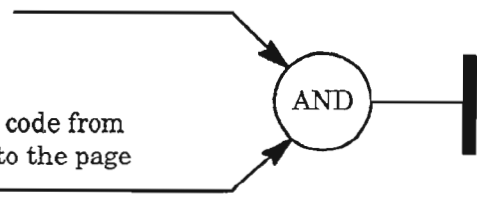
[32] Reenter command with new data:  
**ED-SECU-USER:[tid]:uid:[ctag]::[nuid],[npid],[pcmaint],[pcprov],[pcsecu],[pctest]:PAGE=x,UAGE=y,TMDIS=z;**  
 where: nuid = new user ID  
       npid = new password  
       y = time period (0...999 days) before uid is to expire  
       x = the time period in which the password is to expire  
       z = port time-out disable (Y or N)





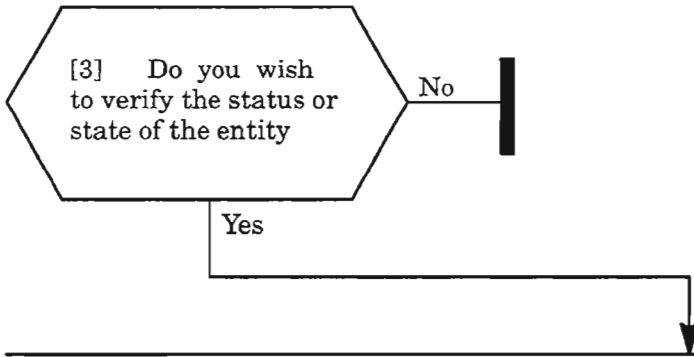
[1] Command was not executed due to the status of the system

[2] Identify the status error code from Table A, Page 2, and go to the page indicated, if available



**Table A.**

<b>CODE</b>	<b>DESCRIPTION</b>	<b>PAGE</b>
SAAL	Status, already allowed	3
SABT	Status, command execution aborted	5
SAIN	Status, already inhibited	3
SAIS	Status, already in service	3
SAMS	Status, already in maintenance state	3
SAOP	Status, already operated via an OPR command; use an RLS command to release	—
SAPR	Status, already in primary role	3
SARB	Status, all system resources busy, try later	—
SARL	Status, already released via an RLS command	—
SAWS	Status, already in working state	3
SDAS	Status, diagnostics already started, wait for completion	—
SDFA	Status, duplex unit failed	5
SDLD	Status, duplex unit locked	6
SDNA	Status, duplex unit not available	3
SDNC	Status, data not consistent	7
SDNR	Status, data not ready	8
SNOS	Status, not currently out-of-service	3
SNPR	Status, not in protection state	3
SNRM	Status, system not in restoration mode	9
SNSR	Status, no switch request outstanding	10
SNVS	Status, not in valid state	3
SPFA	Status, protection unit failed	5
SPLD	Status, protection unit locked	6
SROF	Status, requested operation failed	5
SSRD	Status, switch request denied	3
SSTP	Status, stopped	5
SWFA	Status, working unit failed	5
SWLD	Status, working unit locked	6



[4] Enter the following applicable command using the prompt for assistance and analyze the PST, SST, and AST in the response to ascertain the status or state of the entity in question:

```

RTRV-BITS:[tid]:aidbits:[ctag];
"aidbits::[bits_nblk]:pst,[sst],[ast]"

RTRV-EC1:[tid]:aidec1:[ctag];
"aidec1::[ec1_nblk]:pst,[sst],[ast]"

RTRV-EQPT:[tid]:aideqpt:[ctag];
"aideqpt:[eqpttype],[compat]:[eqpt_nblk]:pst,[sst],[ast]"

RTRV-OC3:[tid]:aidoc3:[ctag];
"aidoc3::[oc3_nblk]:pst,[sst],[ast]"

RTRV-PORT:[tid]:aidport:[ctag];
"aidport::[port_nblk]:pst,[sst],[ast]"

RTRV-SDCC:[tid]:aidsdcc:[ctag];
"aidsdcc::[sdcc_nblk]:pst,[sst],[ast]"

RTRV-SML:[tid]:aidsml:[ctag];
"aidsml::[sml_nblk]:pst,[sst],[ast]"

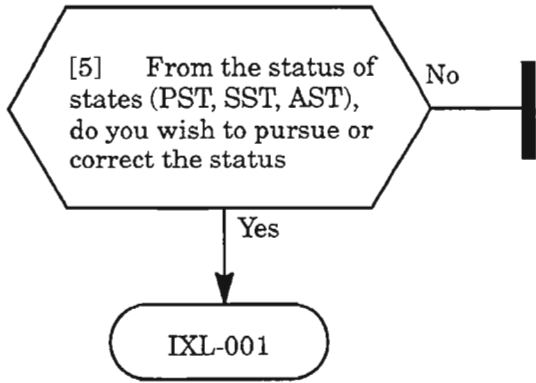
RTRV-ST1:[tid]:aidstsp:[ctag];
"aidstsp:[stsptype]:[sts_nblk]:pst,[sst],[ast]"

RTRV-SYCN:[tid]:aidsyncn:[ctag];
"aidsyncn::[syncn_nblk]:pst,[sst],[ast]"

RTRV-T1:[tid]:aidt1:[ctag];
"aidt1:[t1type]:[t1_nblk]:pst,[sst],[ast]"

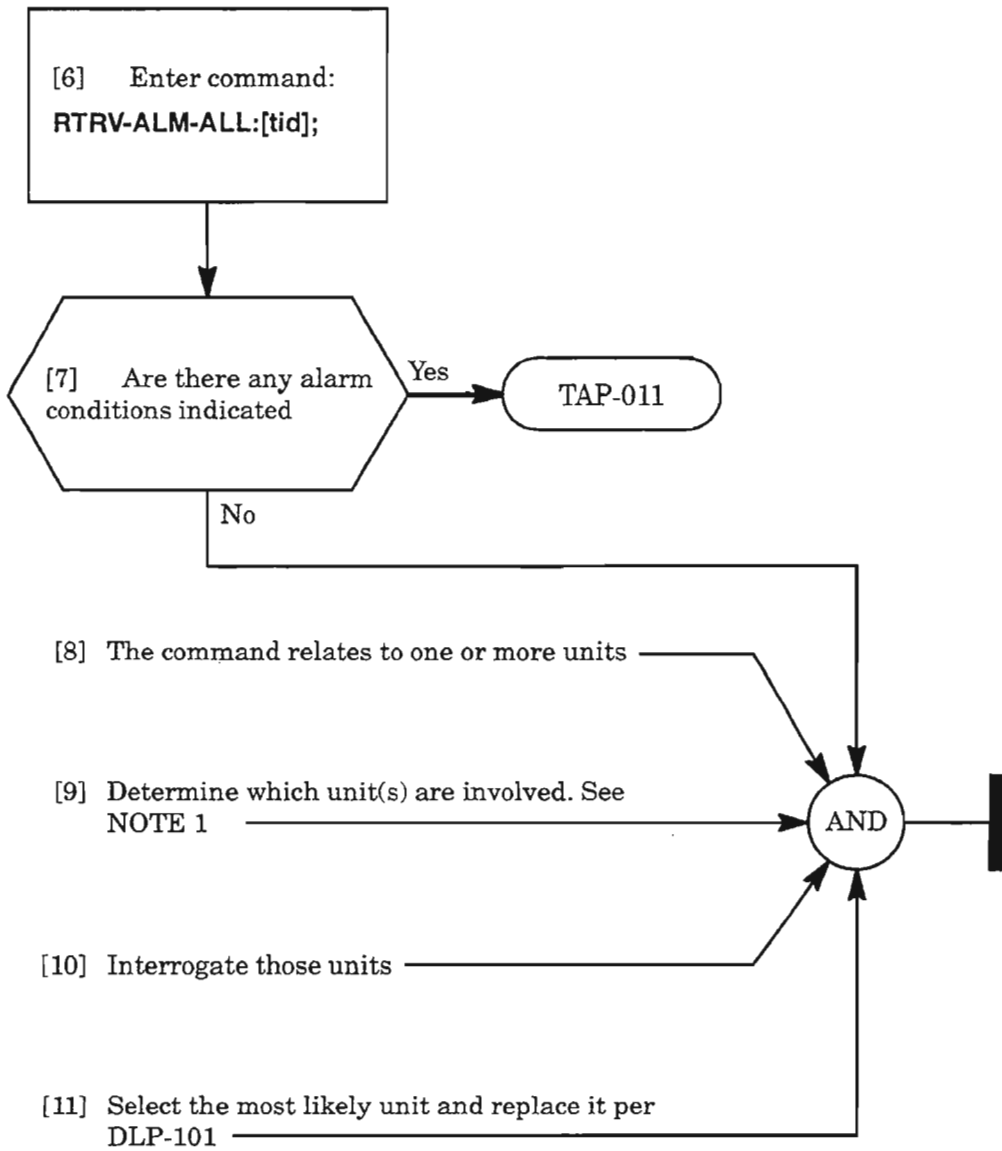
RTRV-VT1:[tid]:aidvt1:[ctag];
"aidvt1::pst,[sst],[ast]"
  
```

Page 4

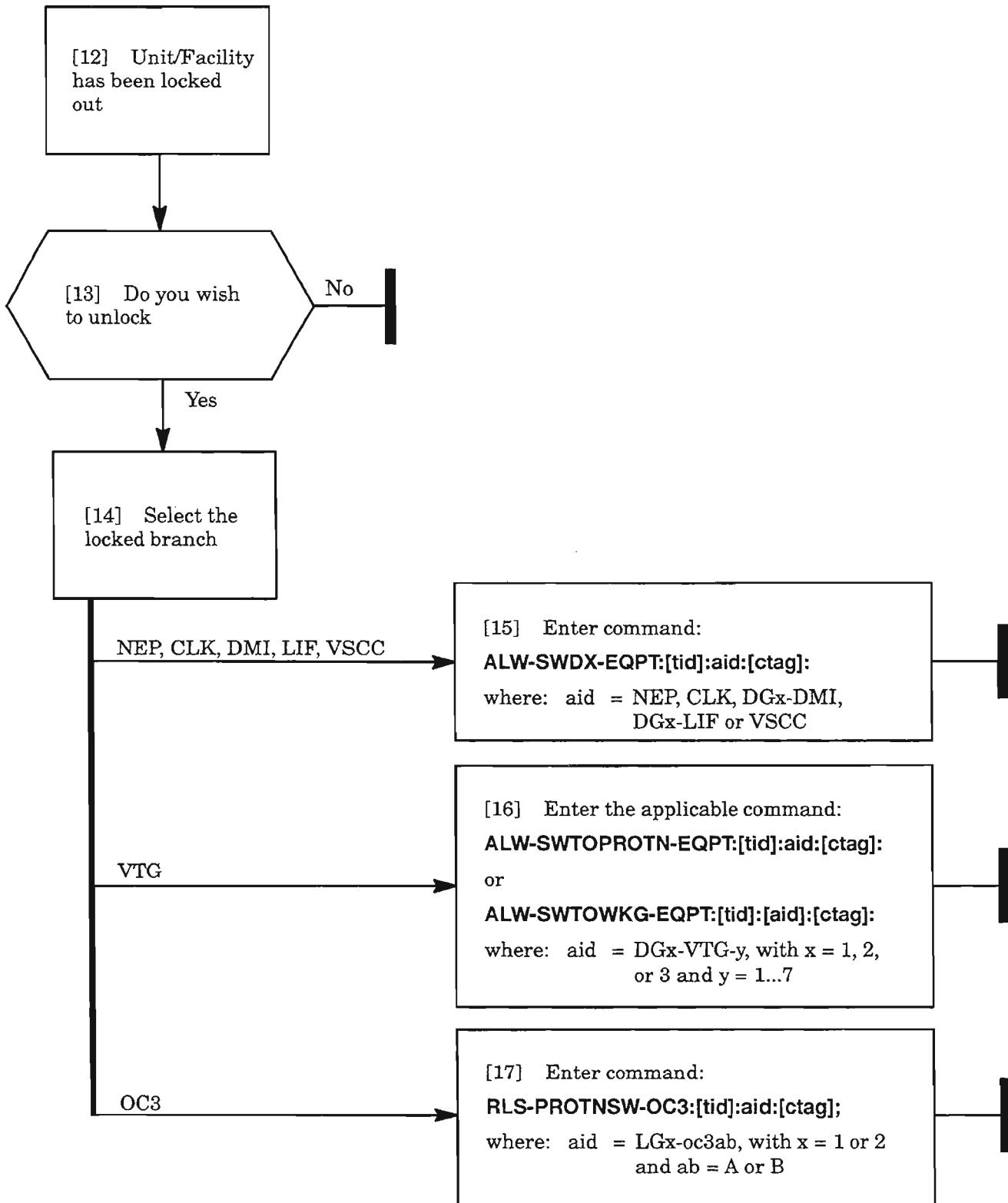


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 10	006

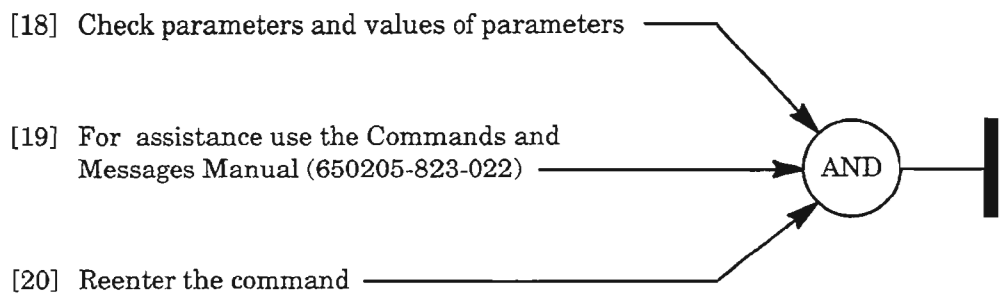
CLEAR COMMAND STATUS ERRORS (SXXX)

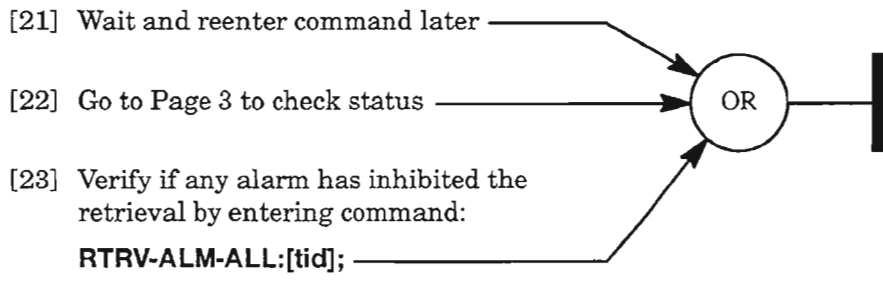


**NOTE:** 1. Always give precedence to PWR, CLK and NEP first; then DMI, HIF and VSCC equipment alarms; then facility, path and miscellaneous alarms.









ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 8 of 10	006

[24] An INH-AUTORST command probably was executed inhibiting synchronization restoration

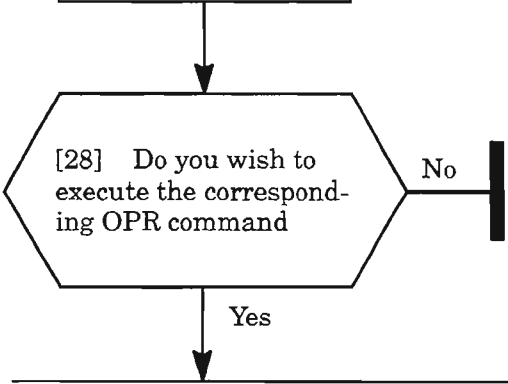
[25] Do you wish to allow restoration

No

Yes

[26] Enter command:  
**ALW-AUTORST:[tid]:aid:[ctag]::SYNC;**  
where: aid = NESYNC or BITSSYNC

[27] There has not been an OPR command executed to be released



[29] Enter the selected OPR command:

**OPR-PROTNSW-OC3:aid:[ctag]::sc;**

where: aid = LGx-oc3ab, with x as 1 or 2, and ab = A or B;  
sc = MAN, FRCD, or LOCKOUT

**OPR-SYNCNSW:[tid]:aid:[ctag]::SYNCSWTO;**

where: aid = NESYNC or BITSSYNC;  
syncswitchcto = PRI, SEC, THIRD, FOURTH, or FIFTH



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 10	006

[1] Command was not executed because the system is not equipped to satisfy the functional requirement

[2] Identify the equipage error code from Table A, Page 2

[3] Retrieve provisioning data associated with an equipment unit by enter the command:

**RTRV-EQPT:[tid]:aid:[ctag];**

where aid = that which was in the command that received the error

[4] Check functionality of unit by entering command and referencing applicable Unit Data Sheet in the 1603/12 SM Product Information Manual, 650205-823-001:

**RTRV-INV-EQPT:[tid]:aid:[ctag];**

where aid = unit in question

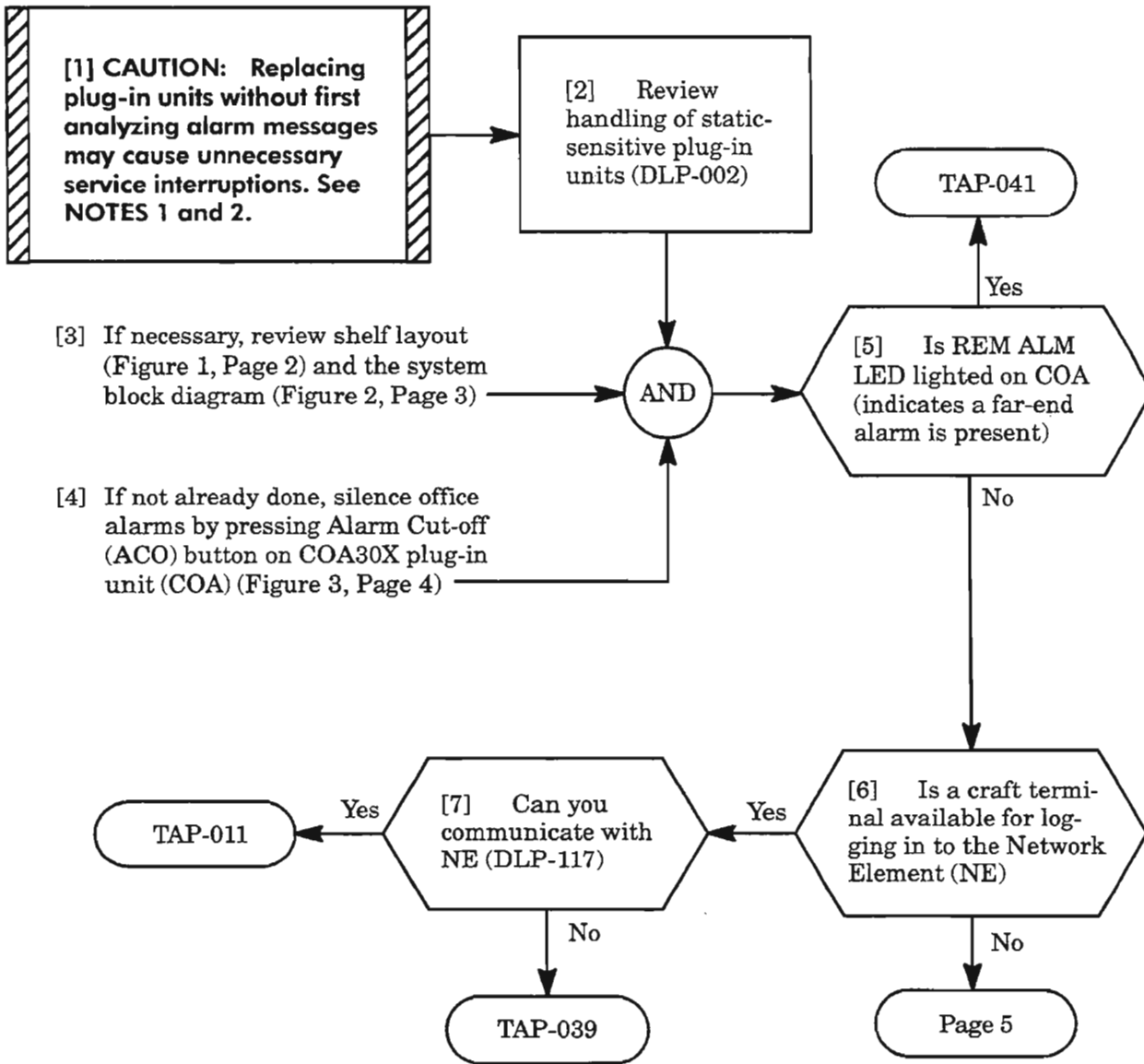
[5] Check configuration and definition of unit (Ref: Product Information Manual)

[6] By definition of equipage code, analyze what action to take



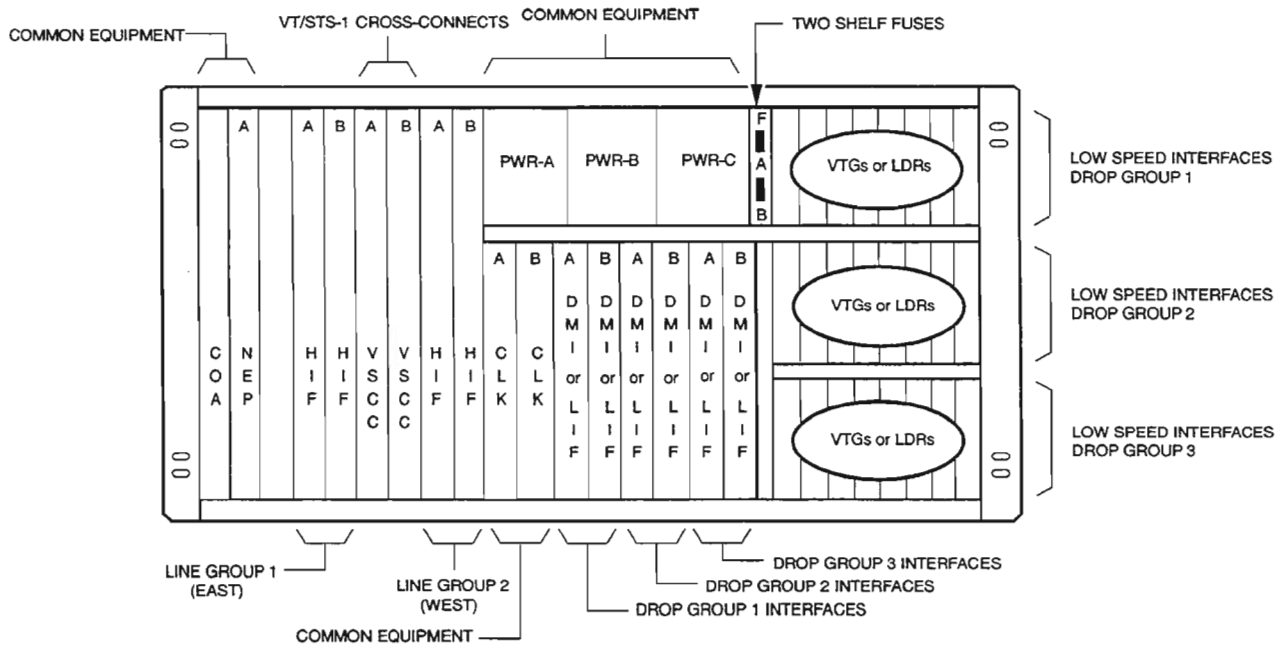
**Table A. Equipage Error Codes**

<b>CODE</b>	<b>DESCRIPTION</b>
ENAC	Not equipped with alarm cutoff
ENDG	Not equipped with diagnostic capability
ENDS	Equipage, not equipped with duplex switching
ENEQ	Equipage, not equipped
ENMD	Equipage, not equipped with memory device
ENPM	Equipage, not equipped with performance monitoring
ENPS	Equipage, not equipped with protection switching
ENRI	Equipage, not equipped for retrieving specified information
ENRS	Equipage, not equipped for restoration
ENSI	Equipage, not equipped for setting specified information
ENSS	Equipage, not equipped with synchronization switching
EQWT	Equipage, wrong type



**NOTES:** 1. It is recommended that alarm messages be analyzed to determine problems. Use this procedure only if a terminal is not available or communication with craft port has failed. Also, craft port access may be required to download software to the replacement unit.

2. When replacing plug-in units, a few minutes may be required for the system to stabilize and alarms to clear. If alarms do not clear, replace the original unit before replacing another unit.

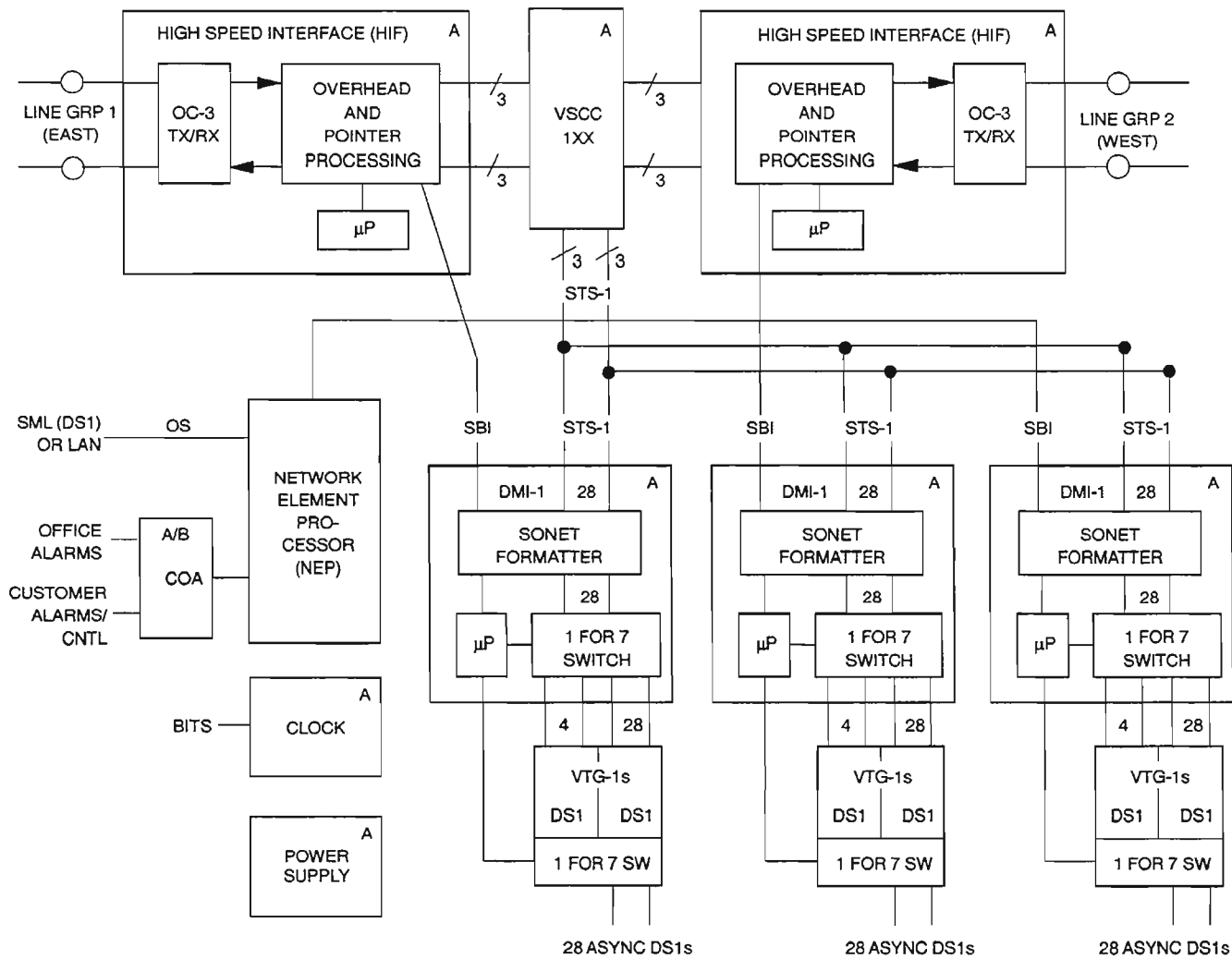


A7926

Figure 1. 1603/12 SM Shelf Layout

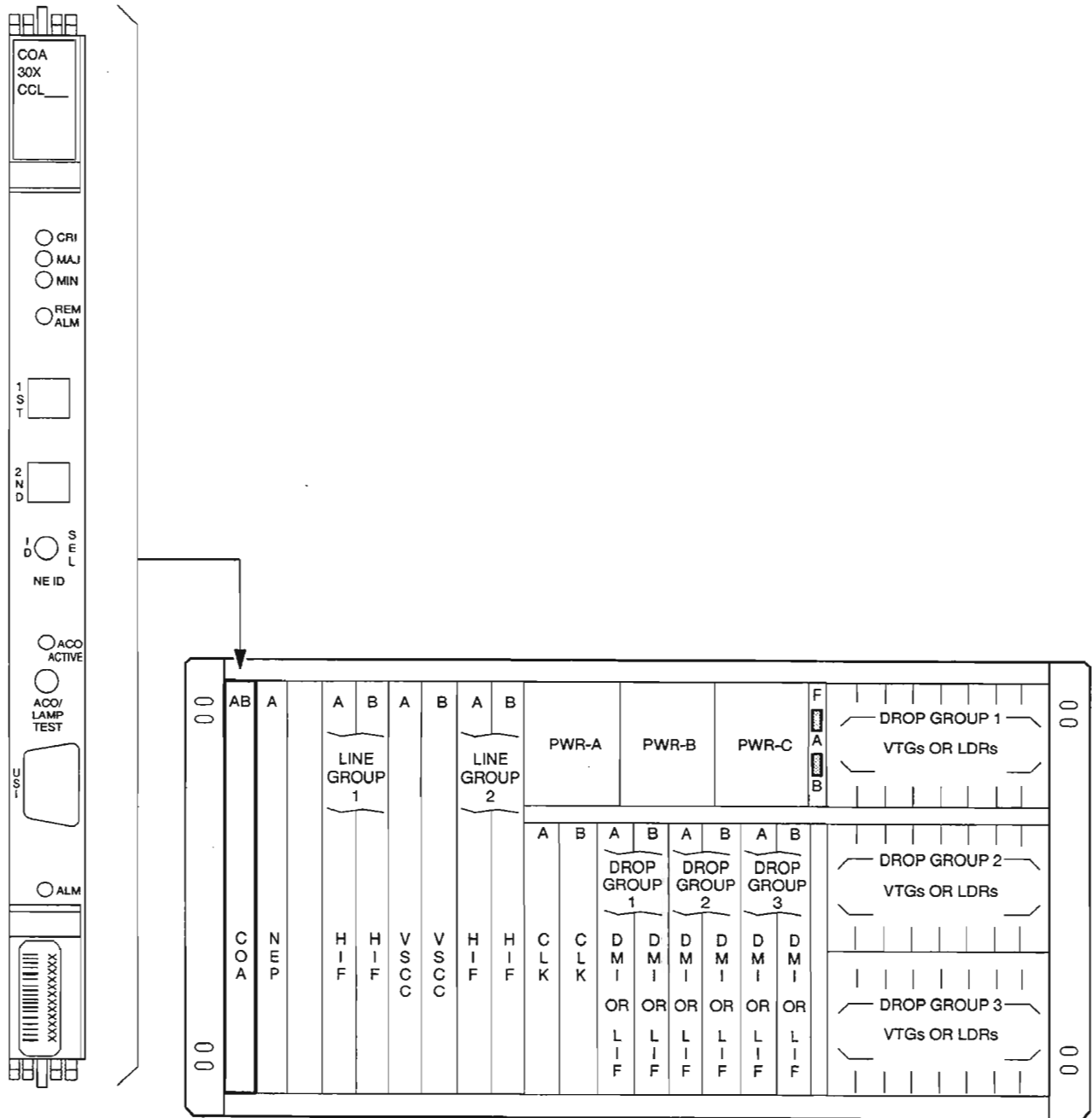
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 2 of 8	010





A7030Rev2

Figure 2. 1603 SM Functional Block Diagram

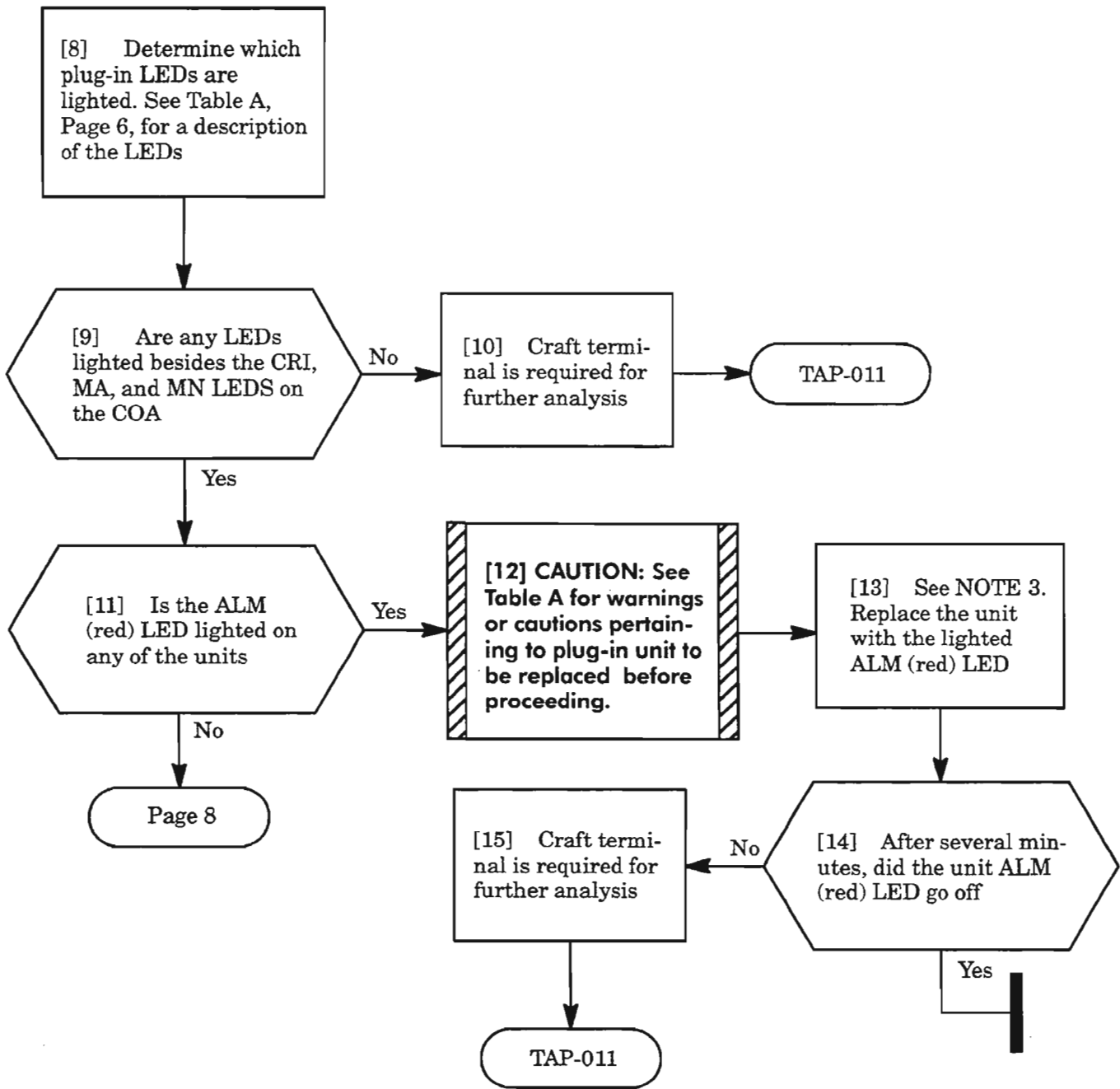


A7856

Figure 3. COA30X Plug-in Unit

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 8	010

ALARM RESOLUTION (VISUAL)



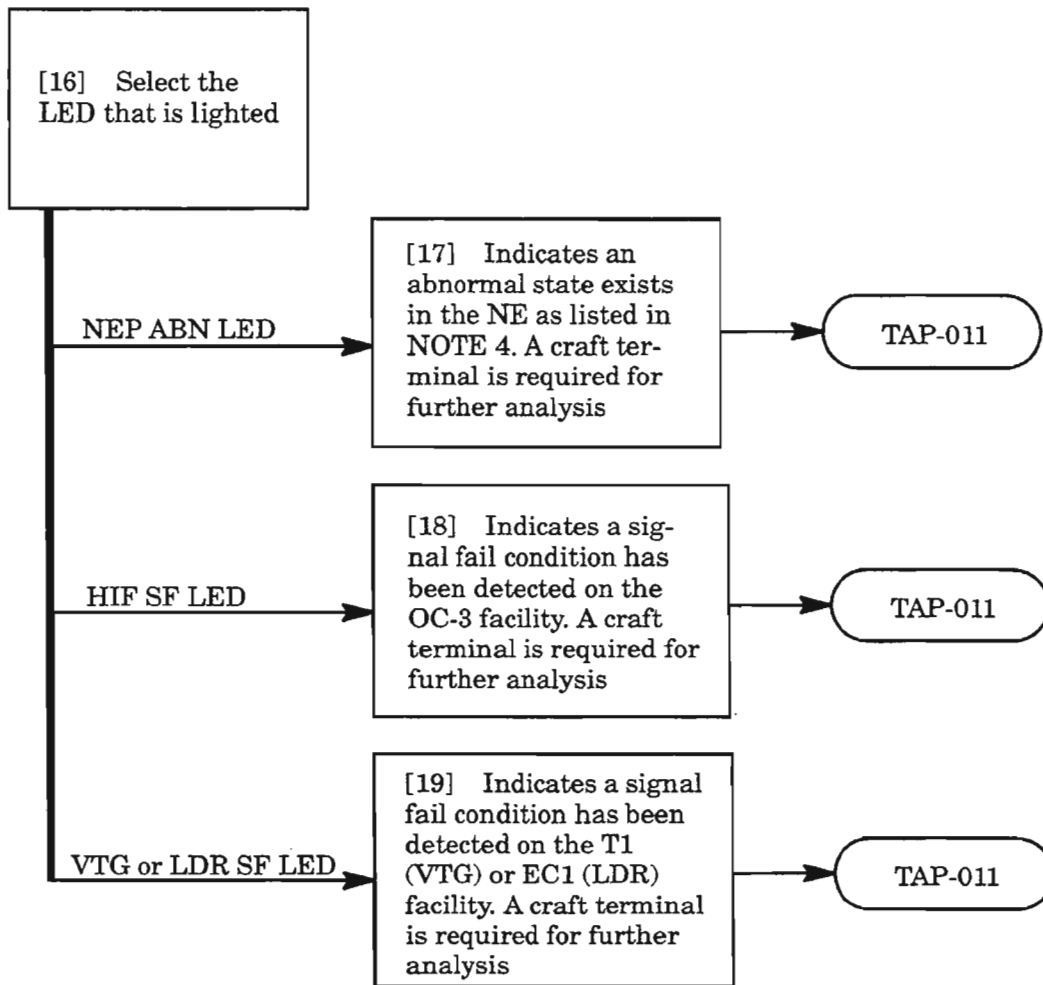
**NOTE: 3.** If NEP, HIF, LIF, DMI, or VSCC101 is replaced, unit may require software download, which requires a Personal Computer with the Download Tool installed. See DLP-116.

**Table A. 1603/12 SM Plug-in Alarm Indicators**

<b>UNIT/ ALARM LED</b>	<b>INDICATION WHEN ALARM LED IS LIGHTED</b>	<b>PROBABLE CAUSE/CORRECTIVE ACTION</b>
<b>COA30X Craft, Orderwire and Alarm Unit</b>		
CRI	Critical alarm level	Provides system alarm severity level
MJ	Major alarm level	Provides system alarm severity level
MN	Minor alarm level	Provides system alarm severity level
REM ALM	Remote (Far End) alarm is present. Requires Far End Alarm Display Number (FEADISPNUM) to be provisioned in DLMAP of NEs	Push ID SEL button to cycle through list of FEADISPNUMs reporting alarms to this NE
NE ID 7-Segment LED Display	When ID SEL button is pushed, remote NEs' FEADISPNUM are displayed along with active alarms indicated by CRI, MJ and MN LEDs	Determine what NE name (from office records or DLMAP) is associated with FEADISPNUM. Go to, or log onto, alarmed NE to resolve alarm(s)
ACO ACTIVE	Alarm cutoff has been activated	Silences office alarms, no action required
ALM	Unit failure	<b>CAUTION: See TAD-001 for data base information before replacing unit.</b>  Replace unit per DLP-101
<b>NEP301 Network Element Processor Unit</b>		
ACT	Unit is active	Not an alarm, status indicator only
ABN	Abnormal condition exists in NE, or unit is running bootcode if flashing	An equipment or facility has been placed into an abnormal state or NEP is running bootcode. See NOTE 4, Page 8
ALM	Unit failure	<b>CAUTION: See TAD-001 for data base information before replacing unit.</b>  Replace unit per DLP-101
<b>HIFXXX High Speed Interface Unit (OC-3) Unit</b>		
ACT	Unit is active	Not an alarm, status indicator only
SF	Incoming signal failure	Check facility, far-end NE, near-end and far-end facility provisioning
ALM	Unit failure	Replace unit per DLP-101
<b>CLK20X Clock Unit</b>		
ALM	Unit failure	Replace unit per DLP-101

Table A. 1603/12 SM Plug-in Alarm Indicators (cont)

UNIT/ ALARM LED	INDICATION WHEN ALARM LED IS LIGHTED	PROBABLE CAUSE/CORRECTIVE ACTION
<b>DMI102 Drop Module Interface Unit</b>		
ACT	Unit is active	Not an alarm, status indicator only
ALM	Unit failure	Replace unit per DLP-101
<b>VTG101 Virtual Tributary Group (Asynchronous DS1) Unit</b>		
SF	Signal failure on any or all of four DS1s served by unit	Check DS1 facility, far-end multiplexer equipment
ALM	Unit failure	<b>CAUTION: VTG with ALM lighted may be providing access to protection VTG for another unit and may interrupt service on that unit.</b> Replace unit per DLP-101
<b>LIFXXX Low Speed Interface Unit</b>		
ACT	Unit is active	Not an alarm, status indicator only
ALM	Unit failure	Replace unit per DLP-101
<b>LDRXXX Line Driver Unit</b>		
ACT	Unit is active	Not an alarm, status indicator only
SF	Incoming signal failure	Check facility, near-end and far-end facility provisioning
ALM	Unit failure	Replace unit per DLP-101
<b>PWRA01 Power Converter Unit (SP101 Shared Power Shelf only)</b>		
ON	-48 Vdc power is provided to unit	Not an alarm; normal indication. If off, -48 Vdc input is not present
ALM	Unit failure	Replace unit per DLP-101
<b>PWR801 Power Converter Unit (ADM-150 Dual Power Shelf Only)</b>		
ON	Unit power switch is on	Not an alarm; normal indication. If ON LED <u>and</u> ALM LED are off, -48 Vdc input is not present
ALM	Unit power switch is off or unit failure	<b>WARNING: Verify unit power switch is in the OFF position before removing or installing unit.</b> Verify power switch is in the ON position. Replace unit if both ON LED and ALM LED are lighted



**NOTE: 4.** The following conditions light the ABN LED on the NEP:

- *MTCE* (an equipment or facility is in maintenance state, OOS-MT);
- *INHSWDX* (switch to duplex equipment is inhibited);
- *INHAUTOMODESW* (inhibit auto switching back to primary timing reference when returning to normal);
- *INHSWWKG* (switch to working equipment inhibited);
- *INHSWPR* (switch to protection equipment inhibited);
- *LOCKOUTOFPR* (OC-3 facility APS locked out of protection);
- *FRCD/MAN* (forced or manual OC-3 line, STS-1 path or VT-1 path switch);
- *BOOT* (NEP unit is running bootcode, LED is flashing);
- *BOOT* (slave-processor unit is running bootcode);
- *PROGVER* (slave-processor unit has different program version than NEP);
- Ring configuration error.

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 8 of 8	010

[1] Log on to Network Element (NE) with alarm conditions (DLP-119)

[2] Enter command:

**RTRV-ALM-ALL:[tid]:ALL:[ctag];**

[3] Analyze response portion:

“aid,aidtype:ntfcncde,condall,srveff,,  
[locn],[tmper]:[conddescr],[aidet];[tblist]”  
See GENERAL EXPLANATION, Page 2

[4] If more than one alarm is listed, clear alarms in the following order (clear service-affecting alarms with higher severity levels first):

- Equipment alarms;
- Traffic-carrying facility alarms (EC1, OC3, T1, T3);
- Syncn alarms;
- STS-1 path alarms;
- VT1 path alarms;
- All others.

AND

Page 3

**GENERAL EXPLANATION**

**RESPONSE**

```

M sid yy-mm-dd hh:mm:ss
  ctag COMPLD
/*RTRV-ALM-ALL:[tid]:ALL:[ctag];*/
"aidr,aidtype:ntfcncde,condall,srveff,,, [locn],, [tmper]:[condocr],
 [aiddet]:,[tblislt]"
;
    
```

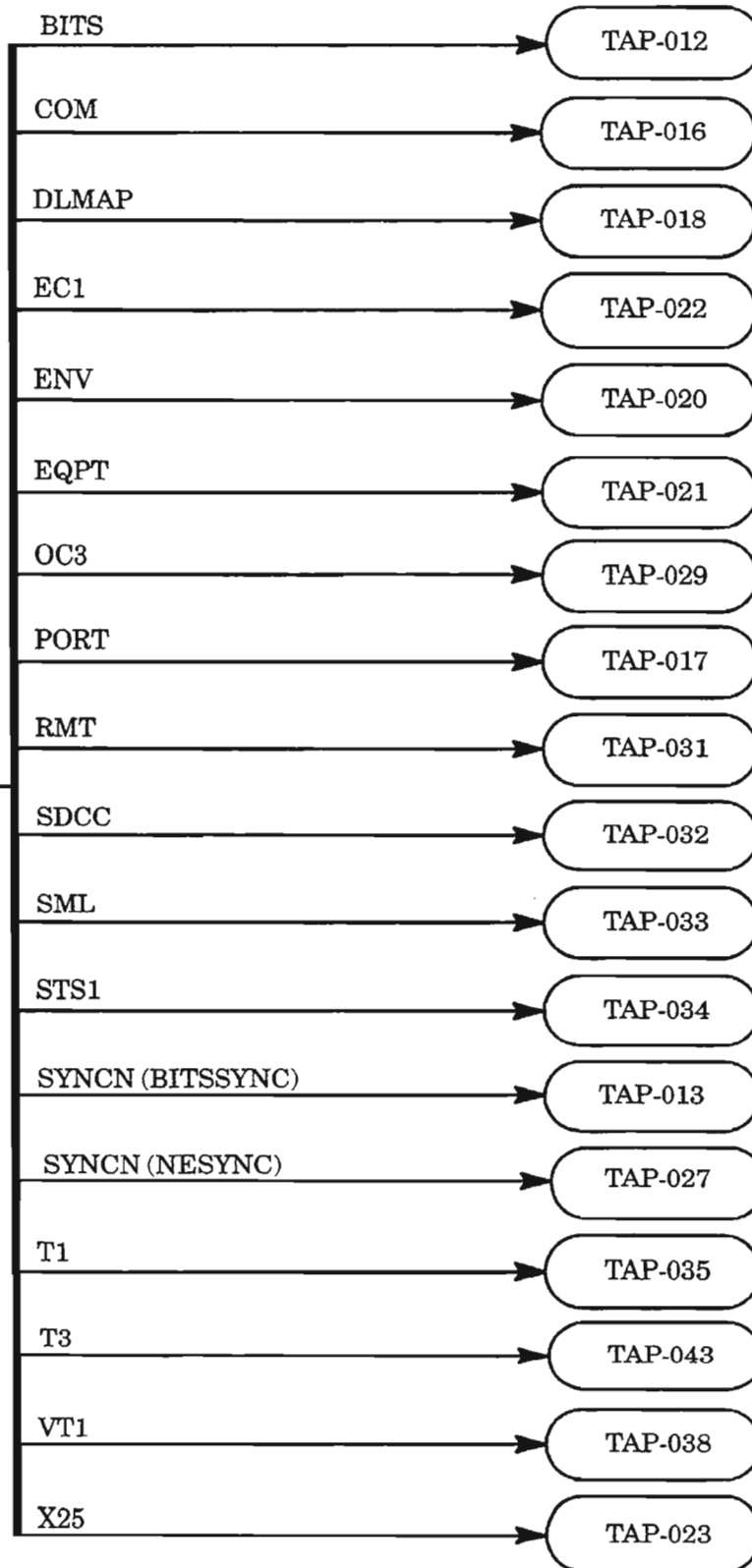
**WHERE**

- aidr** An access identification code use in conjunction with aidtype; see Table A, Page 4
- aidtype** Type of access identifier (aid), see Table A
- ntfcncde** 2-character notification code associated with a signal alarm condition:
- CR** critical alarm
  - MJ** major alarm
  - MN** minor alarm
- condall** Alarm condition of the aidtype. See TAP references, Page 3, for the aidtype
- srveff** Effect on service caused by the alarm condition:
- SA** Service-affecting condition; immediate action required
  - NSA** Non-service-affecting condition
- [locn]** Location where the performance monitor reports:
- FEND** far end
  - NEND** near end
- The valid format with values is either 1-DAY or 15-MIN. The accumulation time period is for 1 day or for 15 minutes
- [tmper]** Accumulation time period for performance monitoring information. The format and its values are:
- val-un (value – unit of time)
- where: val = 1 (for 1 day)
- = 15 (for minutes of an hour)
- un = DAY (unit of 24 hours)
- = MIN (unit of 15 minutes)
- [condocr]** Text description of the trouble in 1..62 characters
- [aiddet]** Supplementary equipment identification used to identify the location of the reported trouble. Valid values are: **A, B, AB**
- [tblislt]** Significance of the isolation information provided by the AID that is included in this message. Valid values are:
- ISLTD** Isolated, the aid is a replaceable or repairable unit
  - NIPSS** Not isolated, all diagnostics passed, aid reports suspected units
  - NIMAN** Not isolated, isolation must be performed manually, suspected units identified in the aid

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 2 of 5	011



[5] Go to the appropriate procedure based on the aidtype



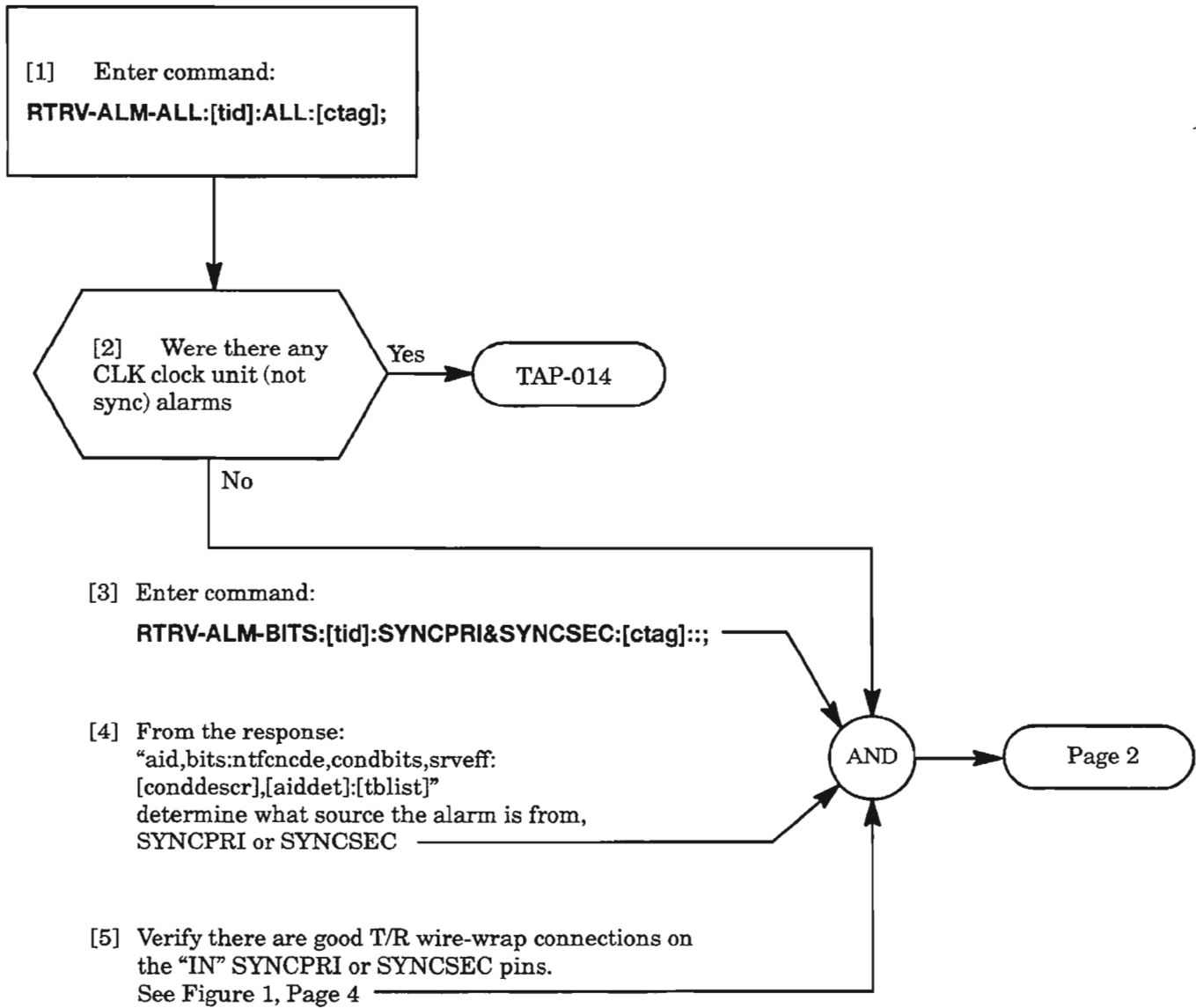
**Table A. Identification Codes**

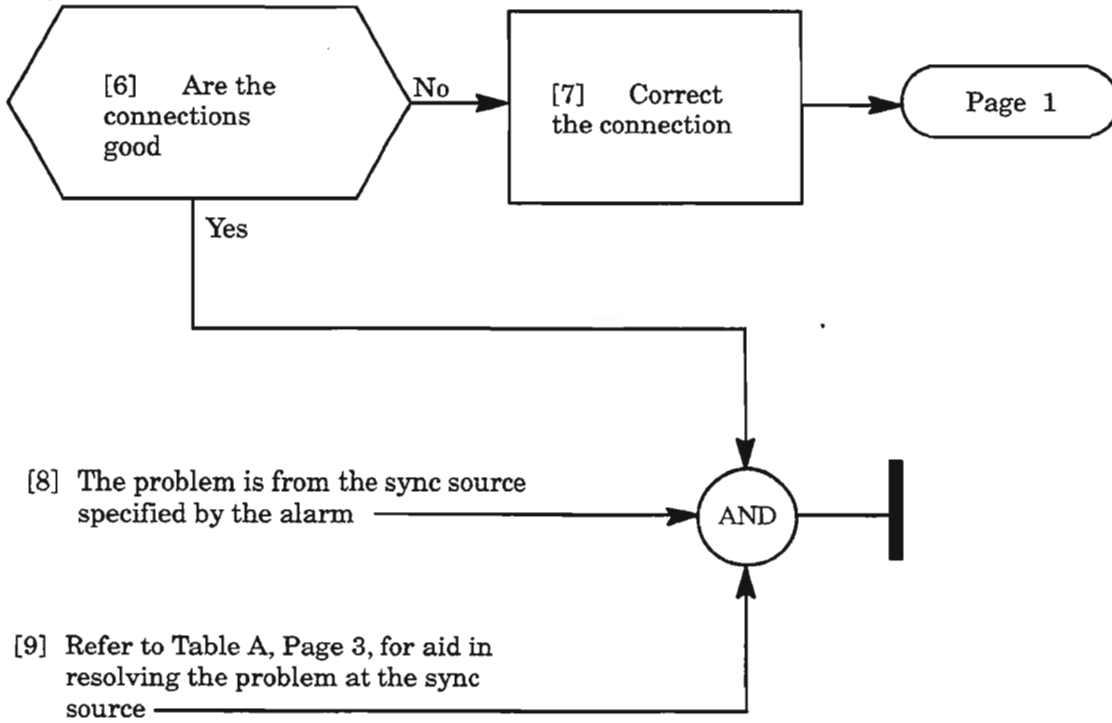
<b>AIDTYPE PARAMETER</b>	<b>FORMAT (WHERE APPLICABLE)</b>	<b>AIDR PARAMETER</b>
BITS		SYNCPRI, SYNCSEC
COM		COM = common equipment
DLMAP		NETID = terminal identification or network name in 1...20 ASCII characters
EC1	dgx-EC1-stspath	where: dgx = DG1, DG2, DG3 stspath = 1
ENV	ENV-envnum	where:envnum = 1...12 (alarm input number)
EQPT	pba: (common units)	where: pba = COA, NEPA, NEPB (future), VSCCA, VSCCB, CLKA, CLKB, PWRA, PWRB, PWRC
	dgx-dmiab: (DMI units)	where: dgx = DG1, DG2, DG3 dmiab = DMIA, DMIB
	dgx-lifab: (LIF units)	where: dgx = DG1, DG2, DG3 lifab = LIFA, LIFB
	dgx-ldrab-ldrport: (LDR units)	where: dgx = DG1, DG2, DG3 ldrab = LDRA, LDRB ldrport = 1
	dgx-VTG-vtgport: (main VTG units)	where: dgx = DG1, DG2, DG3 vtgport = 1...7
	dgx-VTG-P: (prot. VTG unit)	where: dgx = DG1, DG2, DG3
	lgx-hifab: (HIF units)	where: lgx = LG1, LG2 hifab = HIFA, HIFB
OC3	lgx-oc3ab	where: lgx = LG1, LG2 oc3ab = OC3A, OC3B
PORT		CRAFT1, CRAFT2, SE2A, X25PORT
RMT		NETID = terminal identification or network name in 1...20 characters
SDCC		MAINT1, MAINT2 (Future), LG1, LG2
SML		MAINT1, MAINT2 (Future)
STS1 (line group)	lgx-stsab-stspath	where: lgx = LG1, LG2 stsab = STS1A, STS1B stspath = 1, 2, 3 (STS-1 Path)
STS1 (drop group)	dgx-STs1-stspath	where: dgx = DG1, DG2, DG3 stspath = 1 (STS-1 Path)
SYNCN		NESYNCA, NESYNCB, BITSSYNCA, BITSSYNCB

**Table A. Identification Codes (cont)**

<b>AIDTYPE PARAMETER</b>	<b>FORMAT (WHERE APPLICABLE)</b>	<b>AIDR PARAMETER</b>
T1	dgx-T1-ds1port	where: dgx = DG1, DG2, DG3 ds1port = 1...28
T3	dgx-T3-ds3port	where: dgx = DG1, DG2, DG3 ds3port = 1
VT1 (line group)	lgx-vtab-stspath- vtpath	where: lgx = LG1, LG2 vtab = VT1A, VT1B stspath = 1...3 vtpath = 1...28
VT1 (drop group)	dgx-VT1-stspath- vtpath	where: dgx = DG1, DG2, DG3 stspath = 1 vtpath = 1...28
X25		where: X25 = X.25 protocol stack





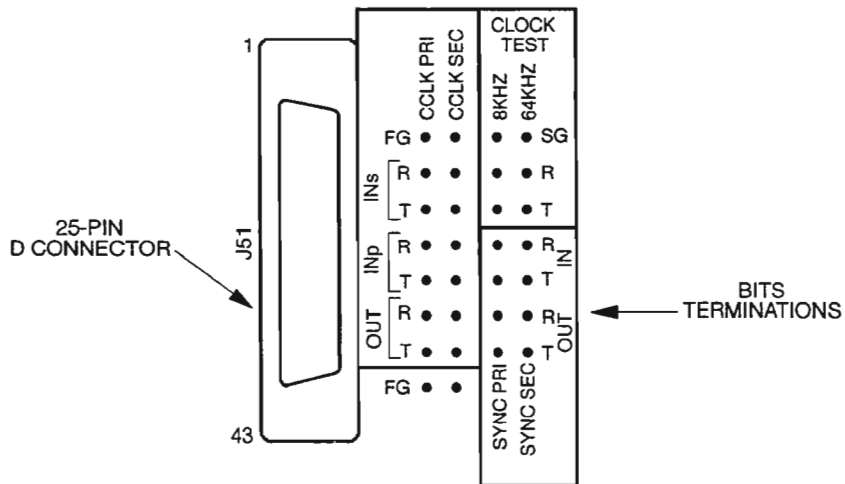
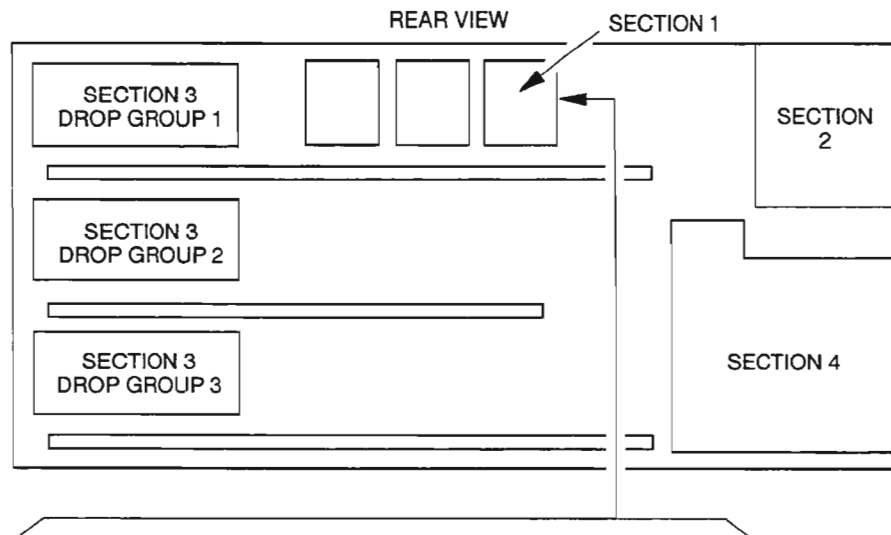


ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	012

**CLEAR BITS ALARM (INPUT)**

**Table A.**

<b>CONDITION</b>	<b>SERVICE-AFFECTING</b>	<b>DEFAULT NOTIFICATION</b>	<b>DESCRIPTION</b>
AIS	NSA	NA	Alarm Indication Signal, all ones. A status condition that alerts downstream equipment that an alarm has occurred upstream
AISYEL	NSA	NA	Alarm Indication Signal – Yellow. A status condition that alerts upstream equipment that an AIS has been received in the downstream equipment
LOF	NSA	MN	Loss-Of-Frame – An excessive amount of out-of-frame occurrences took place on the incoming signal, verify source
LOS	NSA	MN	Loss-Of-Signal – A complete loss of signal, “all-zeros-pattern”, no physical layer, has been received; verify connection per Figure 1 and downline
MTCE	NSA	MN	Maintenance – Removed from service for maintenance
BER-HT	NSA	MN	Bit Error Ratio-High Threshold – Signal has failed due to the ratio of the number of bits in error to the total number of bits transmitted during a measured period degrading the signal
YEL	NSA	NA	Yellow – Notification to the upstream that there is a downstream failure to initiate trunk conditioning on the failed circuit



A7848Rev1

Figure 1. Rear View, Section 1 Cabling

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 4 of 4	012

CLEAR BITS ALARM (INPUT)



[1] If necessary, enter the command:

**RTRV-ALM-SYNCN:[tid]:aid:[ctag]::;**

where: aid = BITSSYNC

[2] Analyze the response portion:

aid,SYNCN:ntfncde,condsyncn,  
srveff:[conddescr],[aiddet];[tblist]



[3] Identify the condition type (condsyncn), then go to the page indicated to clear the alarm

PRI-HIFXX

Page 2

PRI-DGXX

Page 3

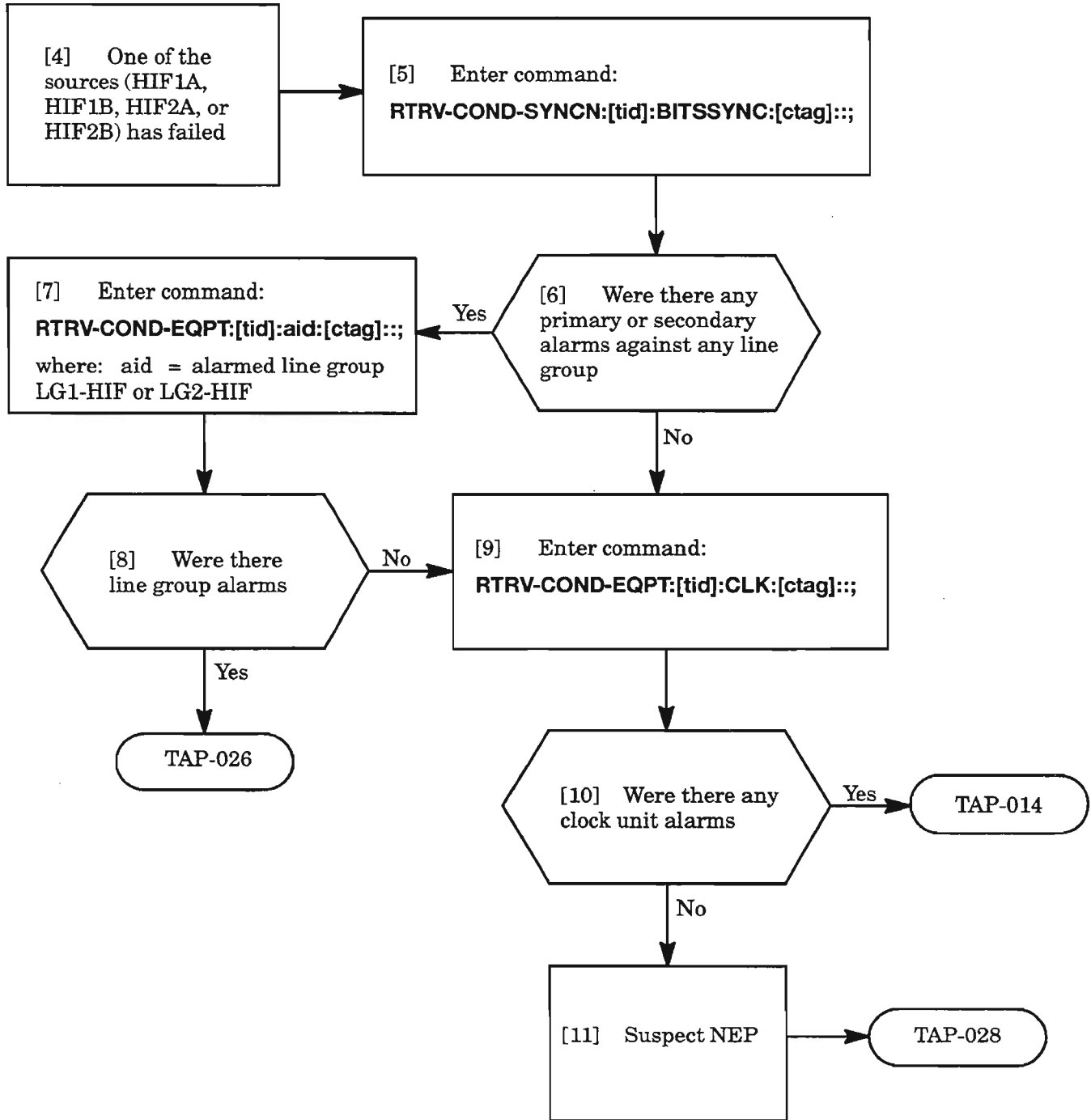
INHAUTOMODESW

Page 4

LOCKOUTOFSYNC

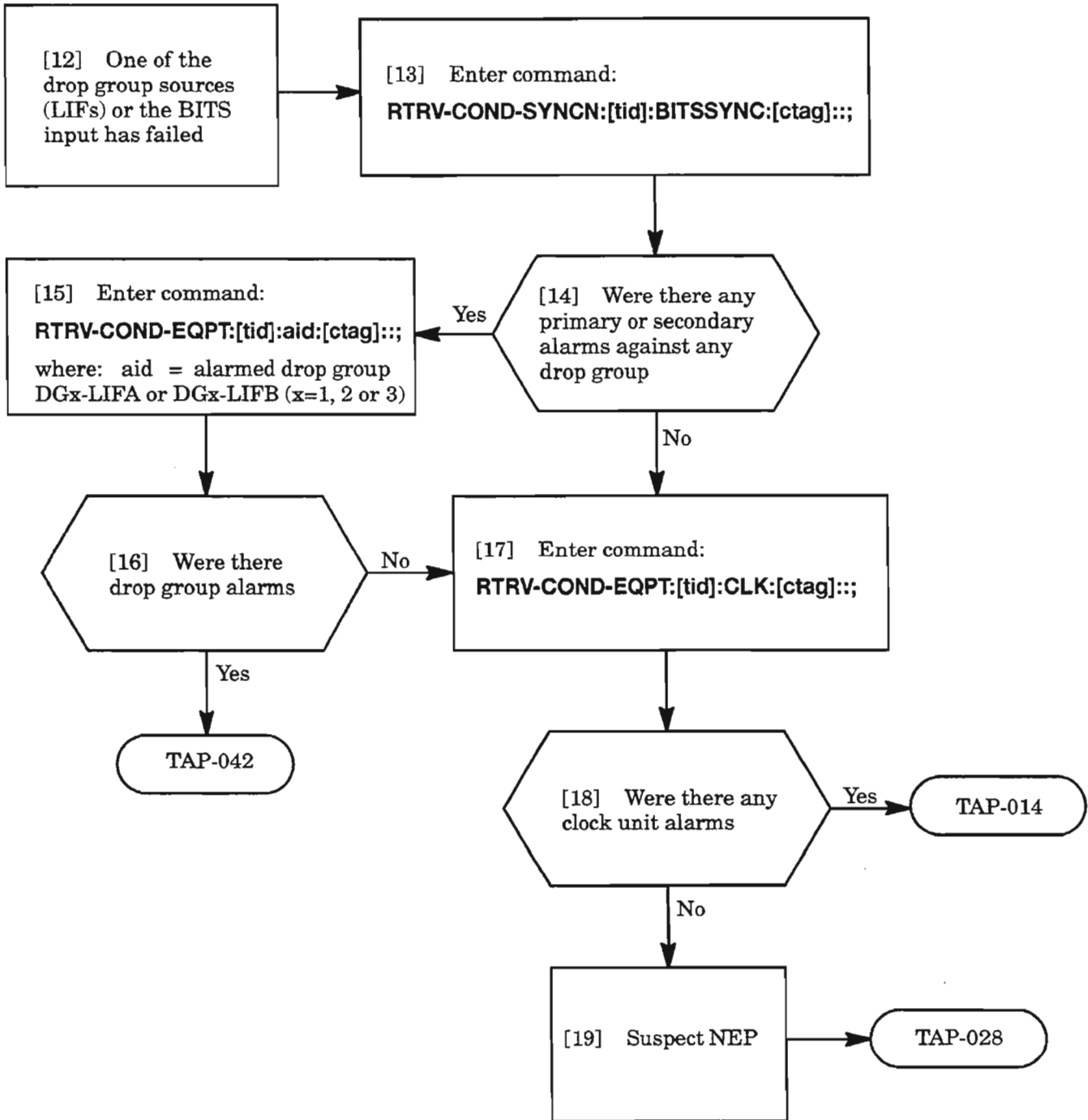
Page 5

**PRI-HIFXX**

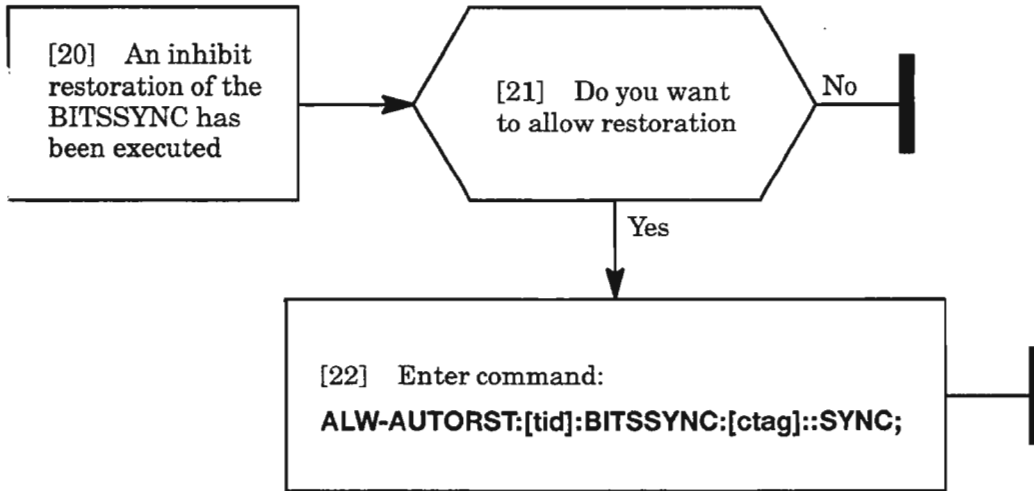


ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 5	013

**PRI-DGXX**



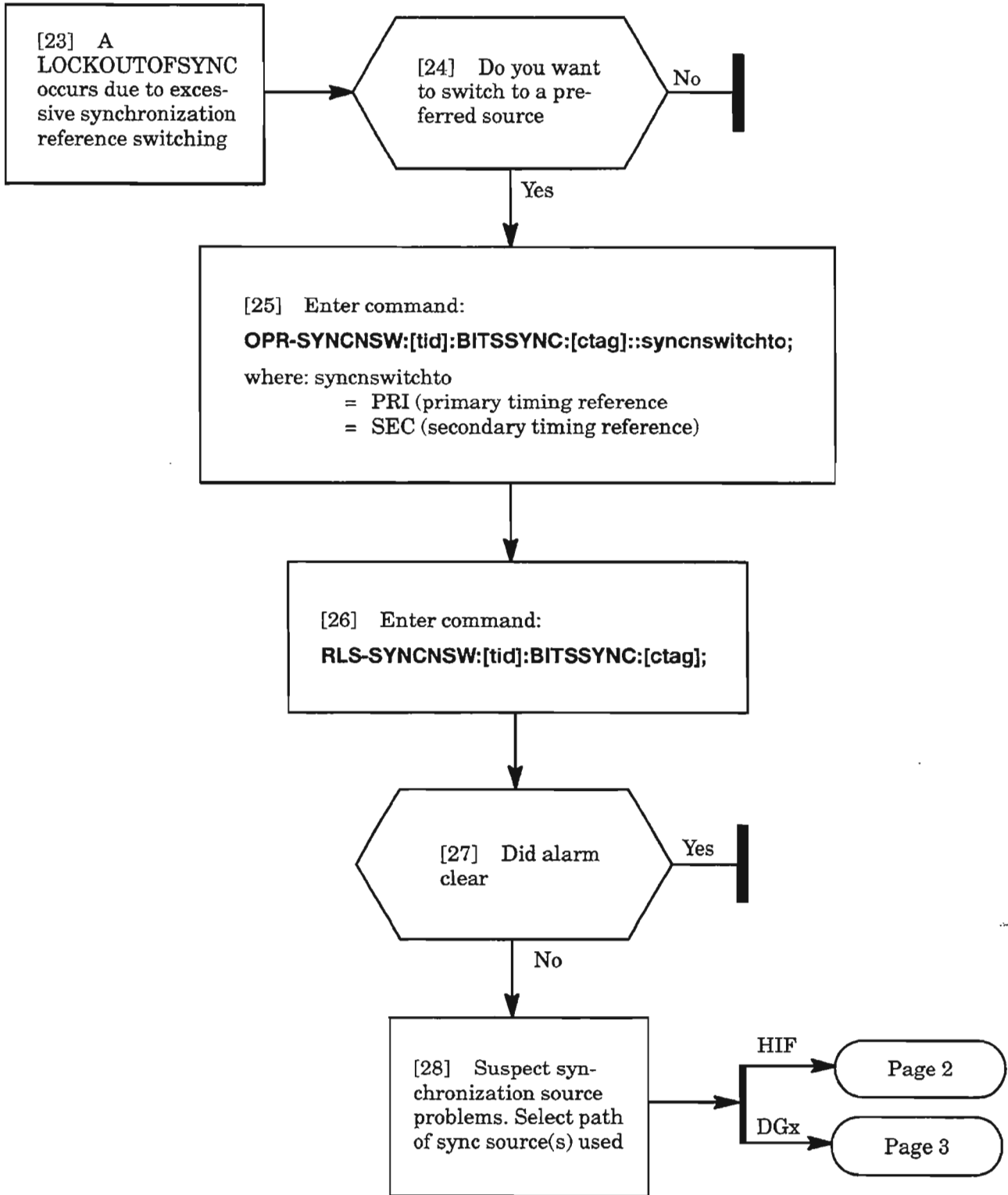
# INHAUTOMODESW

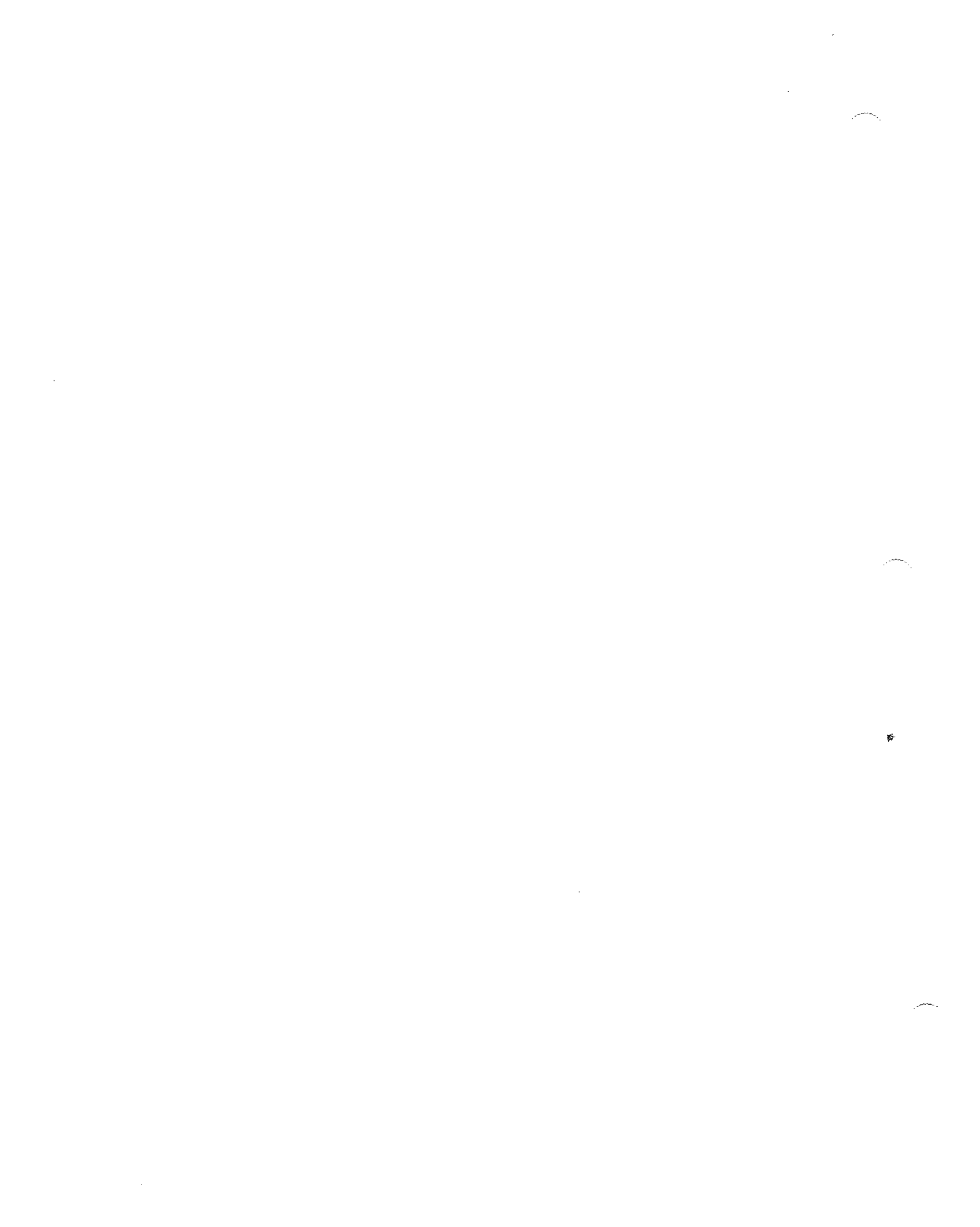


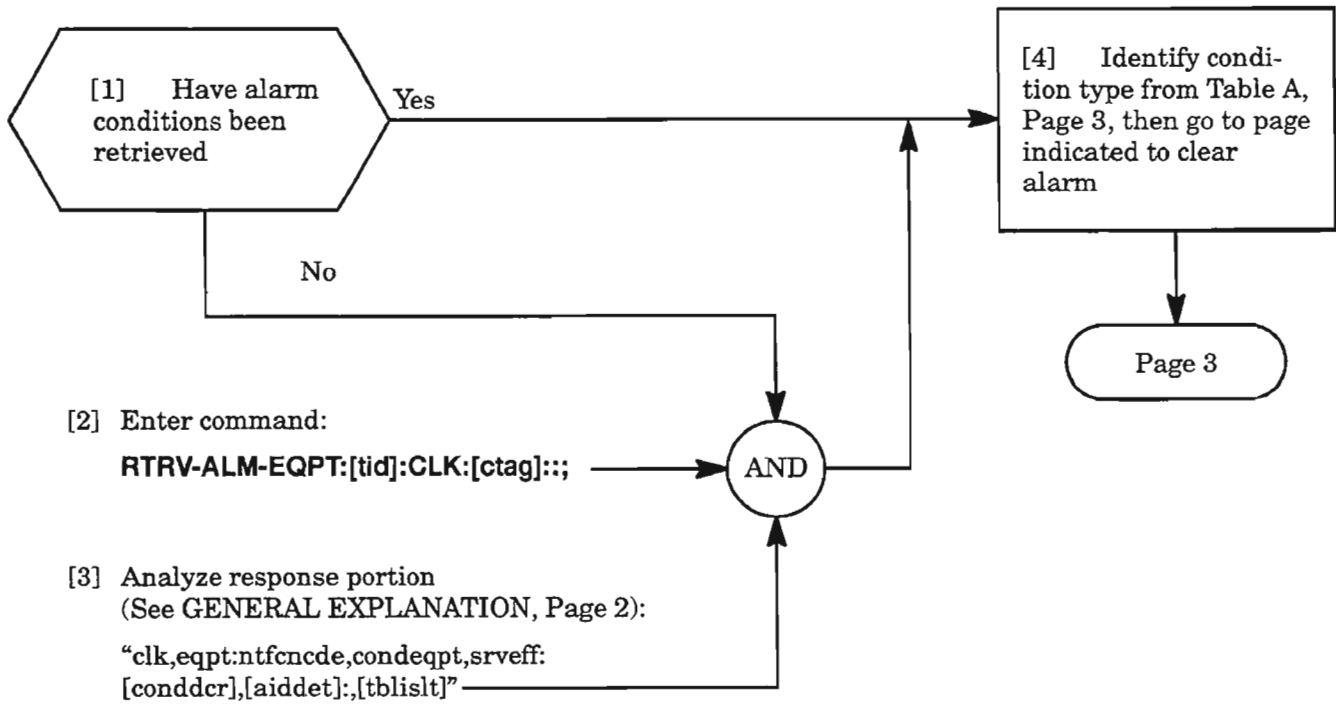
ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 4 of 5	013

CLEAR SYNCN (BITSSYNC) ALARM (BITS OUTPUT)

# LOCKOUTOFSYNC







**CLEAR CLOCK UNIT ALARM**

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 1 of 17	014

GENERAL EXPLANATION

RESPONSE

```

sid yy-mm-dd hh:mm:ss
M ctag COMPLD
  "clk,eqpt:ntfncdcde,condeqpt,srveff:[condcde],
  [aidet]:,[tblislt]"
/*RTRV-ALM-EQPT:[tid]:CLK:[ctag]::[ntfncdcde],[condeqpt],[srveff]*/
;

```

WHERE

**ntfncdcde** 2-character notification code associated with a signal alarm condition. Valid values are:

- CR** = critical alarm
- MJ** = major alarm
- MN** = minor alarm

**condeqpt** Alarm condition of the clock unit, see Table A, Page 3

**srveff** Effect on service caused by the alarm condition. The parameter may be preceded by "srveff=", although it is not required. Valid values are:

- SA** = Service-affecting condition; immediate action required
- NSA** = Non-service-affecting condition

**[condcde]** Detail text description of trouble in 1..62 characters

**[aidet]** Supplementary equipment identification used to identify location of reported trouble. Valid values are:

- A, B, AB**

**[tblislt]** Significance of the isolation information provided by the aid that is included in this message. Valid values are:

- ISLTD** = isolated, the aid is a replaceable or repairable unit
- NIPSS** = not isolated, all diagnostics passed, aid reports suspected units
- NIMAN** = not isolated, isolation must be performed manually, suspected units identified in the aid

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 2 of 17	014



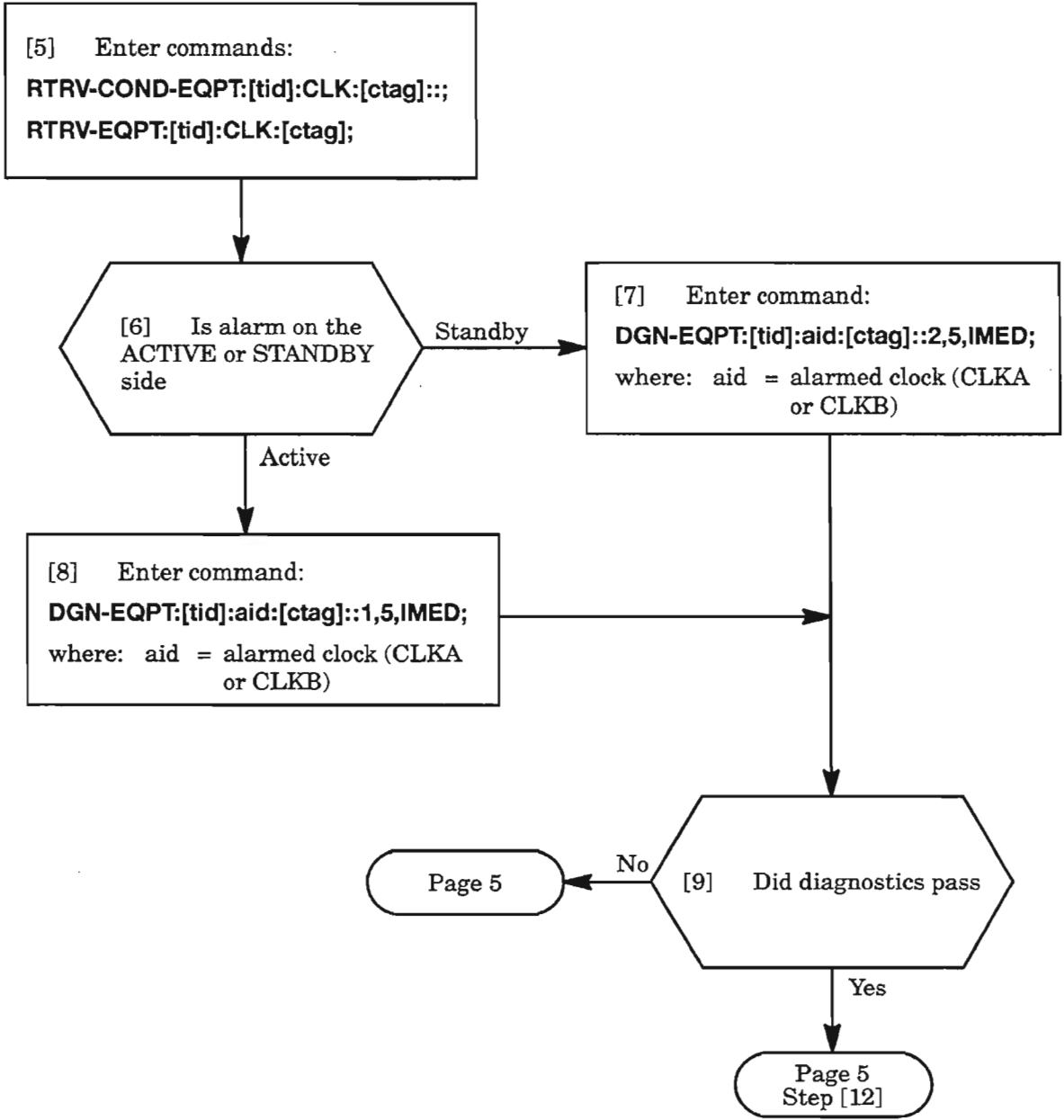
**Table A. Conditions**

<b>CONDITION/ALARM</b>	<b>DEFINITION</b>	<b>PAGE</b>
CNTBUS	Standby SLI loop test failure to standby NEP	4
CONTCOM	Control communication failure – internal NEP to CLK communication failure to active NEP	4
FAILTOSW	Failure to switch to protection	6
IMPROPRMVL	Improper removal	9
INHDBGN	Inhibit automatic/periodic diagnostics	15
INHMPREPT	Inhibit PM report	15
INHSDWX	Switch to duplex equipment inhibited; affects NEP and EOP since switches as group	15
INT	Internal hardware fault, PLL failure, etc.	4
INVERR	Inventory error	16
MEA	Mismatch of equipment and attributes	11
MTCE	Removed from service for maintenance	10
PLLEOR	Phase locked loop at end of range	12
SYNCCLK	Cross-over clock failure	13

**CLEAR CLOCK UNIT ALARM**

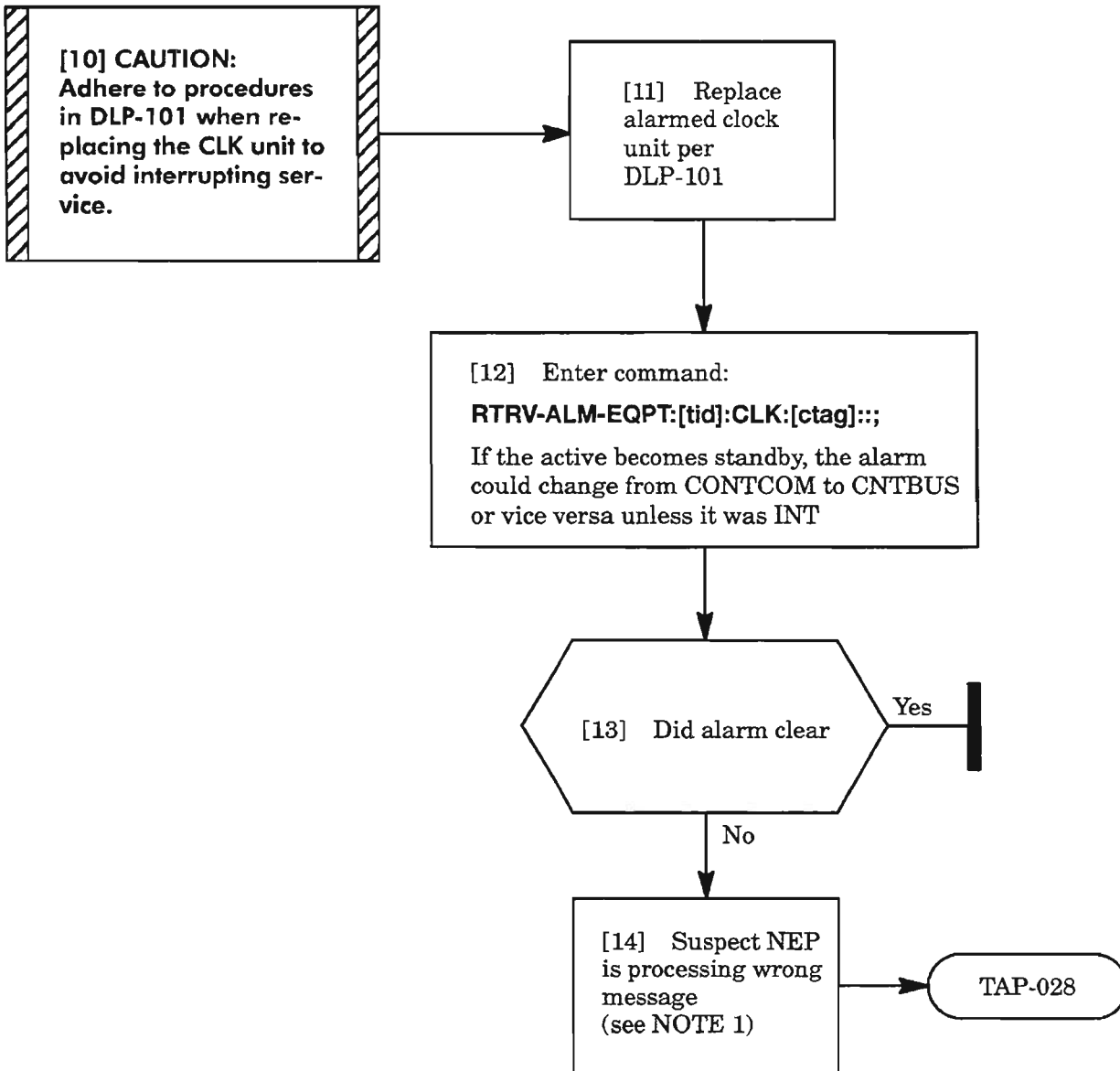
<b>ISSUE 2</b>	<b>JULY 1994</b>
<b>ALCL 363-203-502</b>	<b>TAP</b>
<b>PAGE 3 of 17</b>	<b>014</b>

# CONTCOM/CNTBUS/INT



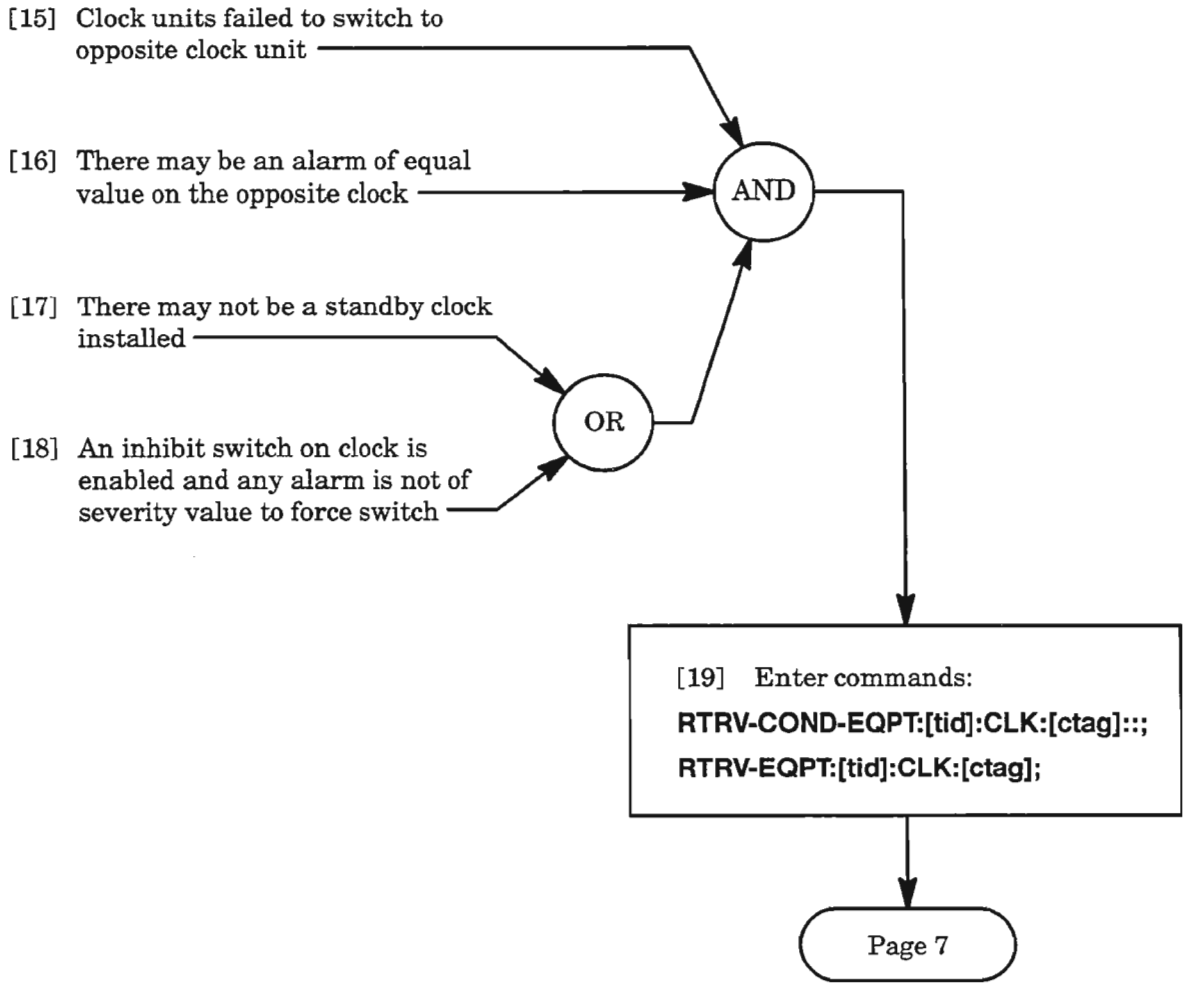
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 17	014

**CONTCOM/CNTBUS/INT (cont)**



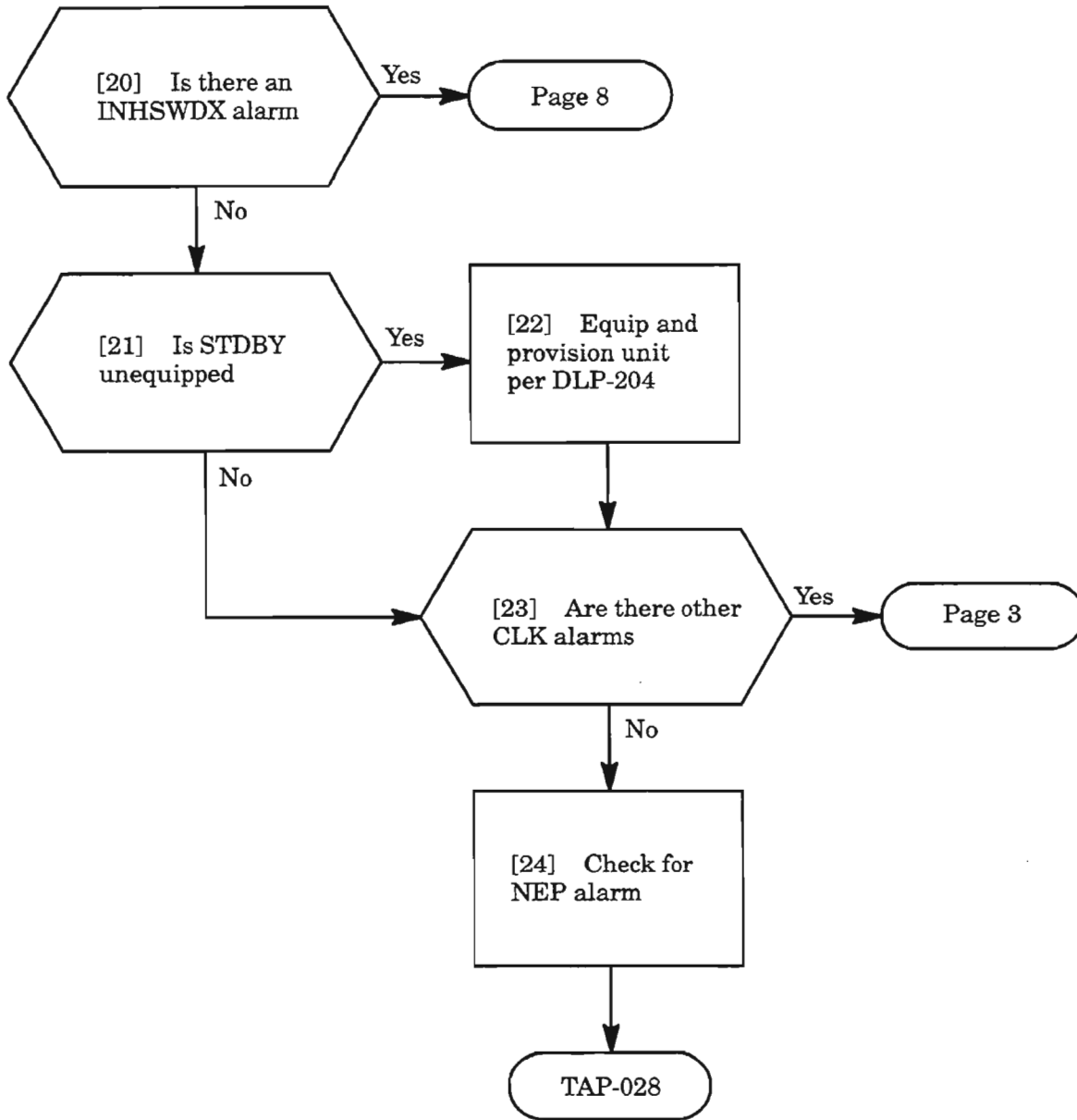
**NOTE:** 1. *If the clock has not been replaced and NEP gives no indication of being in error, go to Step [10].*

# FAILTOSW



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 17	014

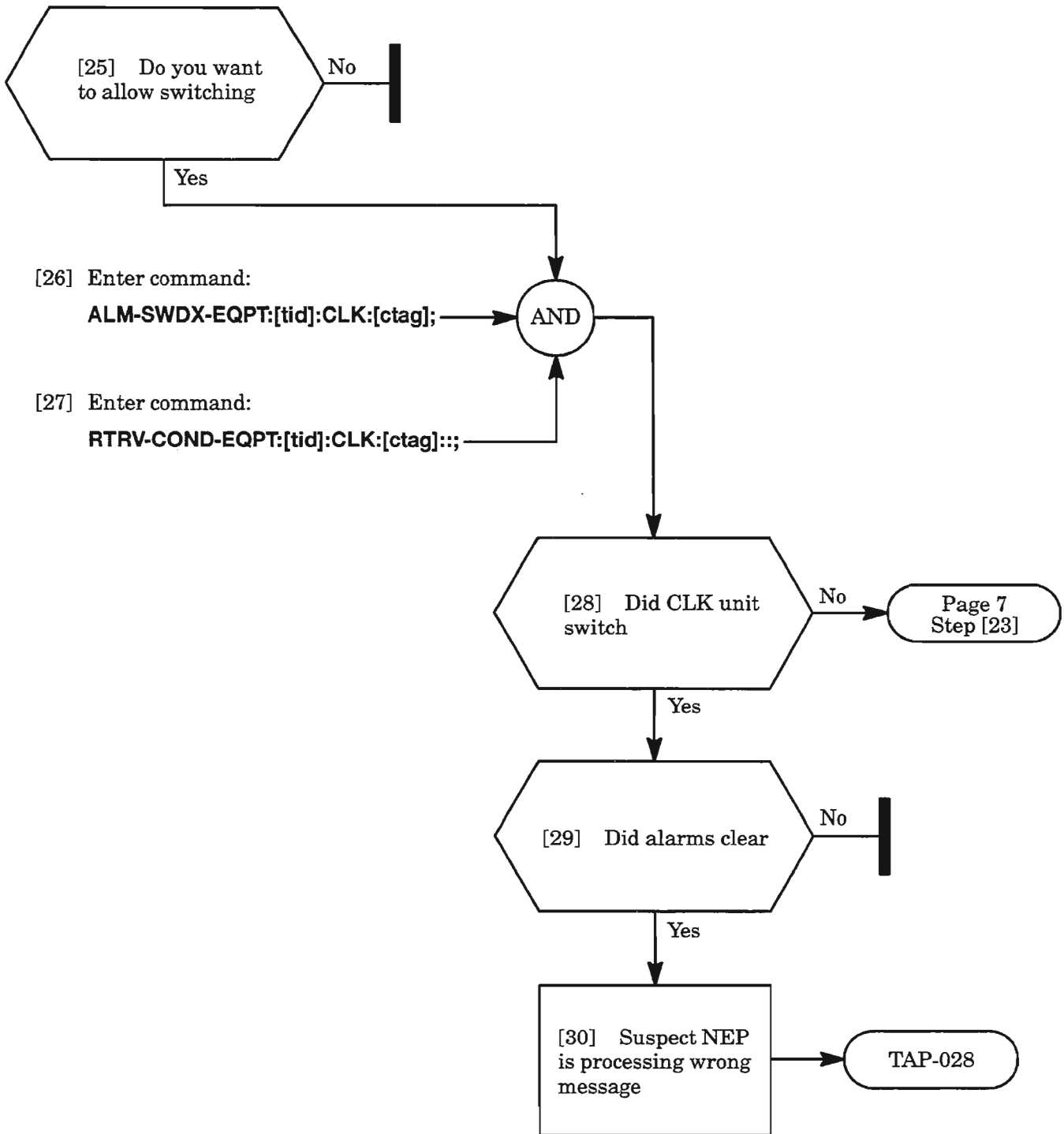
**FAILTOSW (cont)**



**CLEAR CLOCK UNIT ALARM**

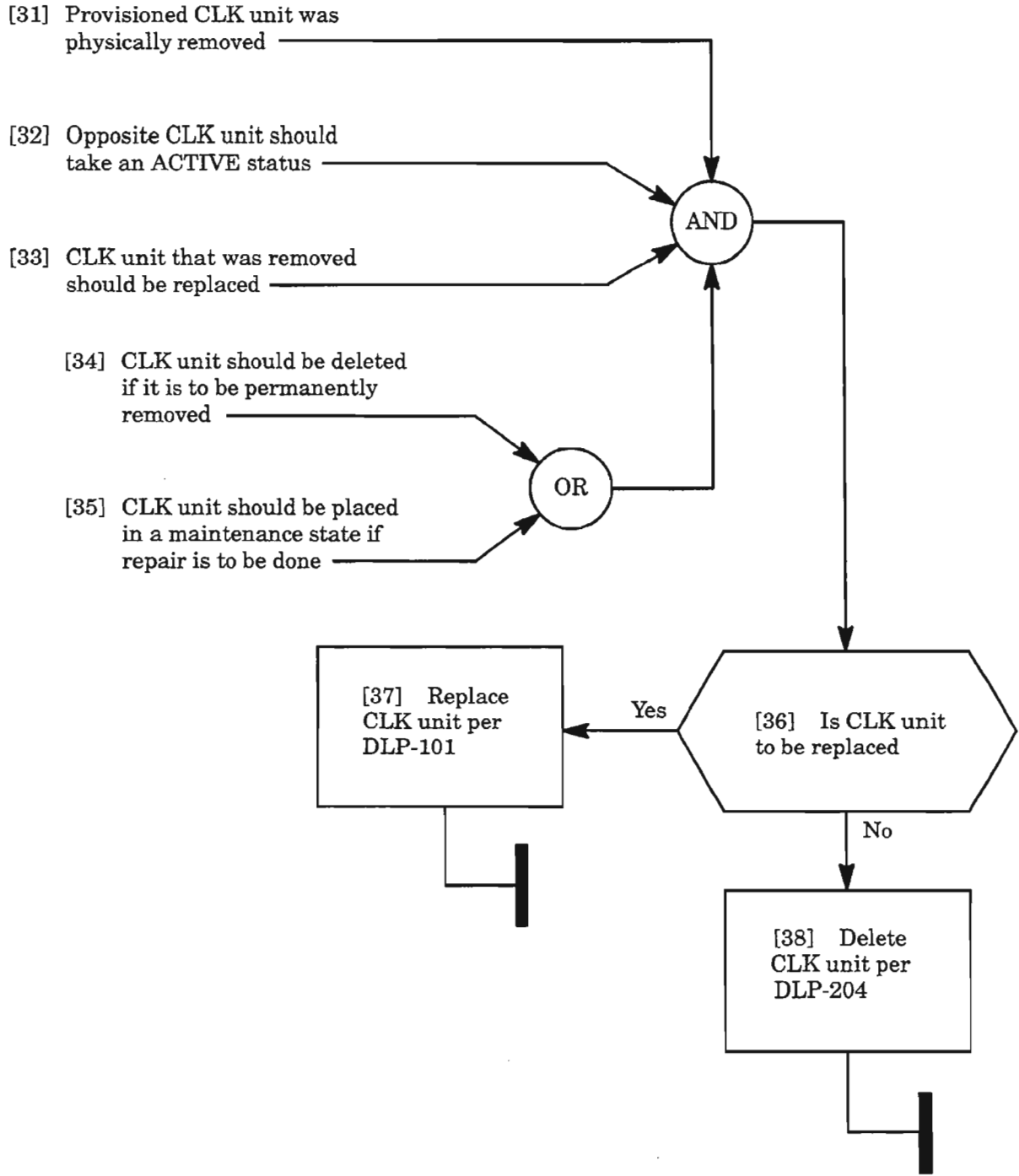
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 7 of 17	014

**FAILTOSW (cont)**

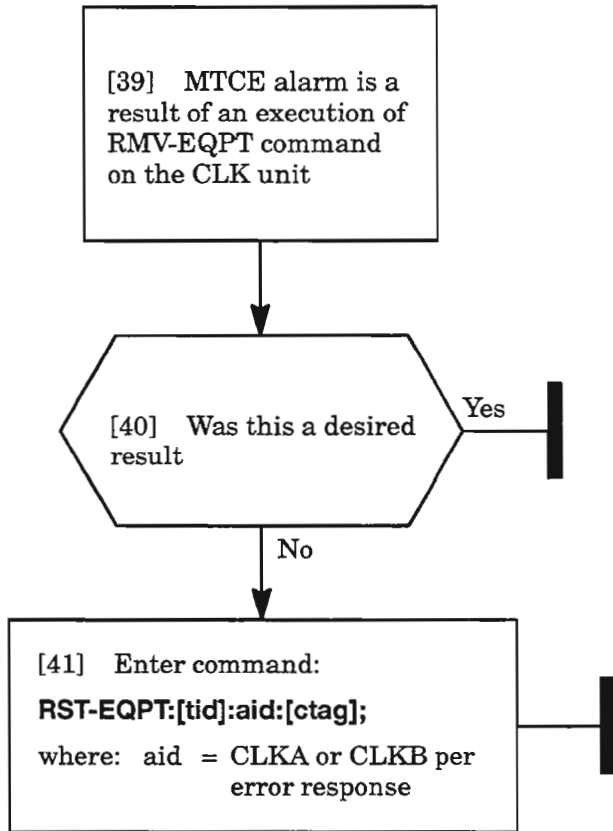


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP 014
PAGE 8 of 17	

# IMPROPRMVL



# MTCE



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 17	014



**MEA**

[42] The data base entry for the alarmed unit does not match equipment type parameter on unit EEPROM

[43] Enter the following command:

**RTRV-INV-EQPT:[tid]:aid:[ctag];;**

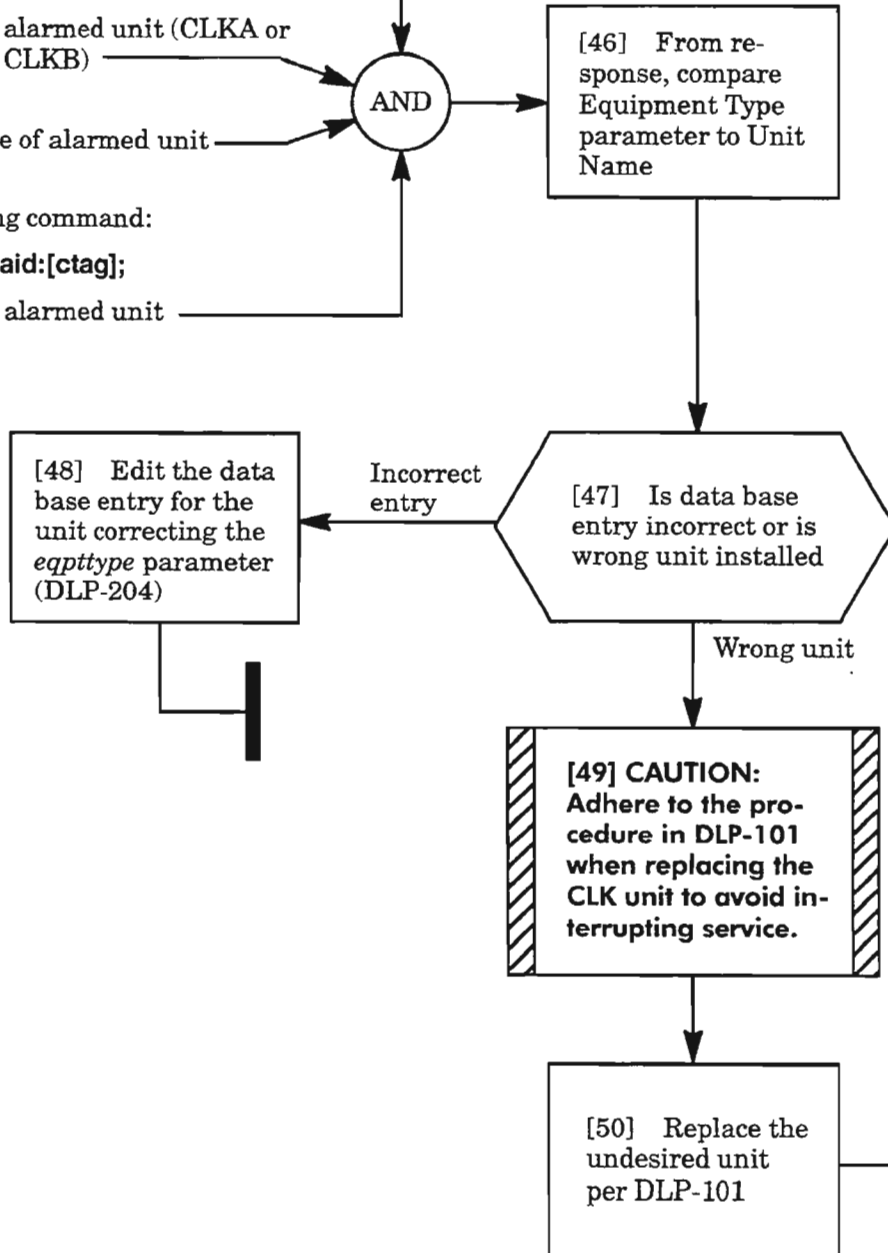
where: aid = alarmed unit (CLKA or CLKB)

[44] Record Unit Name of alarmed unit

[45] Enter the following command:

**RTRV-EQPT:[tid]:aid:[ctag];**

where: aid = alarmed unit



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 11 of 17	014

# PLLEOR

[51] CLK unit in alarm indicates its phase lock loop is reaching its range end

[52] Crystal has expended 3/4 of its life

[53] CLK unit in alarm must be replaced soon

[54] Enter command:

**RTRV-COND-EQPT:[tid]:aid:[ctag]::PLLEOR;**

where: aid = CLK unit in alarm



**[55] CAUTION:**  
Adhere to the procedure in DLP-101 when replacing the CLK unit to avoid interrupting service.

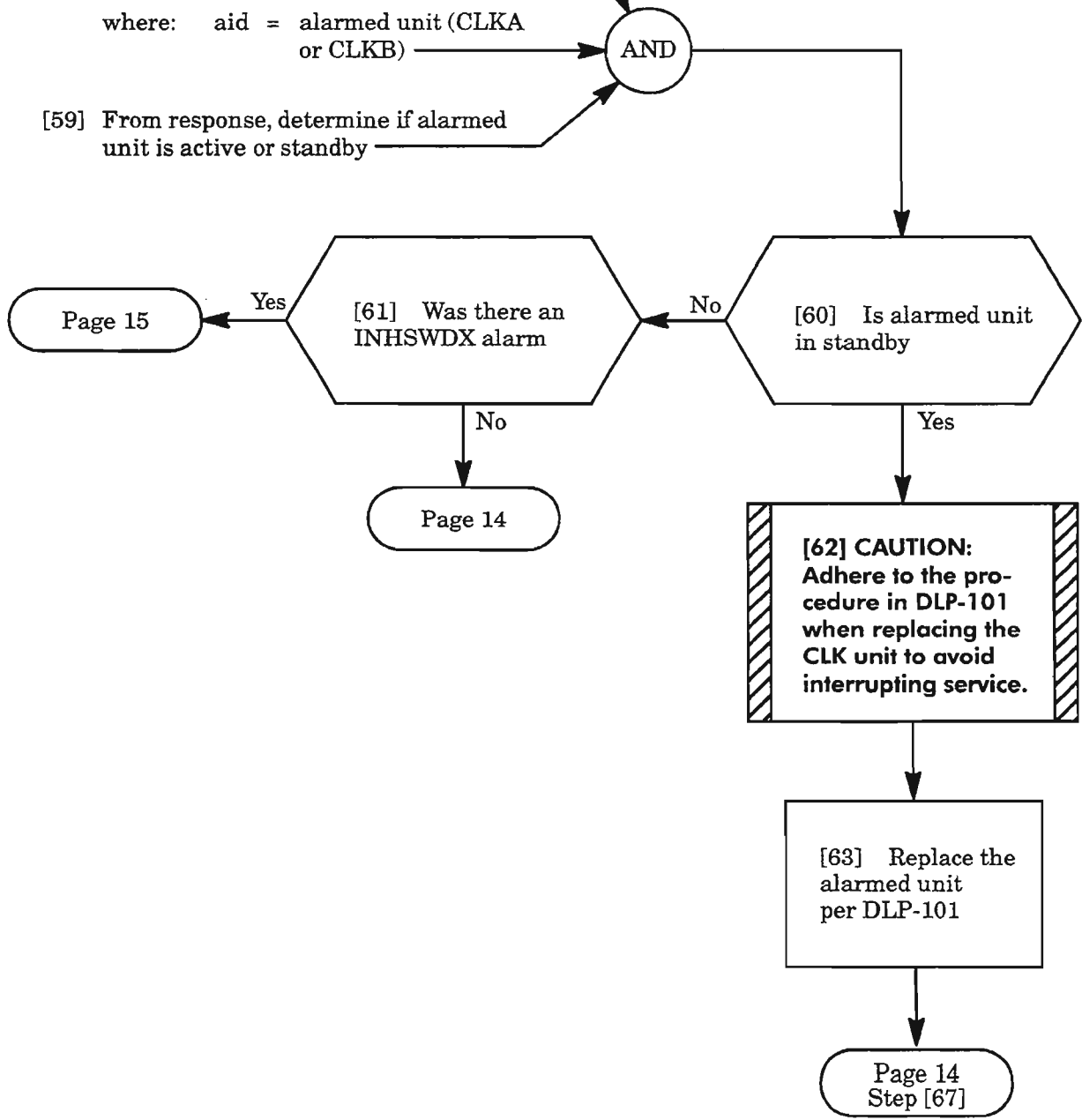
[56] Replace the alarmed unit per DLP-101

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 17	014

**CLEAR CLOCK UNIT ALARM**

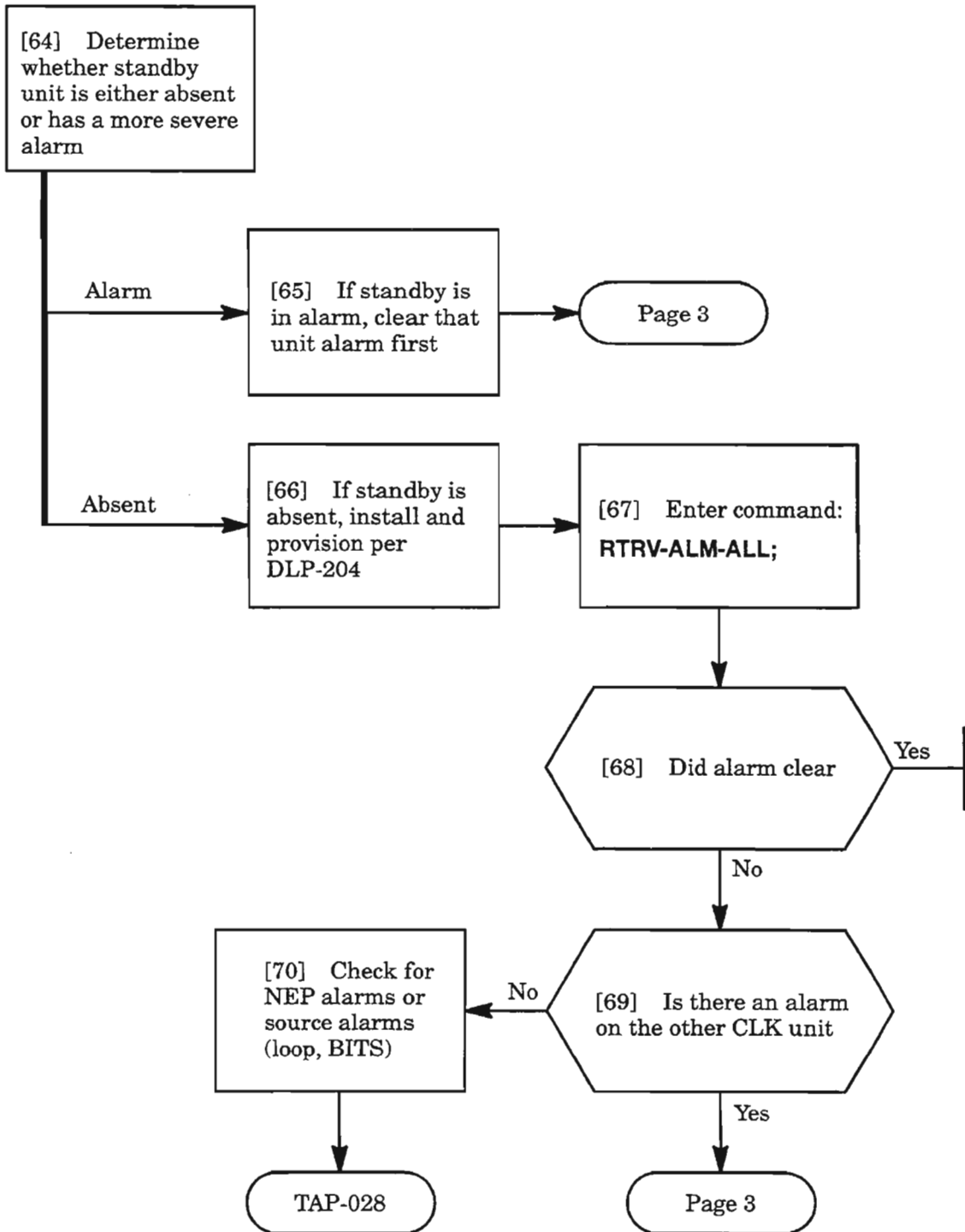
# SYNCCLK

- [57] Crossover clocks received on the specified unit are in error
- [58] Enter commands:  
**RTRV-COND-EQPT:[tid]:aid:[ctag]::;**  
**RTRV-EQPT:[tid]:aid:[ctag];**  
 where: aid = alarmed unit (CLKA or CLKB)
- [59] From response, determine if alarmed unit is active or standby



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 13 of 17	014

**SYNCCLK (cont)**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 14 of 17	014

# INHDBG, INHPMREPT, INHSWDX

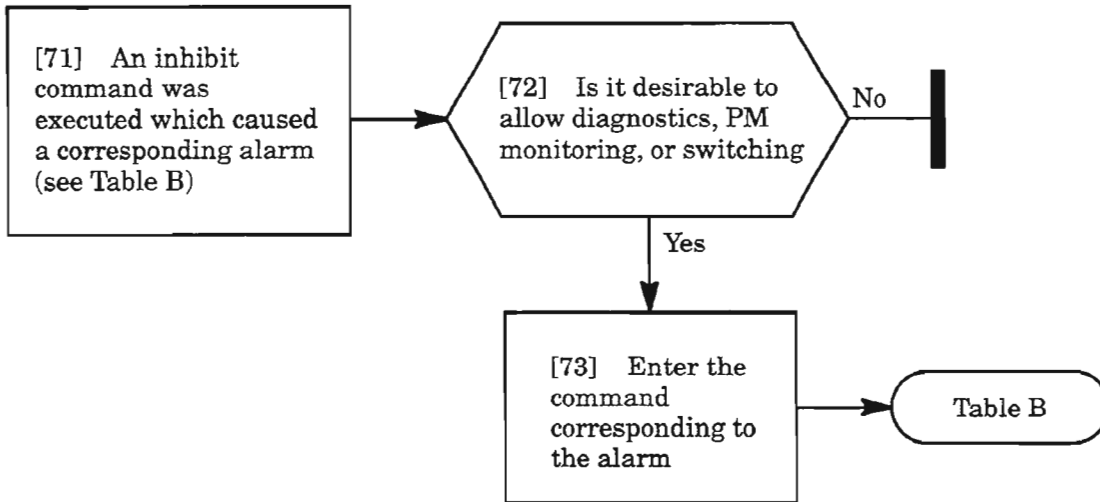
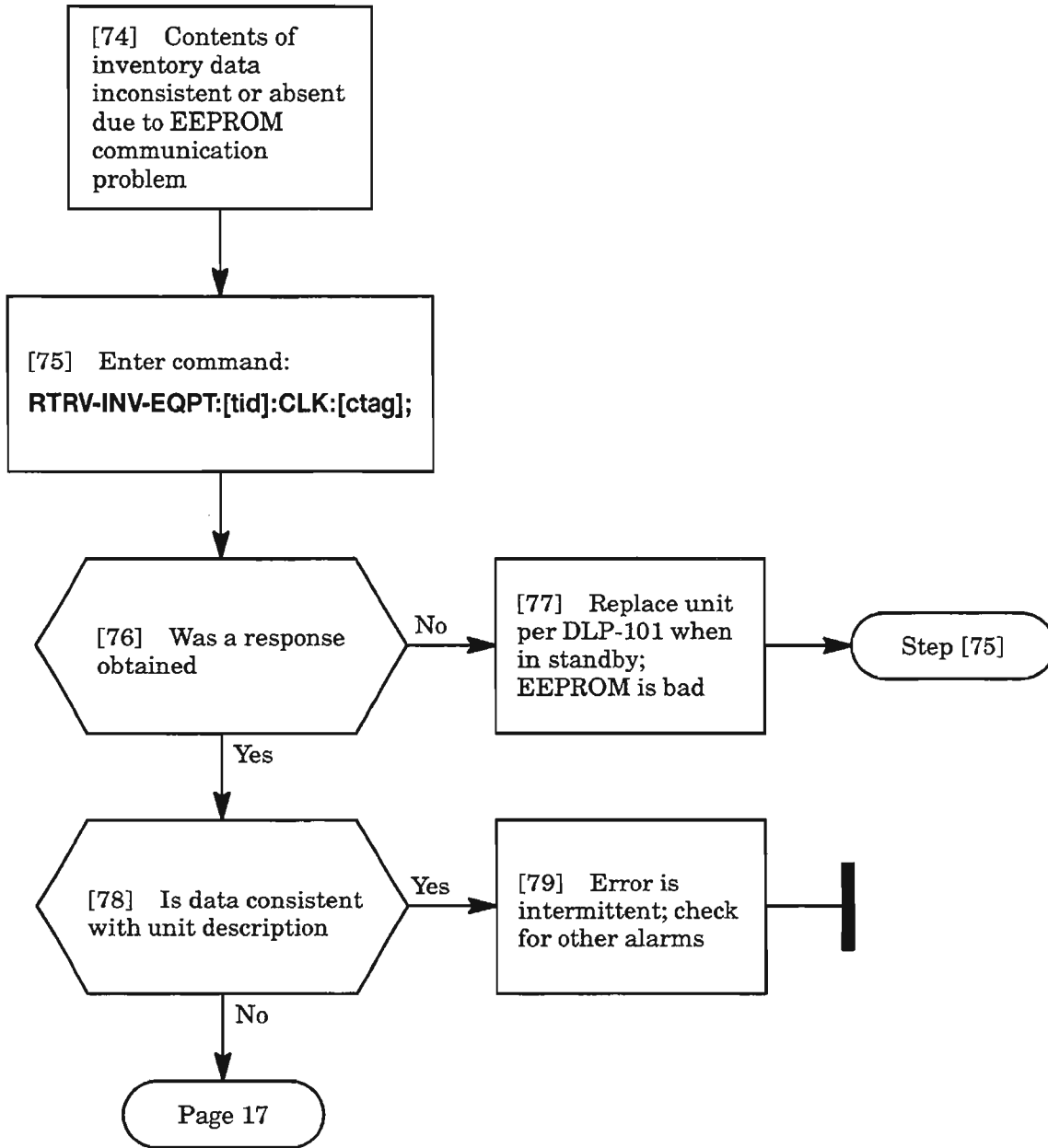


Table B.

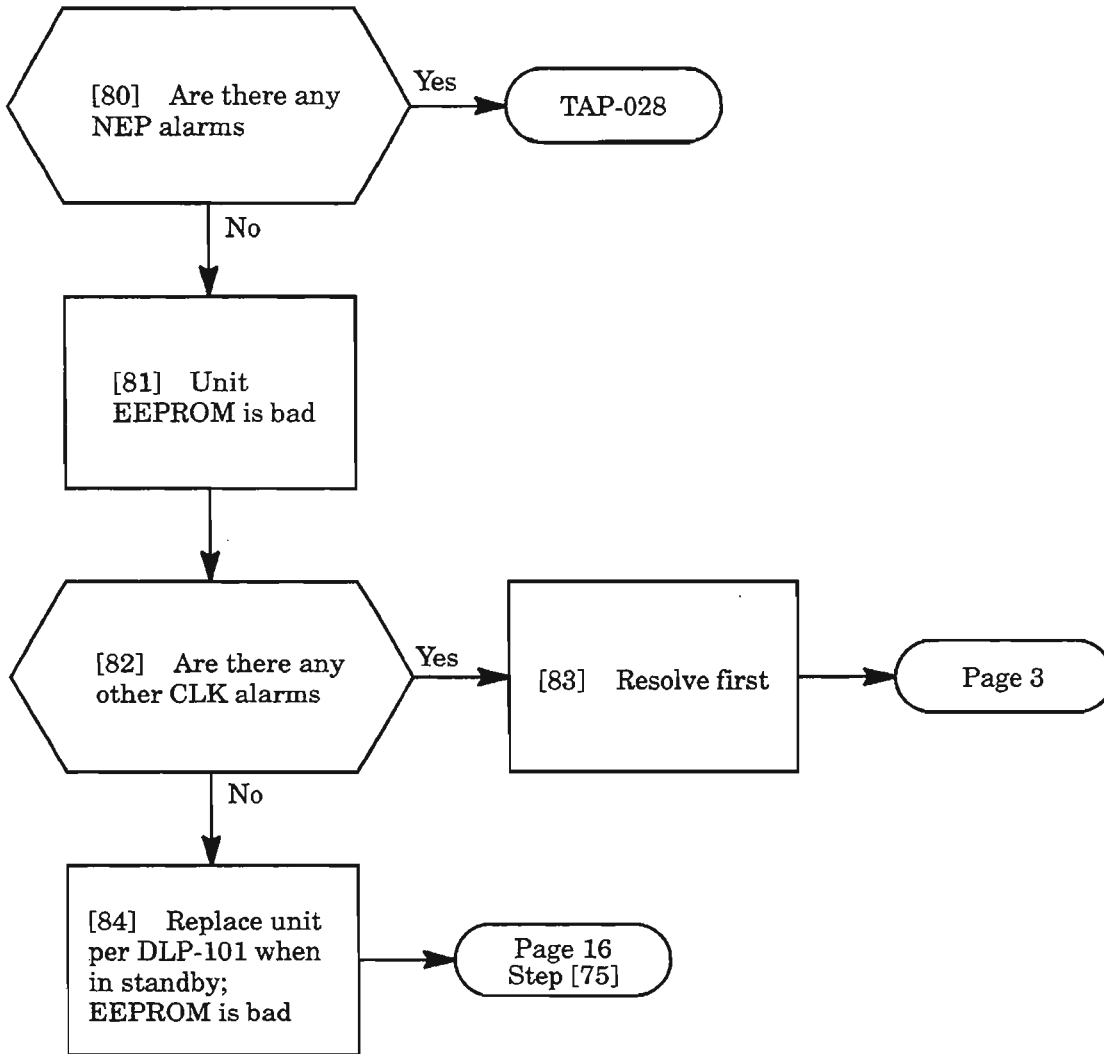
ALARM	COMMAND
INHDBG (inhibit processor diagnostics on the CLK)	ALW-DGN-EQPT:[tid]:aid:[ctag]; where: aid = CLKA or CLKB
INHPMREPT (inhibit performance monitoring reporting)	ALW-PMREPT-EQPT:[tid]:CLK:[ctag];
INHSWDX (inhibit duplex switching of unit to protection)	ALW-SWDX-EQPT:[tid]:CLK:[ctag];

# INVERR



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 16 of 17	014

**INVERR (cont)**

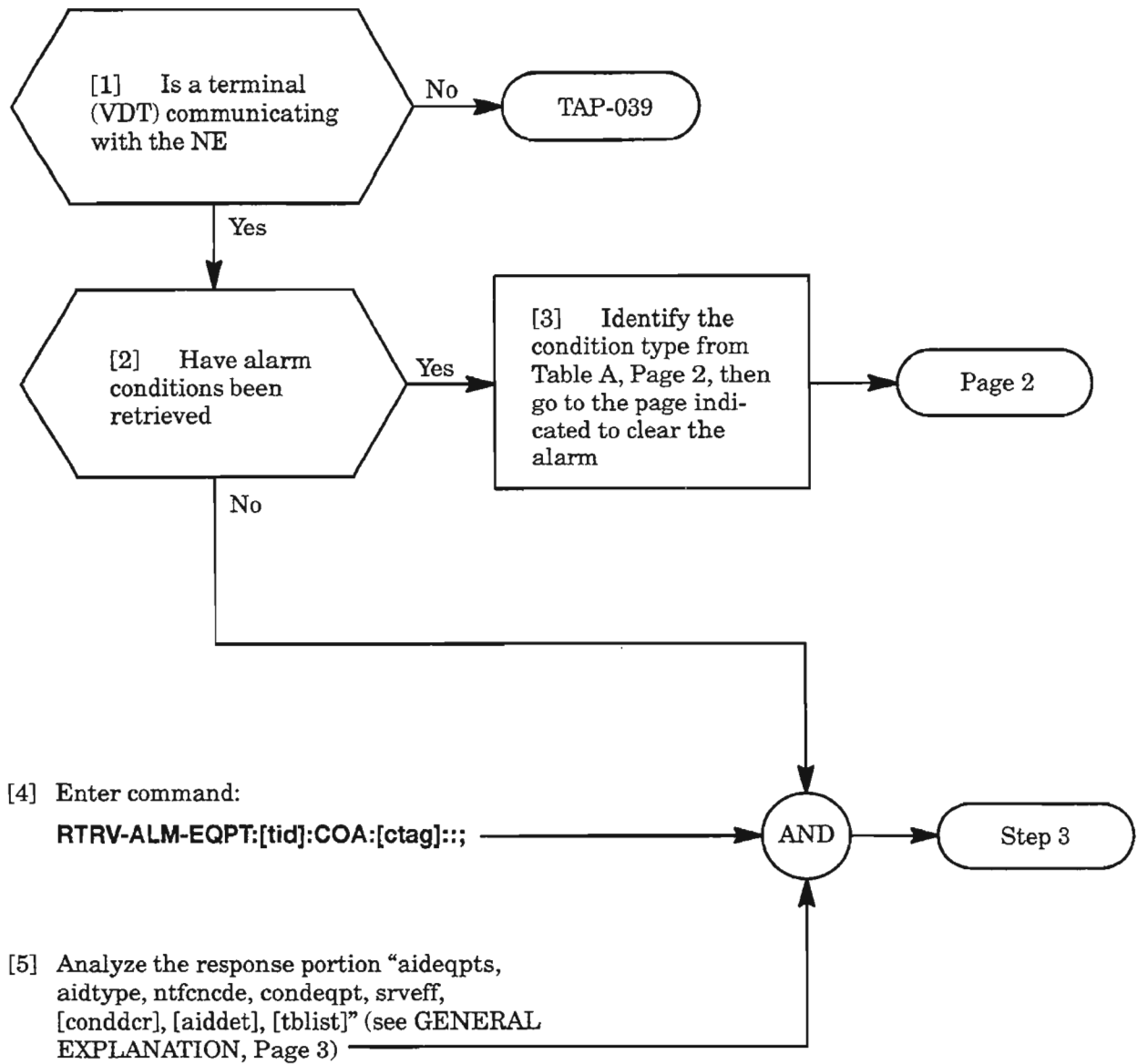


**CLEAR CLOCK UNIT ALARM**

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 17 of 17	014







**Table A.**

<b>CONDITION TYPE (CONDEQPT)</b>	<b>DESCRIPTION</b>	<b>PAGE</b>
BKUPMEMP	Primary backup memory (EEPROM) failure	4
CONTCOM	Internal communications control bus failure	4
CNTBUS	Standby equipment reflect test failure	4
IMPROPRMVL	The plug-in unit has been improperly removed	8
INHDBG	Diagnostics has been inhibited	9
INT	General failure	4
INVERR	Plug-in unit inventory (EEPROM) error	4
MEA	Plug-in unit mismatch of equipment and attributes	10
MEMCHK	Plug-in unit has a memory checksum error (data base)	12
MEMDIF	Working and primary memory data base mismatch	13
MEMDIFTRAN	Working and primary memory data base mismatch after successful conversion	14
MEMVER	Working and primary memory data base version mismatch	14
MTCE	Plug-in unit removed from service for maintenance	11

**GENERAL EXPLANATION**

**RESPONSE**

M SID year-month-day hr:min:sec  
ctag COMPLD  
/\*RTRV-ALM-EQPT:[tid]:COA:[ctag]::\*/  
"aid,aidtype:ntfcncde,condeqpt,srveff:[condcr],[aidet]:,[tblist]"

**WHERE**

**AID** COA

**AIDTYPE** EQPT

**NTFCNCDE** CR (Critical)  
MJ (Major)  
MN (Minor)

**CONDEQPT** Condition Type (see TABLE A, Page 2)

**SRVEFF** SA (Service-Affecting)  
NSA (Non-Service Affecting)

**[condcr]** Condition description

**[aidet]** Supplementary identification information  
A for A-side  
B for B-side  
AB for both sides

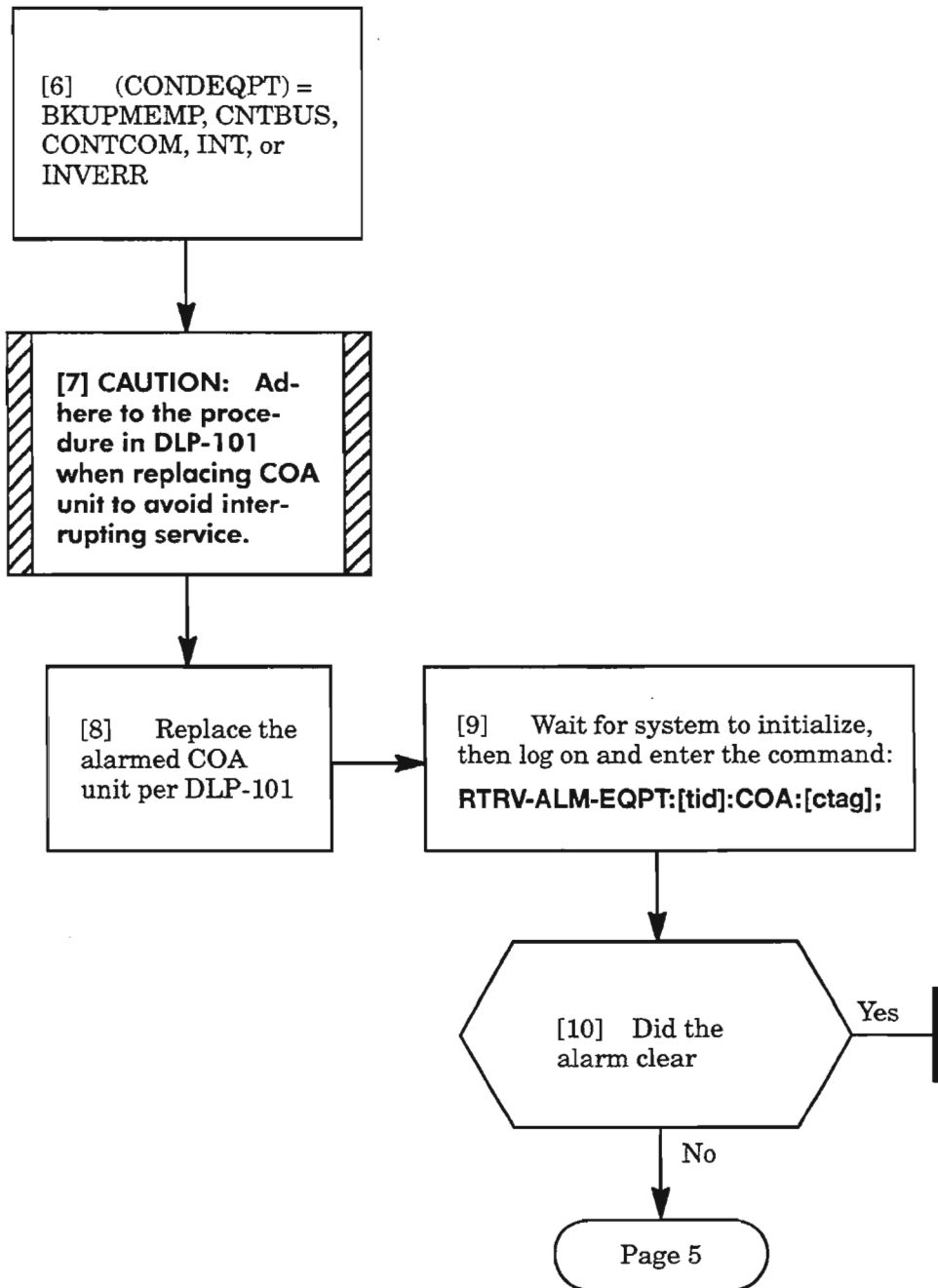
**[tblist]** The significance of the isolation information

ISLTD Isolated  
NIPSS Not isolated, all diagnostics passed  
NIMAN Not isolated, isolation must be performed manually

**CLEAR COA UNIT ALARM**

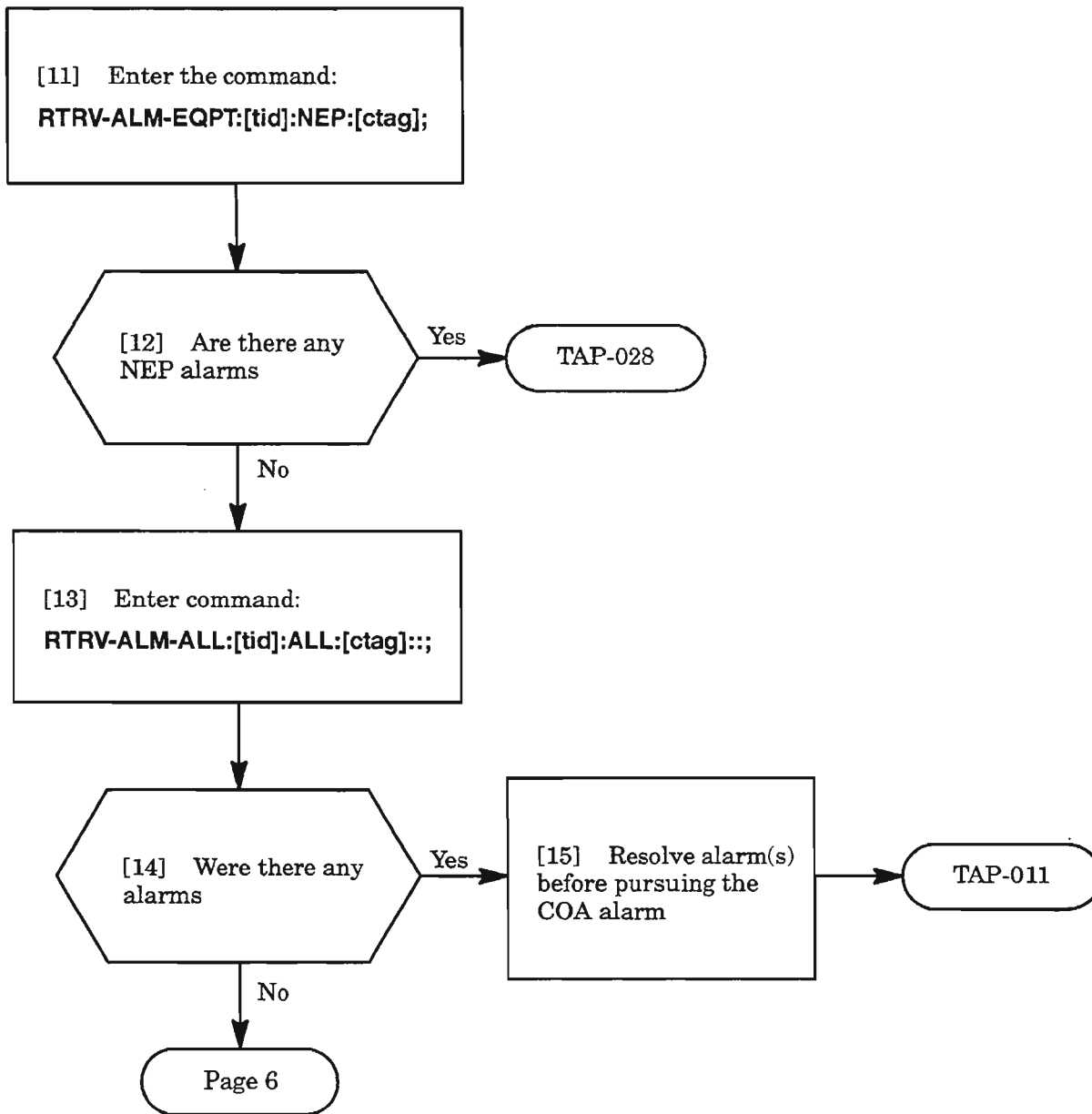
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 3 of 14	015

# BKUPMEMP, CNTBUS, CONTCOM INT, INVERR



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 14	015

**BKUPMEMP, CNTBUS, CONTCOM, INT, INVERR (cont)**



**BKUPMEMP, CNTBUS, CONTCOM, INT, INVERR (cont)**

**[16] CAUTION:** The following procedure may require replacement of the NEP, HIF, DMI or LIF plug-in units. If so, the replacement procedures in DLP-101 must be followed to avoid interrupting service.

[17] Suspect HIF units

[18] Enter the following command for each equipped HIF:  
**DGN-EQPT:[tid]:LGx-HIFy:[ctag]::6,5,IMED;**  
 where:    x = 1 or 2  
           y = A or B

[20] Replace HIF unit(s) that failed per DLP-101

[19] Did diagnostics fail for any unit

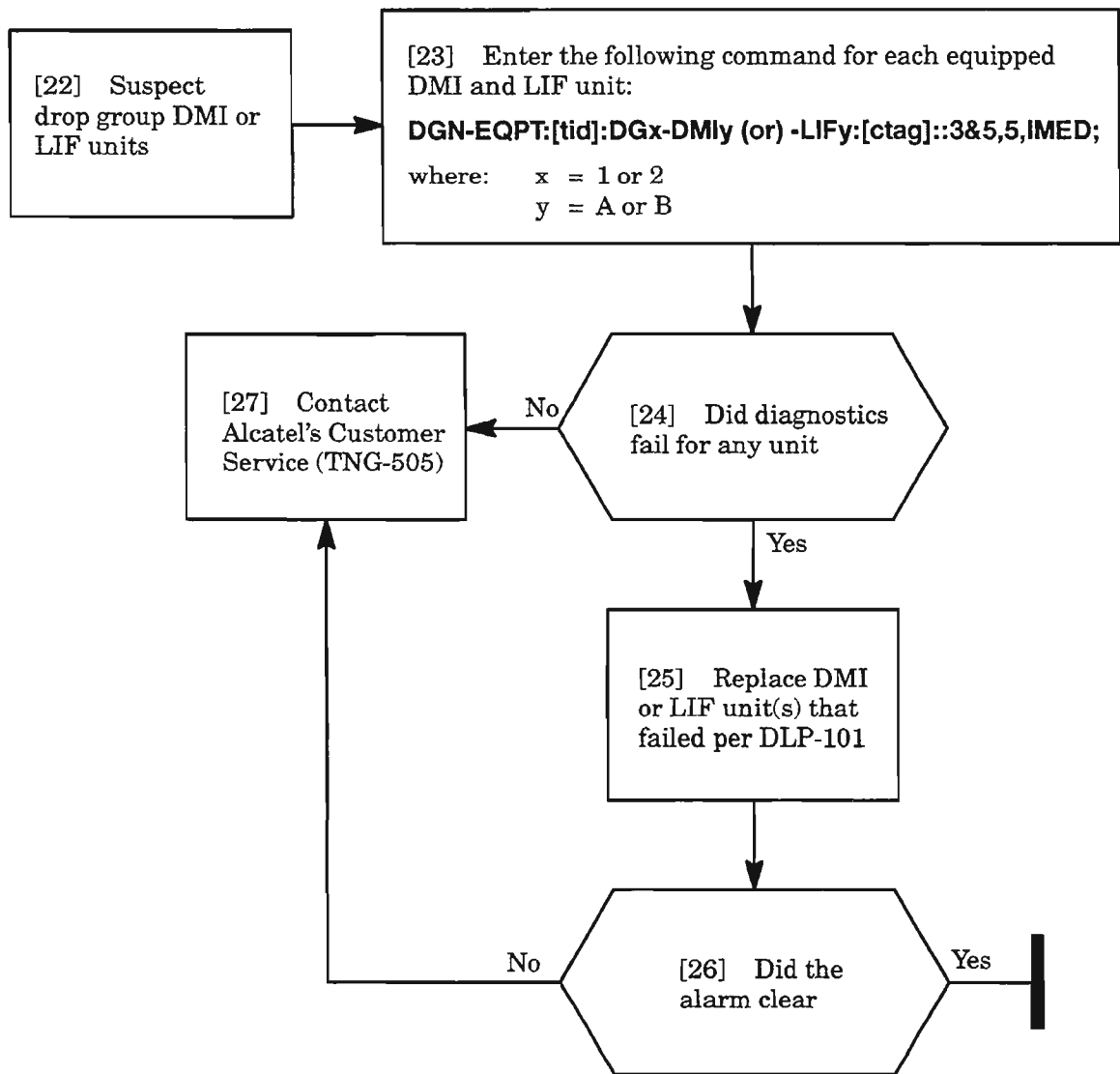
Page 7

[21] Did the alarm clear

Page 7

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 14	015

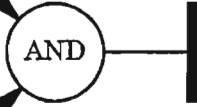
**BKUPMEMP, CNTBUS, CONTCOM, INT, INVERR (cont)**



# IMPROPRMVL

[28] The COA unit has been physically removed

[29] Reinstall or replace COA unit per DLP-101

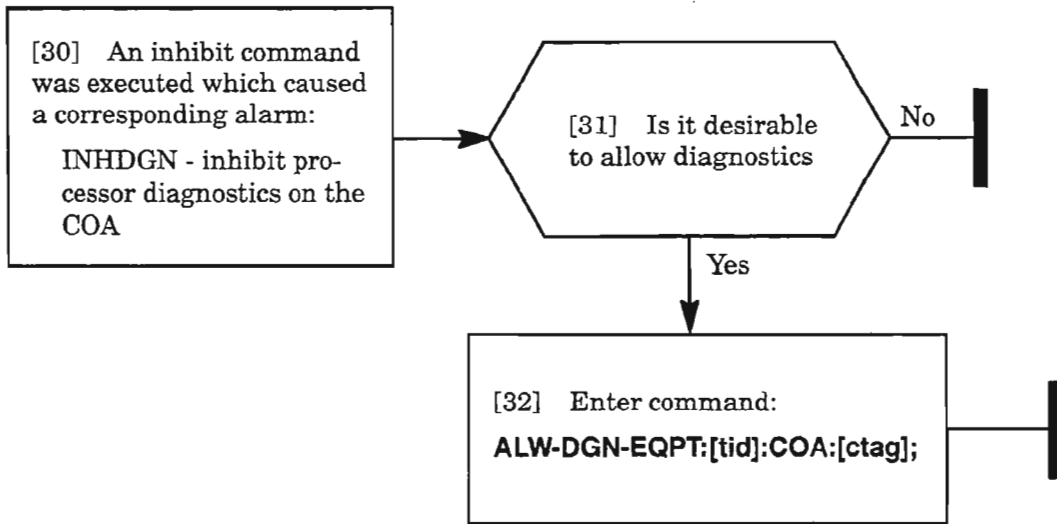


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 8 of 14	015

**CLEAR COA UNIT ALARM**



# INH DGN



CLEAR COA UNIT ALARM

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 9 of 14	015

**MEA**

[33] The data base entry for the alarmed unit does not match equipment type parameter on unit EEPROM

[34] Enter the following command:  
**RTRV-INV-EQPT:[tid]:aid:[ctag];;**  
 where: aid = COA

[35] Record Unit Name of alarmed unit

[36] Enter the following command:  
**RTRV-EQPT:[tid]:aid:[ctag];**  
 where: aid = COA

AND

[37] From response, compare Equipment Type parameter to Unit Name

[38] Is data base entry incorrect or is wrong unit installed

[39] Edit the data base entry for the unit correcting the *eqptype* parameter (DLP-205)

Wrong unit

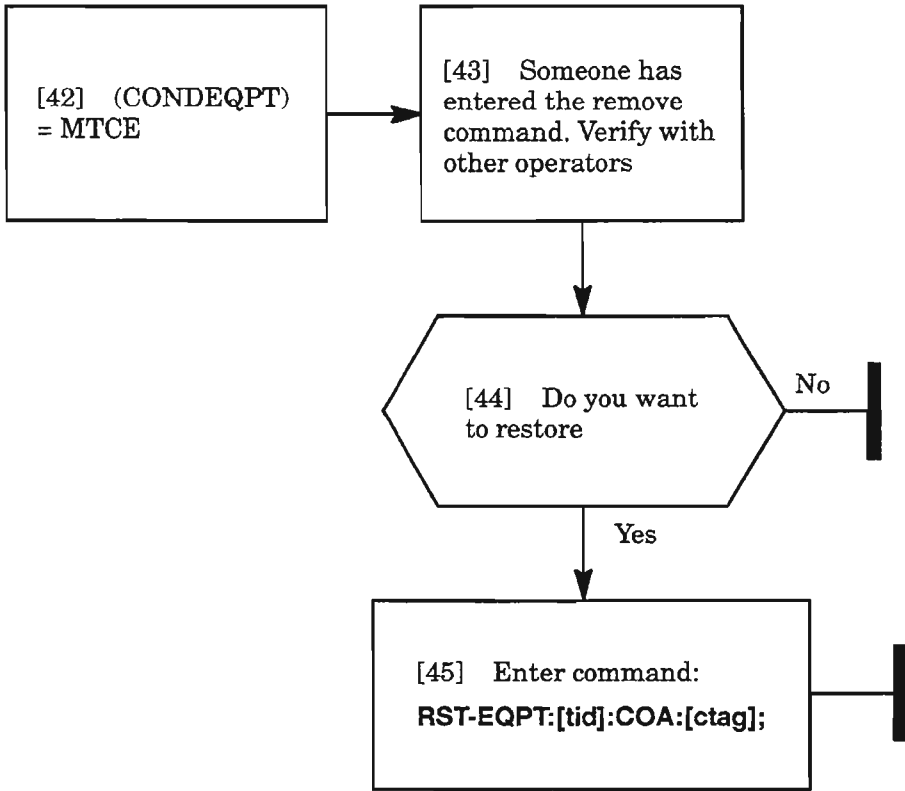
**[40] CAUTION: Adhere to the procedure in DLP-101 when replacing the COA to avoid interrupting service.**

[41] Replace the COA unit per DLP-101

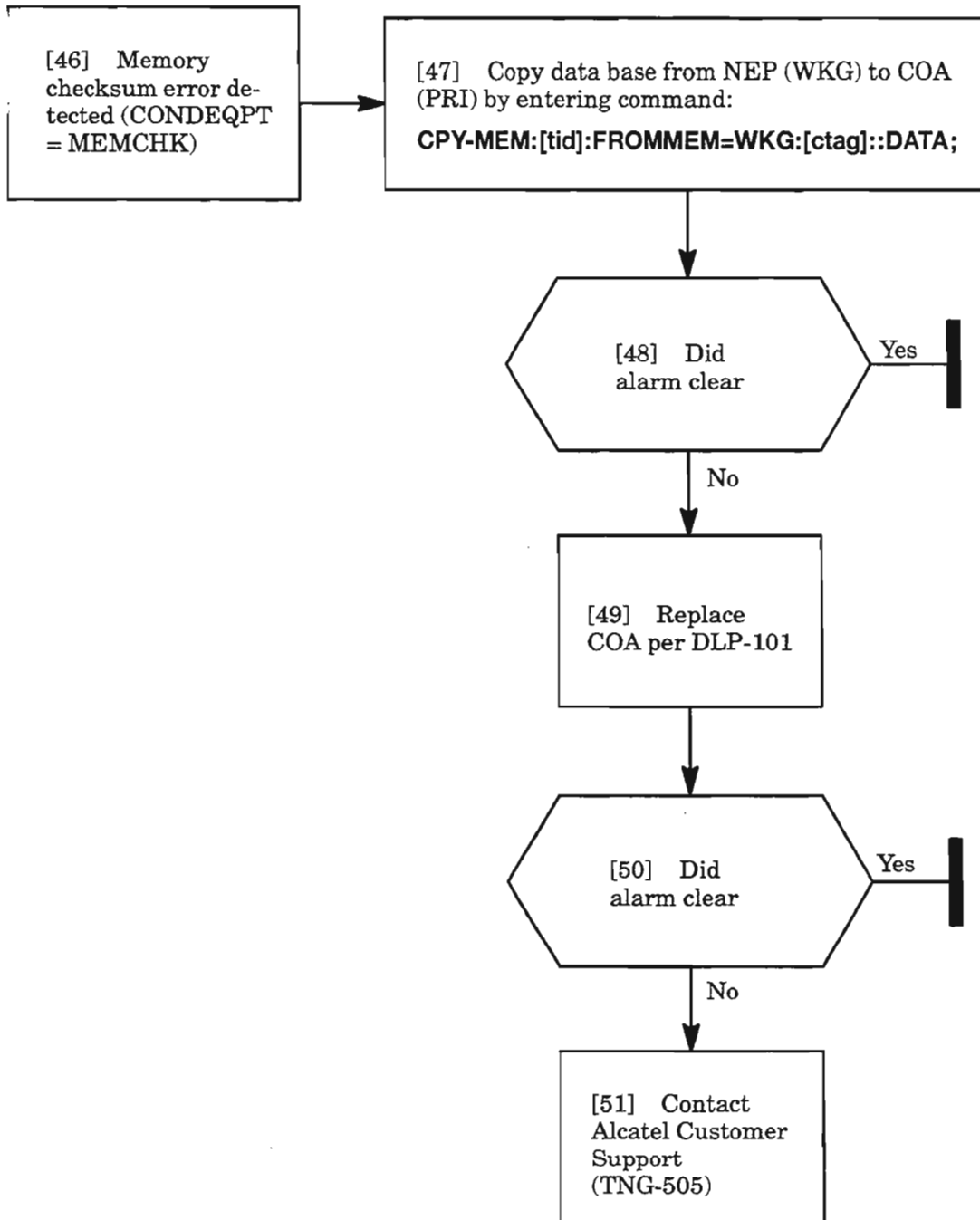
Incorrect entry

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 14	015

# MTCE



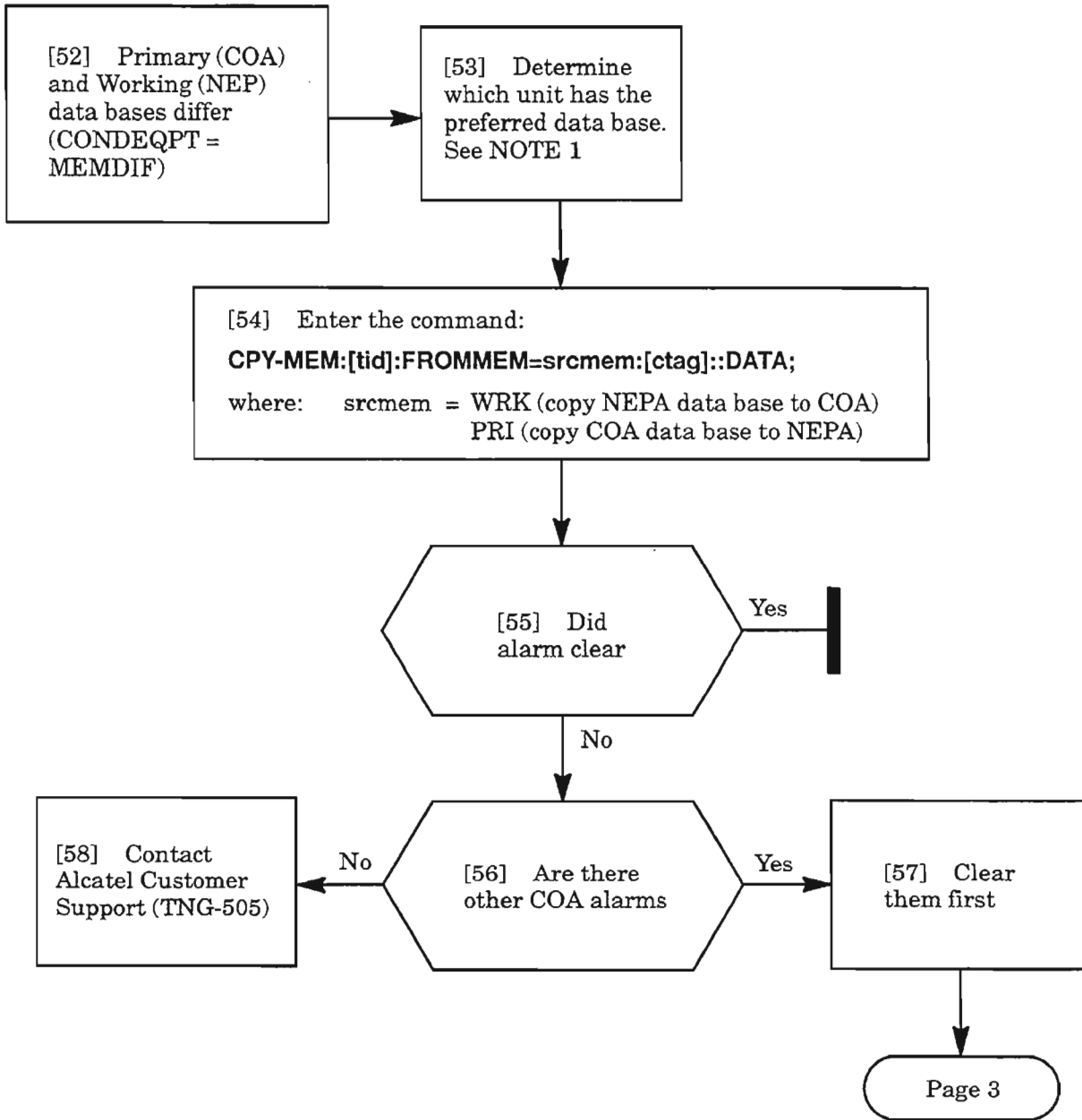
# MEMCHK



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 14	015

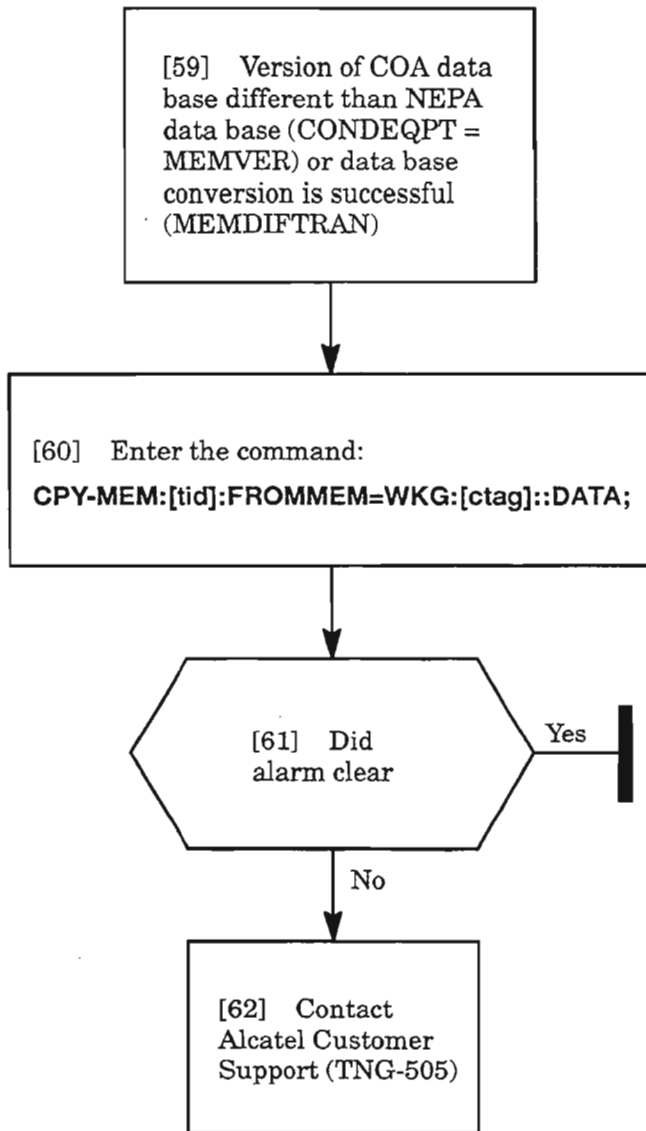
**CLEAR COA UNIT ALARM**

# MEMDIF



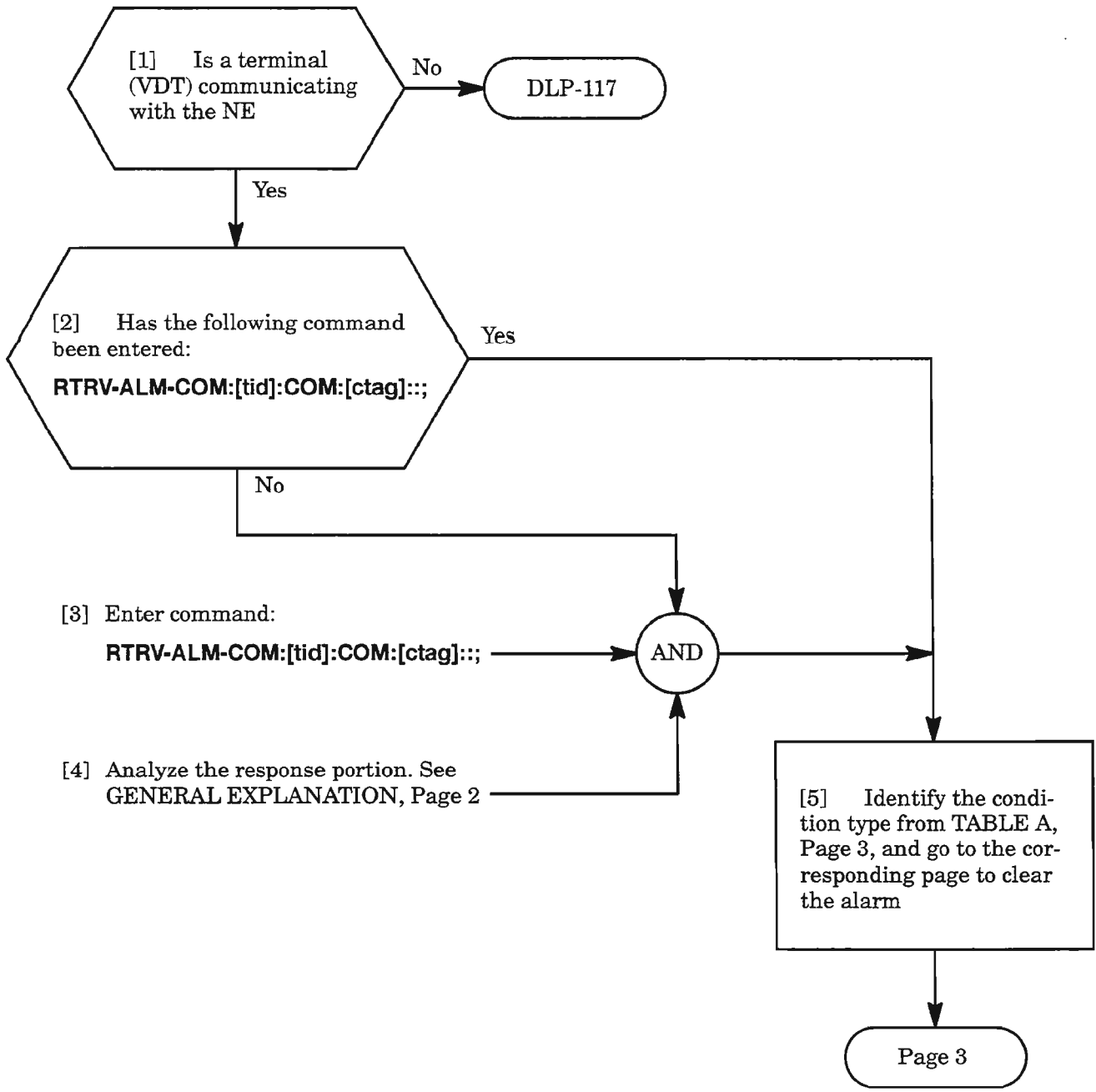
**NOTE:** 1. If COA has just been replaced and you want to maintain current configuration of NE, copy data base from NEP (WKG to PRI).

# MEMVER, MEMDIFTRAN



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 14 of 14	015

CLEAR COA UNIT ALARM



**GENERAL EXPLANATION**

**RESPONSE**

M SID year-month-day hr:min:sec  
ctag COMPLD  
/\*RTRV-ALM-COM:[tid]:com:[ctag]::;\*/  
"aid,aidtype:ntfncde,condcom,srveff,[condocr],[aiddet]:,[tblist]"

**WHERE**

**aid** COM

**aidtype** COM

**ntfncde** CR (Critical)  
MJ (Major)  
MN (Minor)

**condcom** Condition Type (see TABLE A, Page 3)

**srveff** SA (Service-Affecting)  
NSA (Non-Service Affecting)

**[condocr]** Condition description

**[aiddet]** Supplementary identification information

A for A-side  
B for B-side  
AB for both sides

**[tblist]** The significance of the isolation information

ISLTD Isolated  
NIPSS Not isolated, all diagnostics passed  
NIMAN Not isolated, isolation must be performed manually

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 2 of 13	016

**CLEAR COMMON/NE ALARM**



**Table A.**

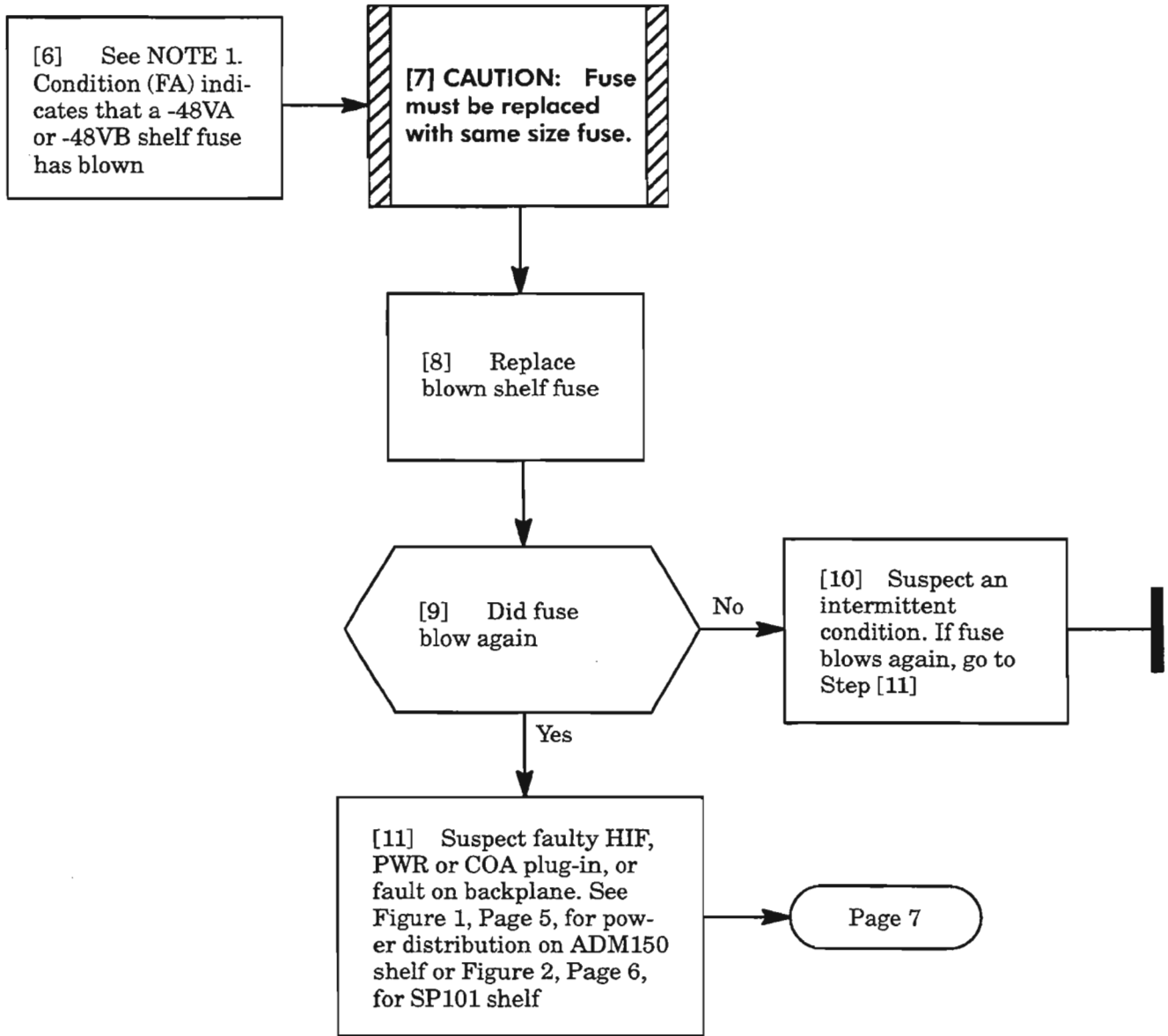
<b>CONDITION TYPE</b>	<b>DESCRIPTION</b>	<b>PAGE/SECTION</b>
CNFRNERR	A Ring line group configuration error has been detected	12
FA	-48V_A or -48_B Shelf fuse is blown	4
FANALM	A rack/bay fan assembly alarm has been detected	TAP-024
LOGBUFR90-SYSTEM	System log buffer is 90% full	11
LOGBUFROVFL-SYSTEM	System log buffer is in overflow	11
LOGBUFR90-SECURITY	Security log buffer is 90% full	11
LOGBUFROVFL-SECURITY	Security log buffer is in overflow	11
PWRF-48VA (see NOTE)	Side A -48 Vdc input power to shelf is not present	13
PWRF-48VB (see NOTE)	Side B -48 Vdc input power to shelf is not present	13
SECUIINTRU	A security intrusion alarm has been detected	8

**NOTE:** *To be reported, the PWRF-48VA/B alarms require the COA40X or later plug-in unit.*

**CLEAR COMMON/NE ALARM**

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 3 of 13	016

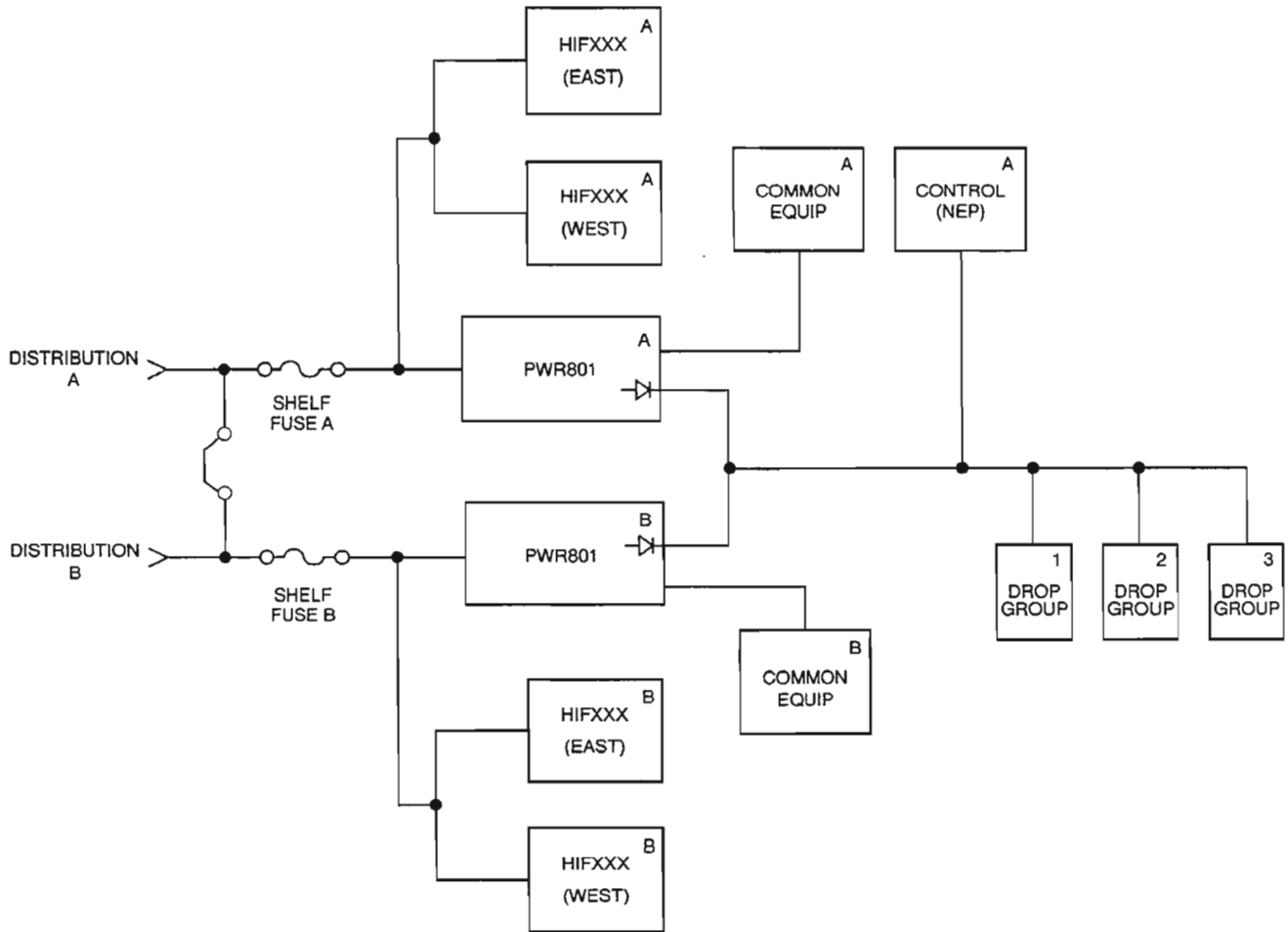
## FA (Fuse Alarm)



**NOTE: 1.** The HIF-A units receive power directly from -48VA fuse, and alarm (ALM lamp lights and possibly INT and CNTEQPT alarm conditions) if the fuse blows. Likewise, the HIF-B units receive power from -48VB fuse, and alarm if the fuse blows.

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 4 of 13	016

**CLEAR COMMON/NE ALARM**

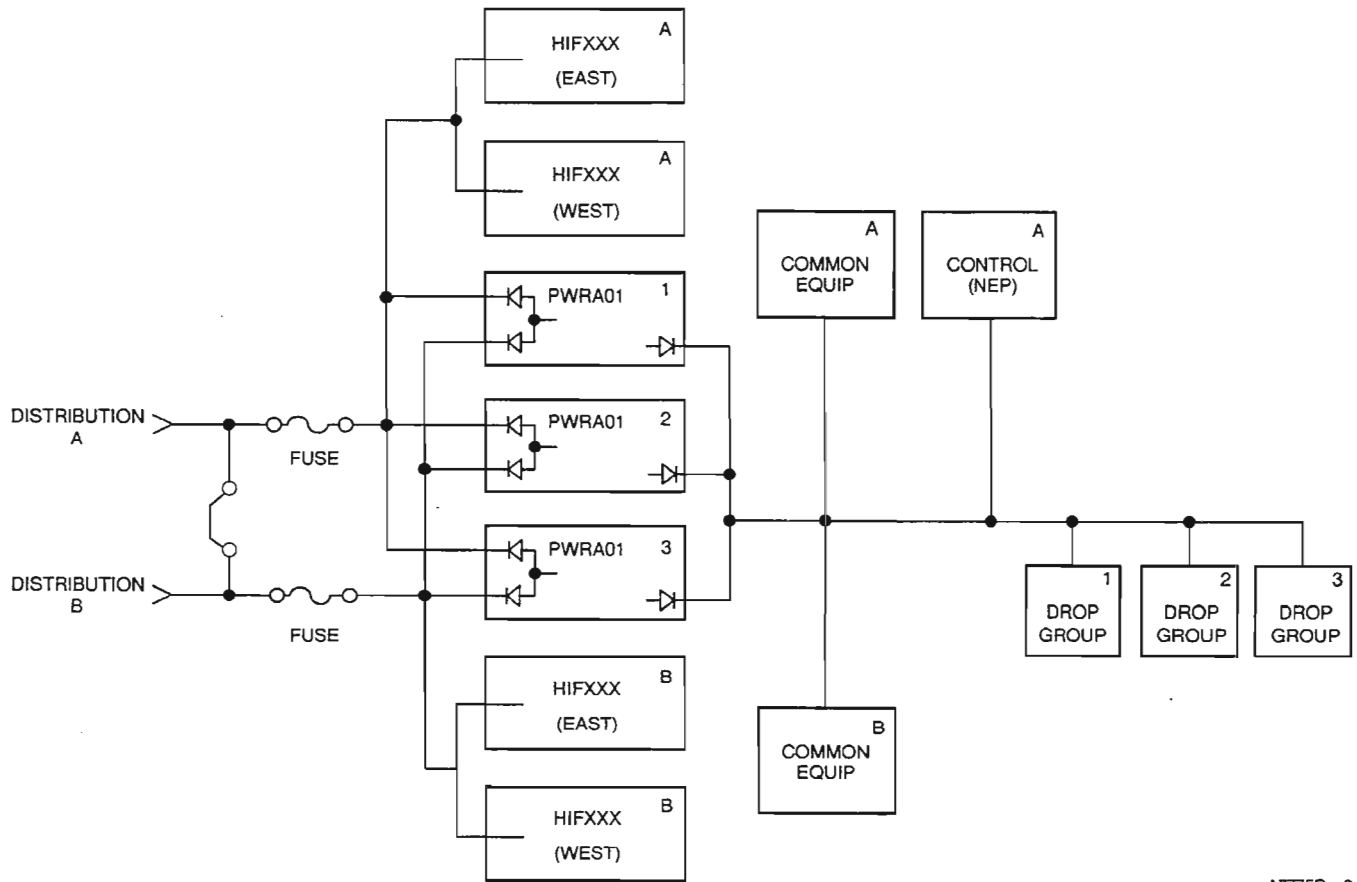


A7758Rev3

Figure 1. ADM150 Power Distribution Block Diagram

CLEAR COMMON/NE ALARM

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 5 of 13	016



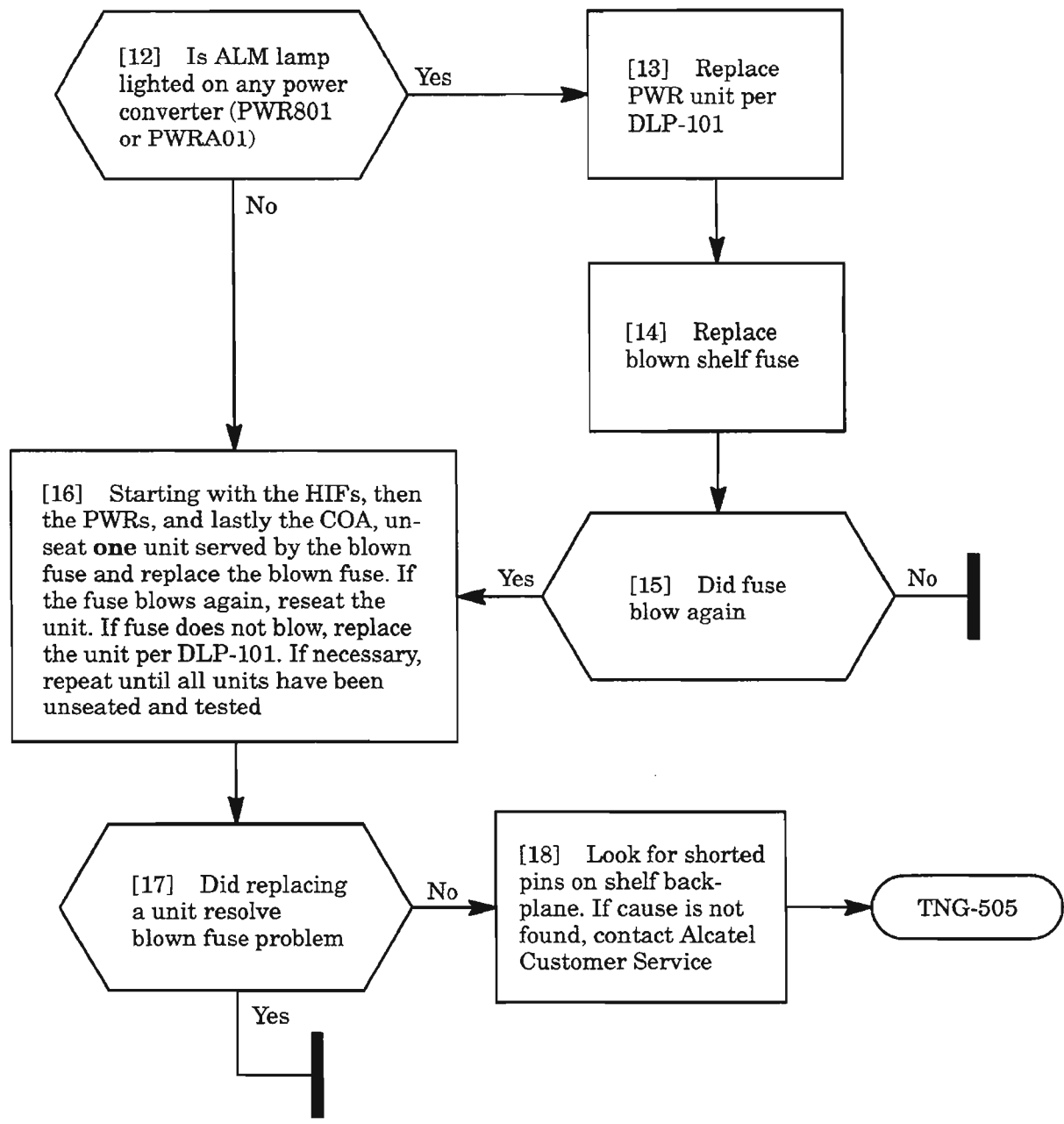
A775Rev2

Figure 2. SP101 Shelf Power Distribution Block Diagram

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 6 of 13	016

CLEAR COMMON/NE ALARM

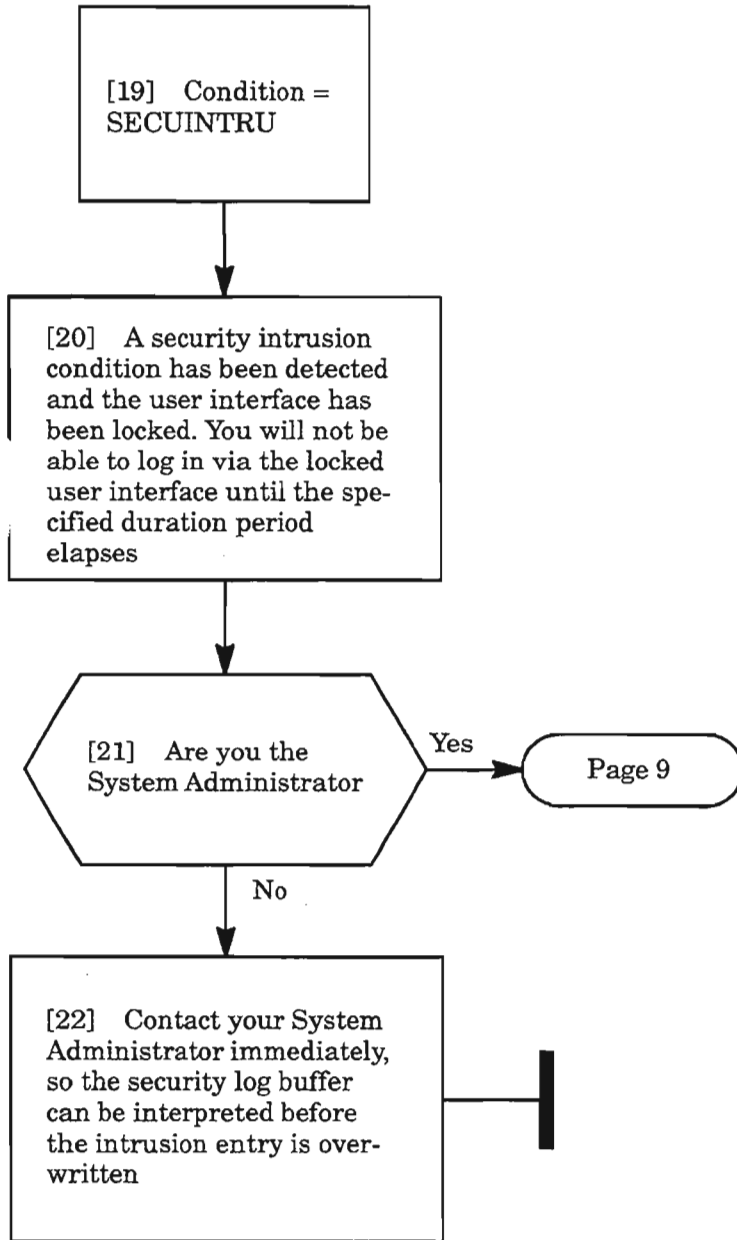
**FA (Fuse Alarm) (cont)**



**CLEAR COMMON/NE ALARM**

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 7 of 13	016

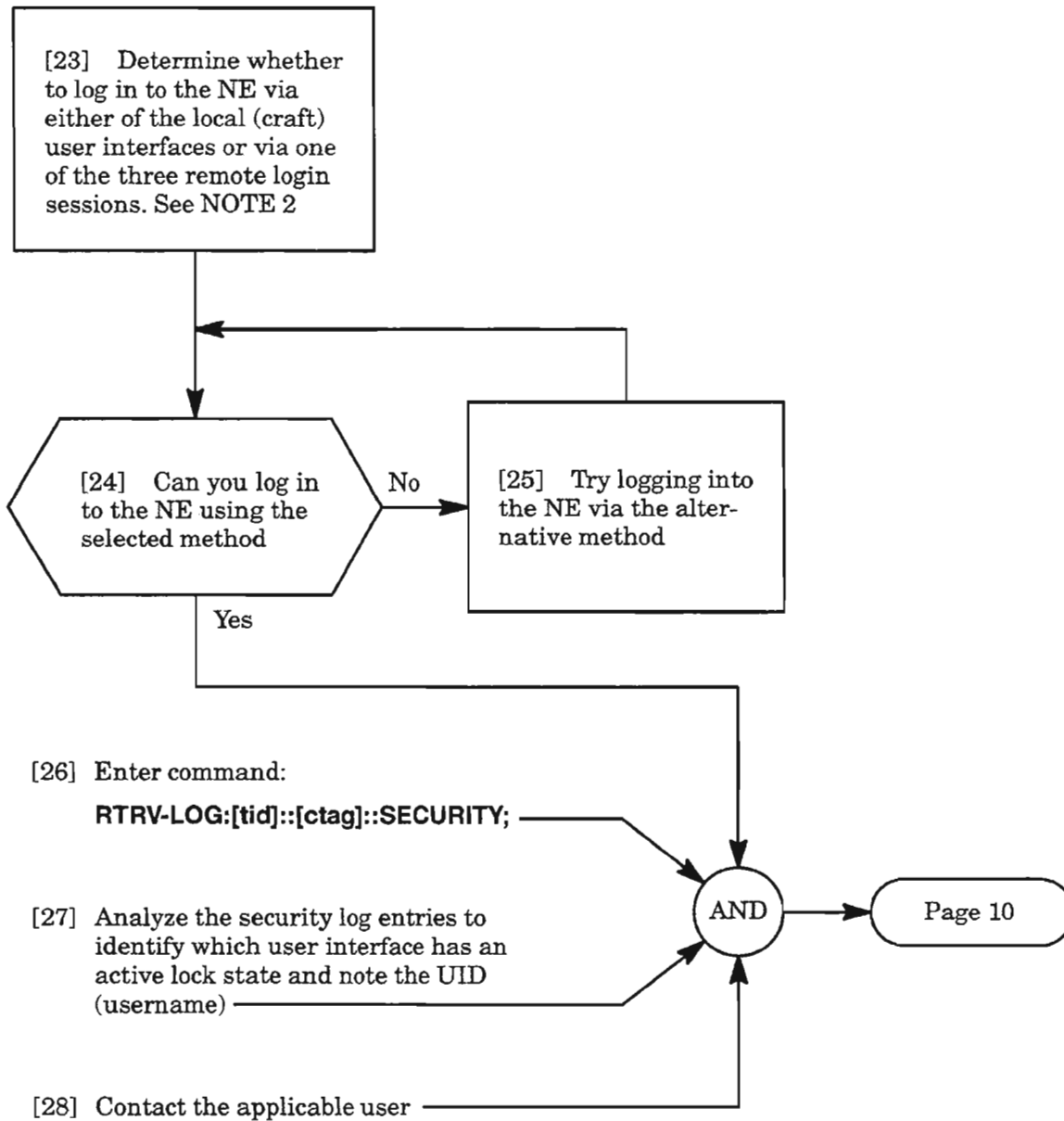
# SECUINTRU



ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 8 of 13	016

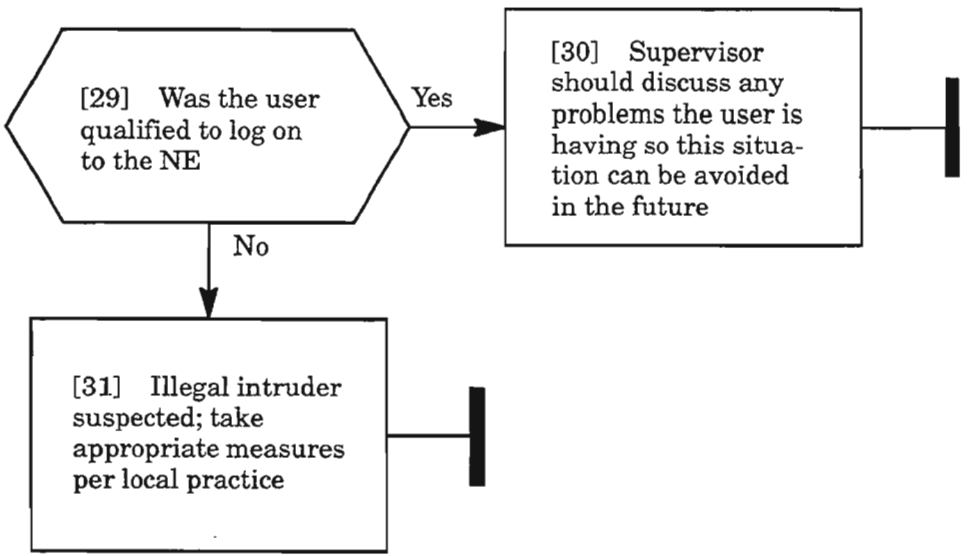
CLEAR COMMON/NE ALARM

**SECUNTRU (cont)**



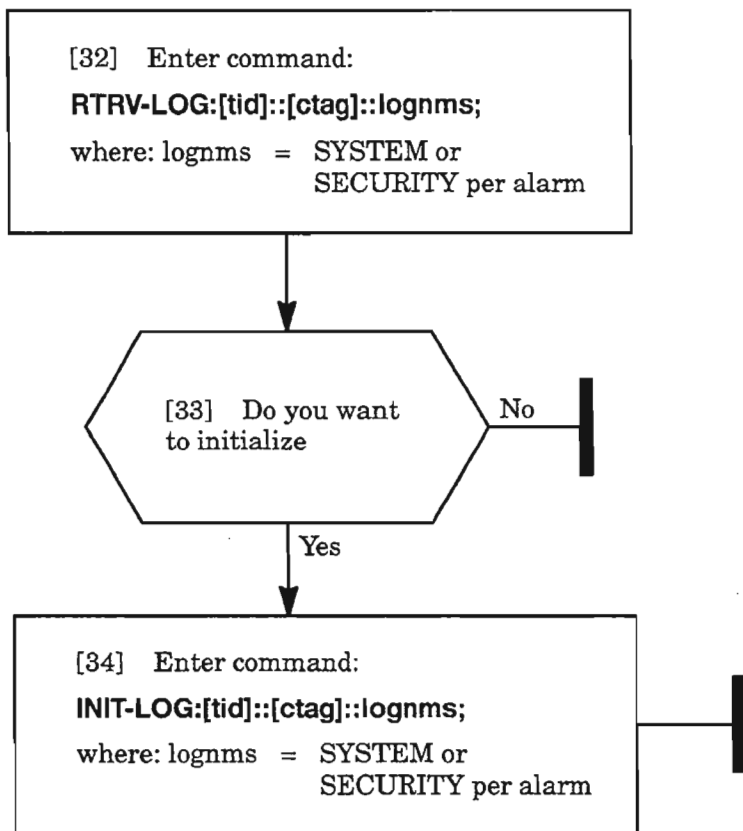
**NOTE: 2.** *If the intrusion occurs on either of the local user interfaces, both user interfaces lock. If the intrusion occurs on any of the remote login sessions, all three remote login sessions lock.*

**SECUNTRU (cont)**

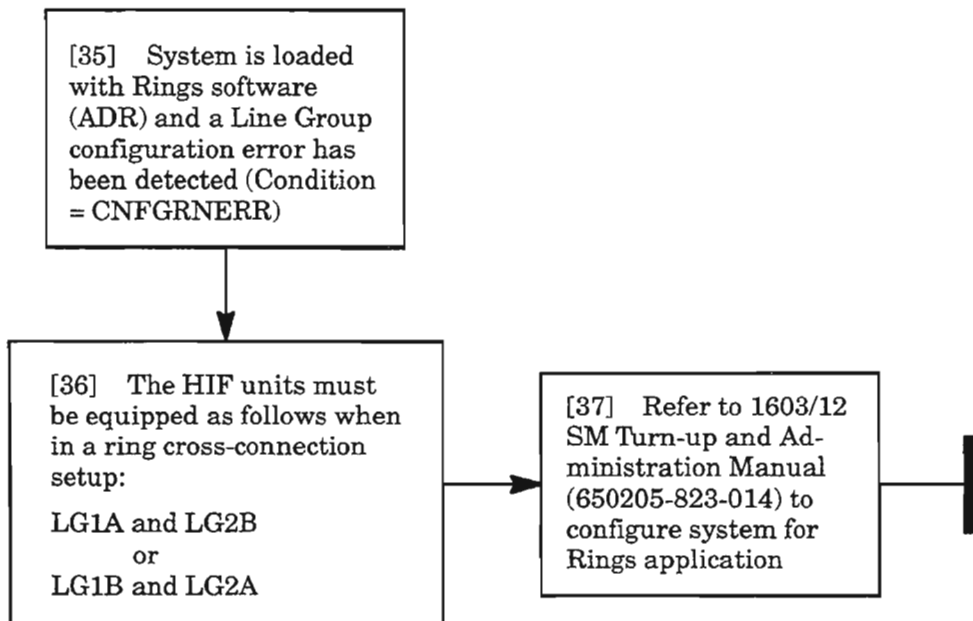




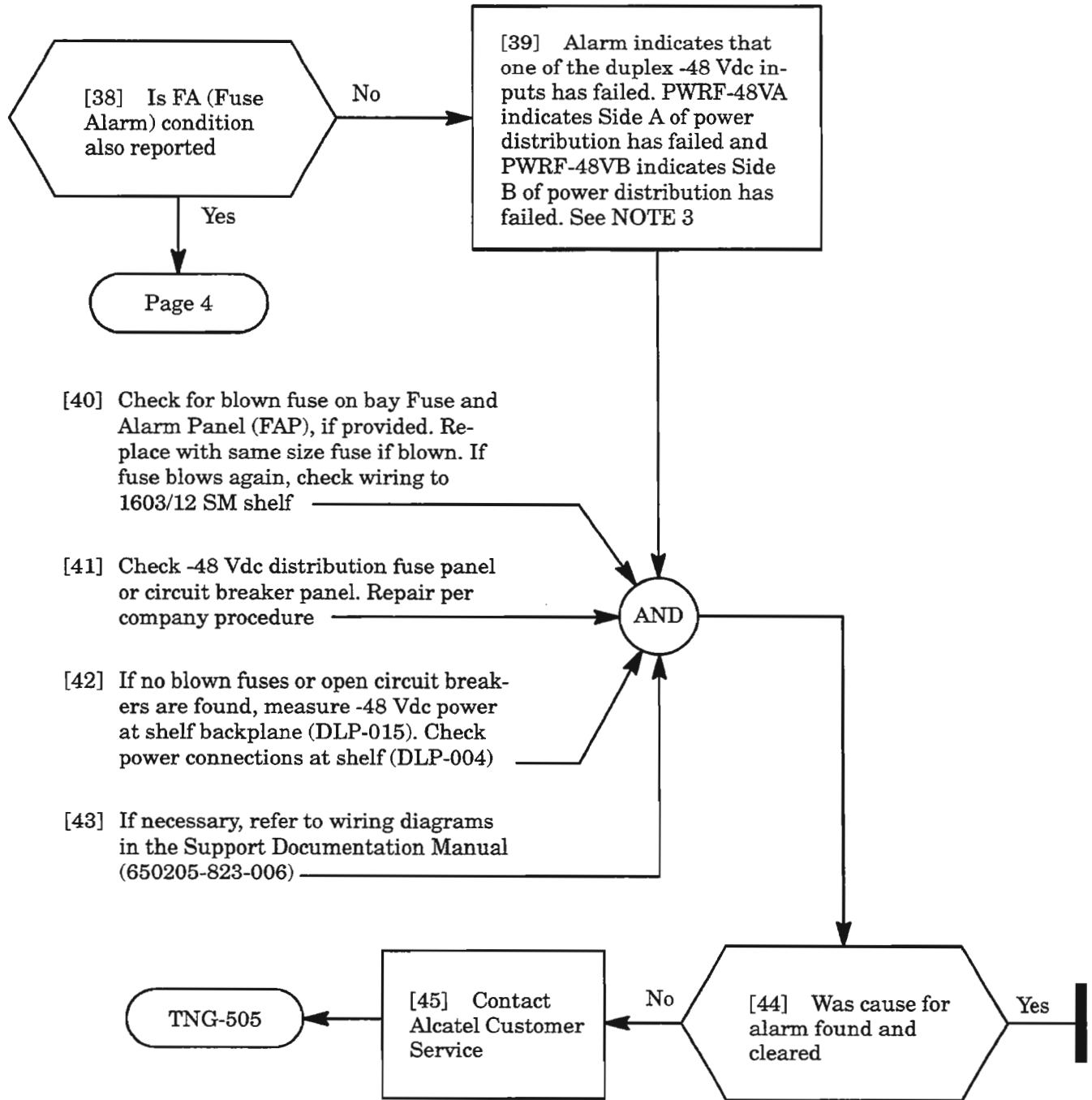
**LOGBUFR90-SYSTEM, LOGBUFROVFL-SYSTEM,  
LOGBUFR90SECURITY, or LOGBUFROVFL-SECURITY**



# CNFGRNERR



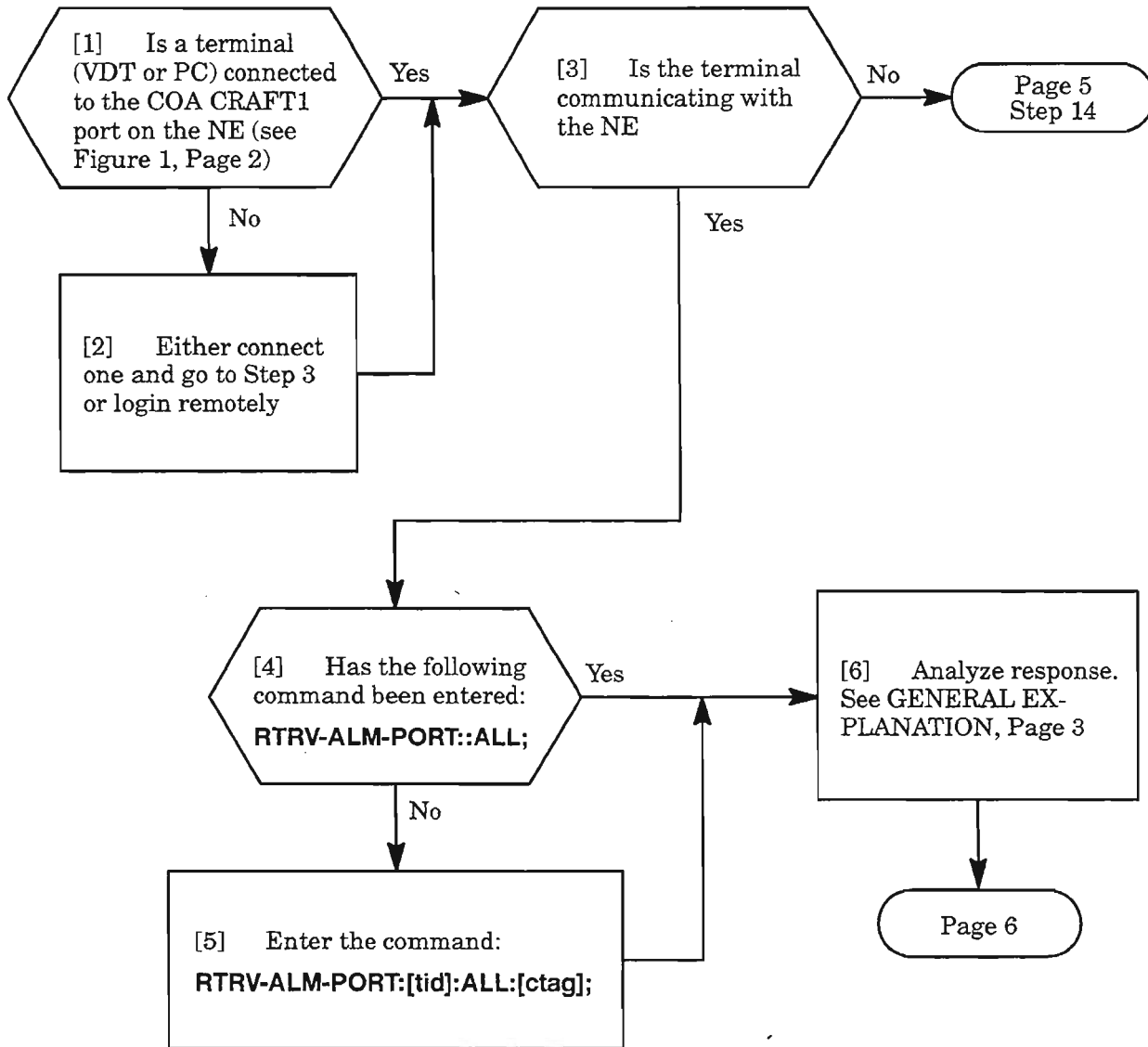
**PWRF-48VA or PWRF-48VB**



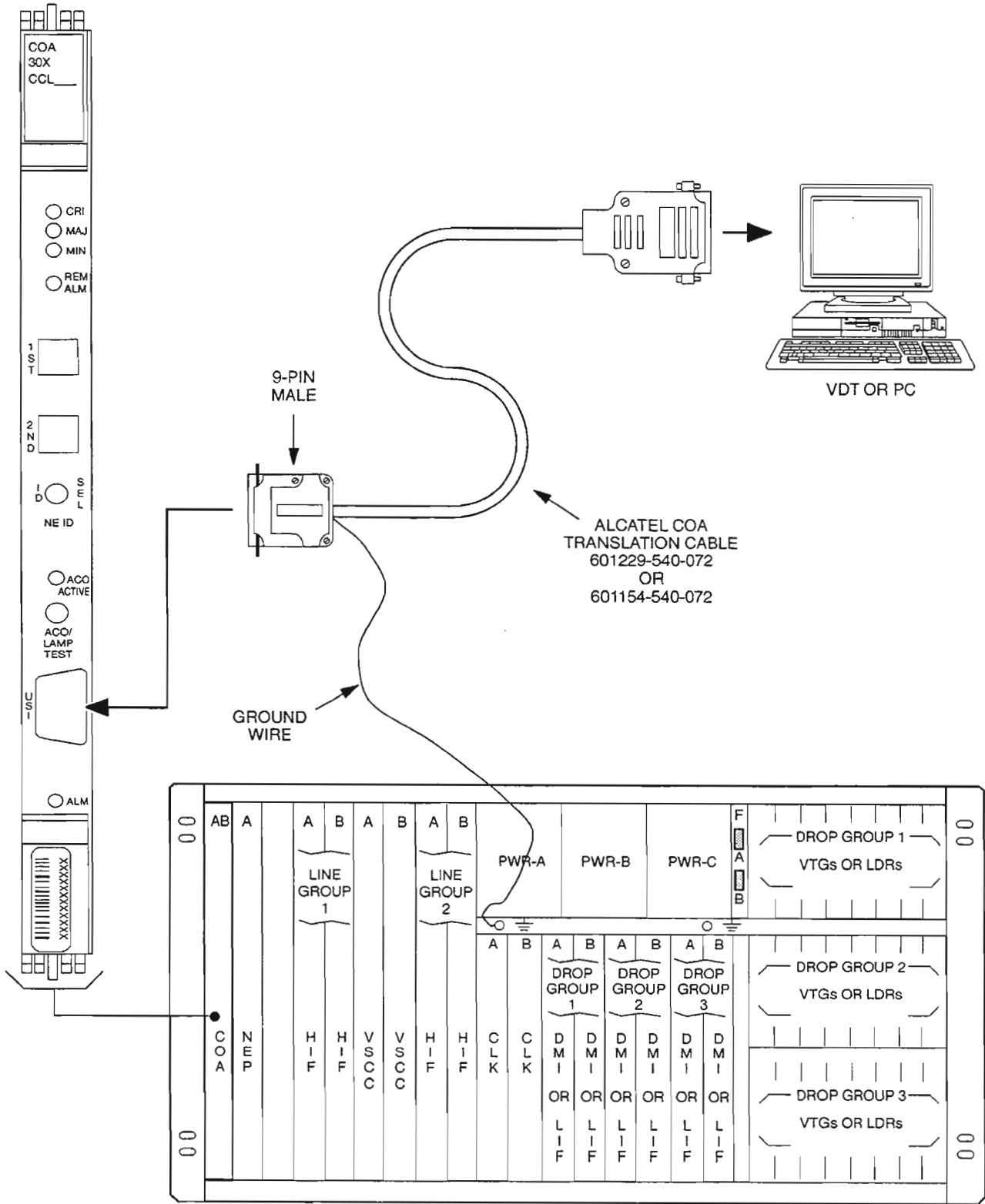
**NOTE: 3.** The HIF-A units receive power directly from -48VA fuse, and alarm (ALM lamp lights and possibly INT and CNTEQPT alarm conditions) if -48V\_A fails. Likewise, the HIF-B units receive power from -48VB fuse, and alarm if -48V\_B fails.

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 13 of 13	016





**NOTE:** 1. Alcatel recommends that this procedure be performed via the CRAFT1 port, regardless of whether the alarm relates to CRAFT1 port, CRAFT2 port, SE2A, or X25PORT.



A7896

Figure 1. Connecting CRAFT Terminal (VDT or PC) to COA30X Plug-in

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 2 of 12	017

CLEAR CRAFTX ALARM

GENERAL EXPLANATION

RESPONSE

M SID year-month-day hr:min:sec  
ctag COMPLD  
/\*RTRV-ALM-PORT:[tid]:craftx:[ctag]::;\*/  
"aid,aidtype:ntfncde,condport,srveff:[condocr],[aiddet]:,[tblist]"

WHERE

**aid** CRAFT1 (craft interface port #1)  
CRAFT2 (craft interface port #2)  
SE2A (serial E2A interface port)  
X25PORT (X.25 interface port)

**aidtype** PORT

**ntfncde** CR (Critical)  
MJ (Major)  
MN (Minor)

**condport** Condition type of the port interface (always "CD")

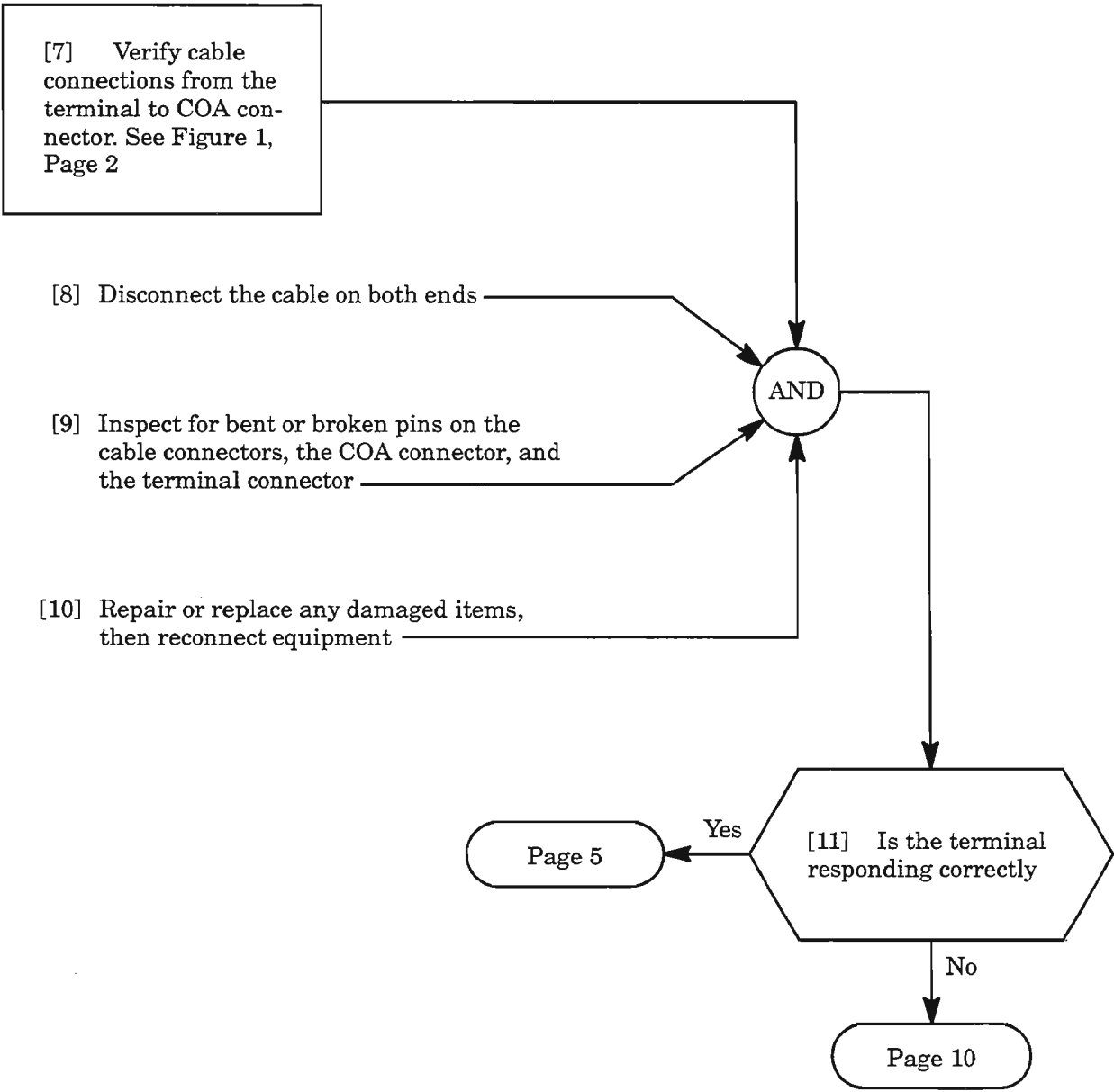
**srveff** SA (Service-Affecting)  
NSA (Non-Service-Affecting)

**[condocr]** Condition description

**[aiddet]** Supplementary identification information  
  
A for A-side  
B for B-side  
AB for both sides

**[tblist]** The significance of the isolation information  
  
ISLTD Isolated  
NIPSS Not isolated, all diagnostics passed  
NIMAN Not isolated, isolation must be performed manually

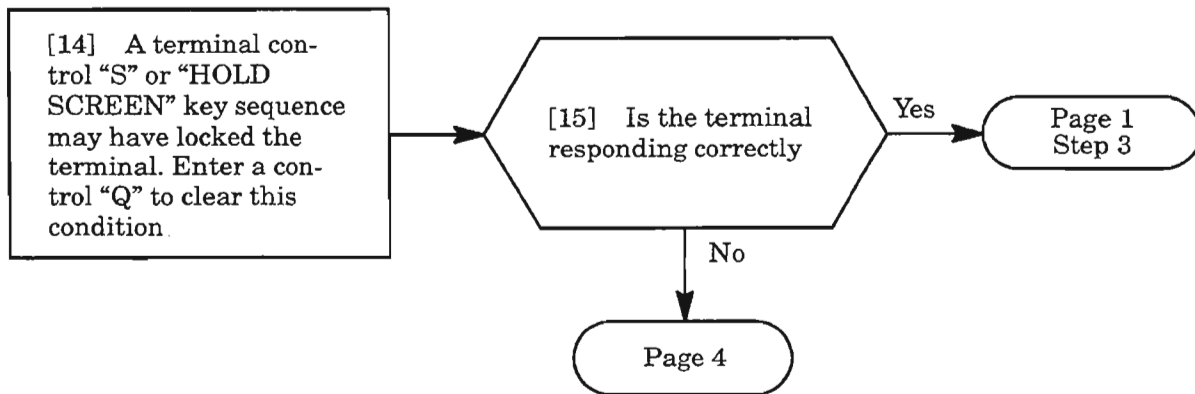
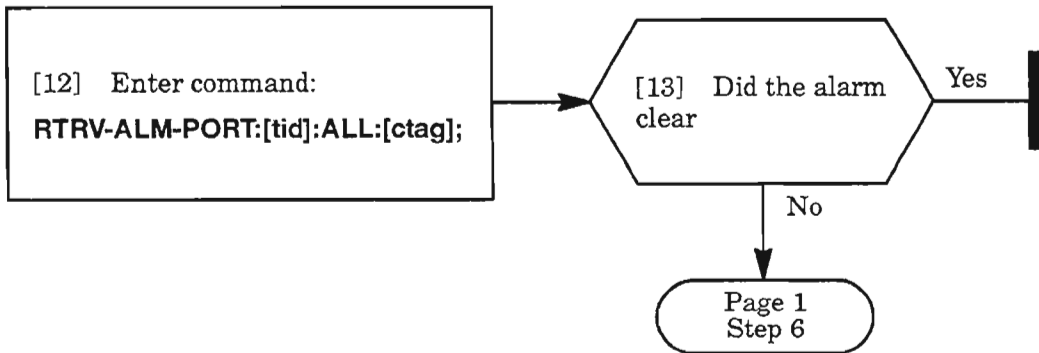
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 3 of 12	017

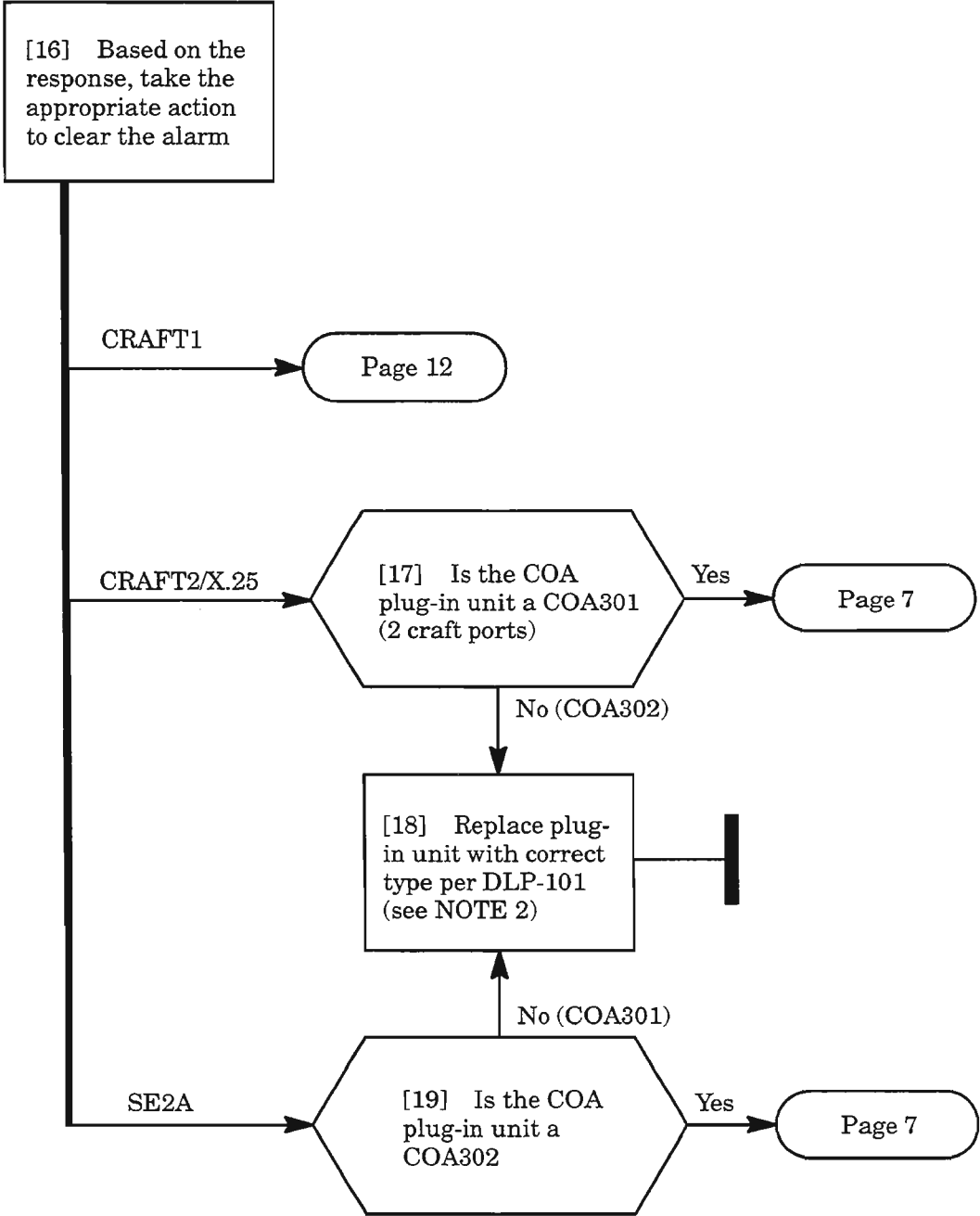


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 12	017

**CLEAR CRAFTX ALARM**



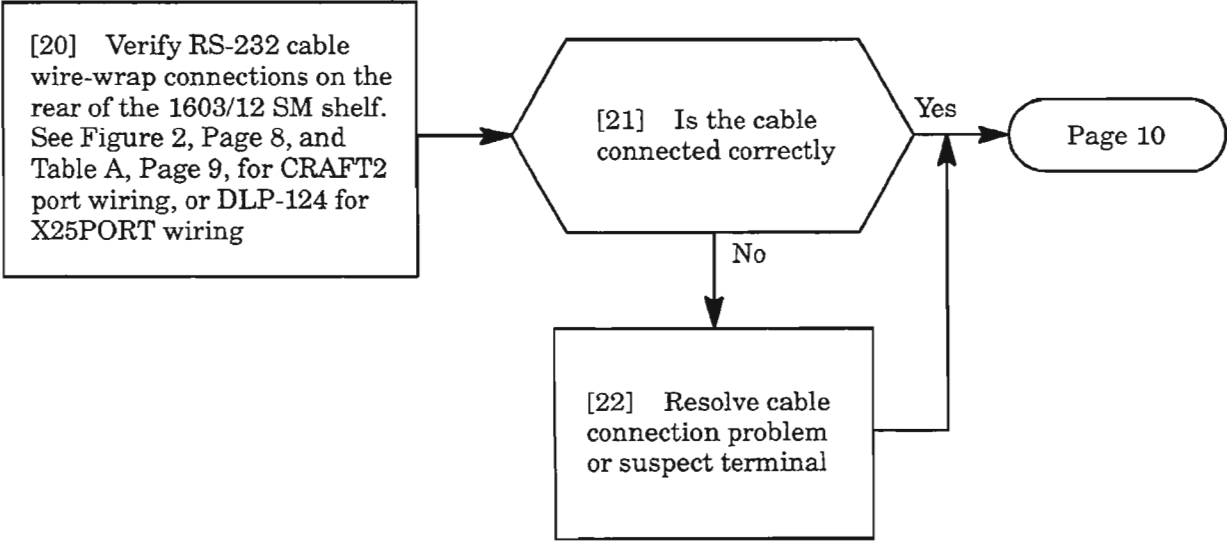




**NOTE: 2.** The COA301 plug-in unit must be installed if a second RS-232 port (CRAFT2) or a X.25 OS interface (X25PORT) is required. The COA302 plug-in unit must be installed if Telemetry Byte-Oriented Serial interface (SE2A) is required.

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 12	017

**CLEAR CRAFTX ALARM**



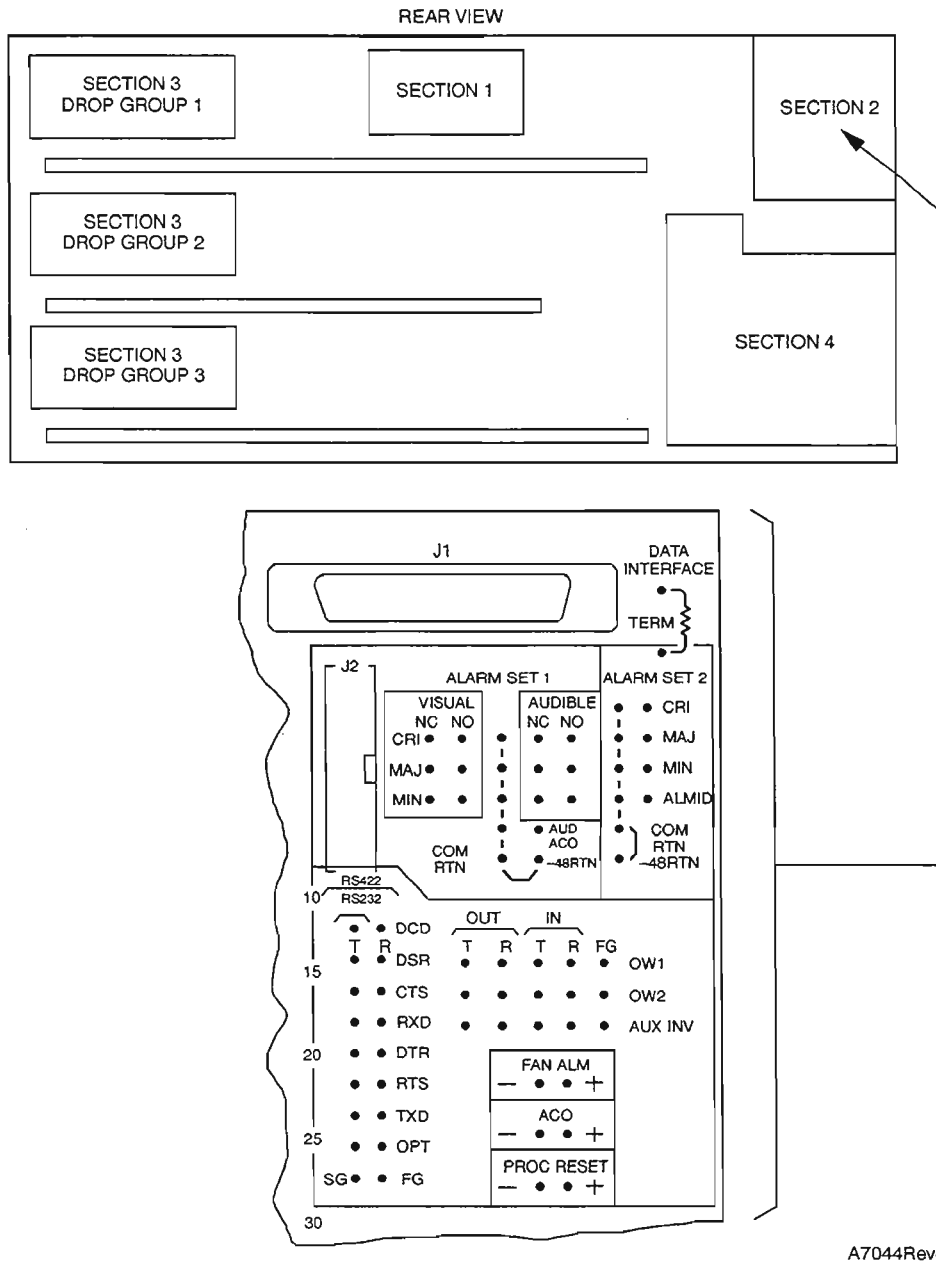


Figure 2. 1603/12 SM Shelf, Rear View of CRAFT2 Connection Points

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 8 of 12	017

CLEAR CRAFTX ALARM

**Table A. CRAFT2 Wiring**

<b>1603/12 SM SHELF PINS</b>	<b>DATA TERMINAL PINS (DTE MODE)</b>	<b>MODEM CONNECTOR PINS (DCE MODE)</b>
DCD-T	8	
DSR-T	6	20
TXD-T	2	3
RXD-T	3	2
RTS-T	4	5
DTR-T	20	8
SG	7	7
CTS-T	5	4

**NOTE:** *Depending on which COA30X plug-in is used, the wire-wrap connections on the CDAC/LAN communications daughterboard on the 1603/12 SM shelf can support either RS-232 (CRAFT2 or X25PORT) or RS-422 (TBOS) configurations.*

**CLEAR CRAFTX ALARM**

<b>ISSUE 2</b>	<b>JULY 1994</b>
<b>ALCL 363-203-502</b>	<b>TAP</b>
<b>PAGE 9 of 12</b>	<b>017</b>

[23] Go to another NE and perform a remote login to this NE so you can interrogate the data base

[24] Enter command:

**RTRV-PORT:[tid]:AIDPORTS:[ctag];**

where: aidports = alarmed port:  
CRAFT1, CRAFT2,  
SE2A or X25PORT

[25] Analyze the PORT\_NBLK parameters and record (from the response) the baud rate, character line width, and whether the port is set for either VDT or TTY mode. See parameter explanation, Table B, Page 11

[26] Verify the terminal has the same settings

AND

[27] Are the system parameter settings and the terminal settings compatible

Yes

[28] Suspect a faulty COA or NEP plug-in unit

COA

TAP-015

NEP

TAP-028

No

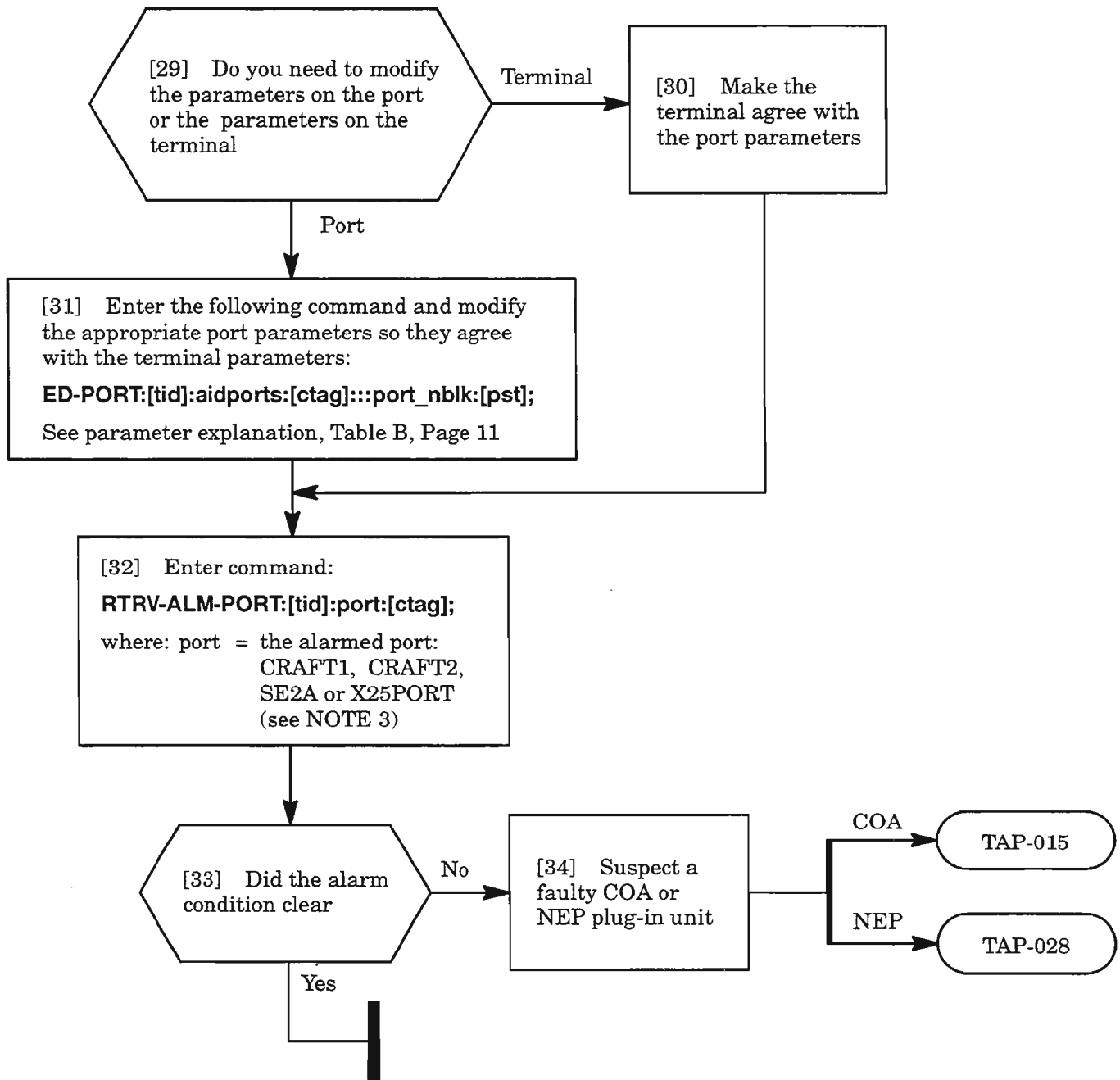
Page 12

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 12	017

**Table B.**

<b>PORT PARAMETERS (port_nblk)</b>	<b>DESCRIPTION</b>
[baud]	The baud rate for the craft interface. The parameter must be one of the following values: 300, 1200, 2400, 4800, 9600 or 19,200
[bits]	The character size for the craft interface. The parameter must be one of the following values: 7 or 8
[par]	The transmit and receive parity for the craft interface. The parameter must be one of the following values: NONE - No parity check ODD - Odd parity check EVEN - Even parity check
[sbits]	The number of stop BITS for the craft interface. The parameter must be one of the following values: 1, 1.5, or 2
[lwid]	The character line width for the craft interface. The parameter must be a value between 10 and 132, inclusive.
[type]	The type of terminal connected to the craft interface. The parameter must be one of the following types: VT100 - DEC VT100 compatible device ANSI - An ANSI compatible device TTY - A hard copy device
[echo]	Echo on (full duplex) or echo off (half duplex). The parameter must be one of the following values: Y (on) or N (off).

**NOTE:** *If there are no changes in the data parameters preceding the colon or semi-colon, then the commas depicting the position-defined parameters are not required.*



**NOTE: 3.** All port parameters for SE2A are fixed. For X25PORT, all parameters are fixed, except baud rate.

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 12	017



[1] Enter command:

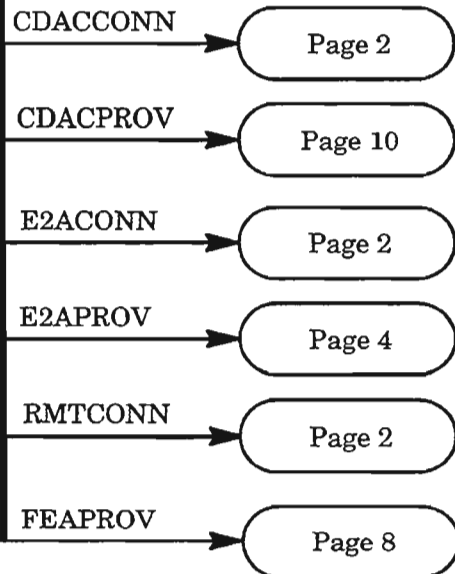
**RTRV-ALM-ALL:[tid]:ALL:[ctag];**

[2] From the response (which may be several lines), look for the following to determine what the netid is for the DLMAP alarm:  
 "netid,DLMAP,ntfcncde,condl,..."

where: condcl = DLMAP alarm type (see Table A)



[3] Select the alarm condition type (condcl in Step 2)



**Table A.**

CONDITION TYPE (condcl)	DESCRIPTION
CDACCONN	CDAC connection failure
CDACPROV	CDAC misprovisioning failure
E2ACONN	E2A gateway connection failure
E2APROV	E2A misprovisioning failure
FEAPROV	Far End Alarm misprovisioning failure
RMTCONN	Remote connection failure for CAMR

[4] See NOTE 1. Retrieve DLMAP entry (DLP-201) to determine what facility provides remote connection to netid by entering command:

**RTRV-DLMAP:[tid]:netid:[ctag];**

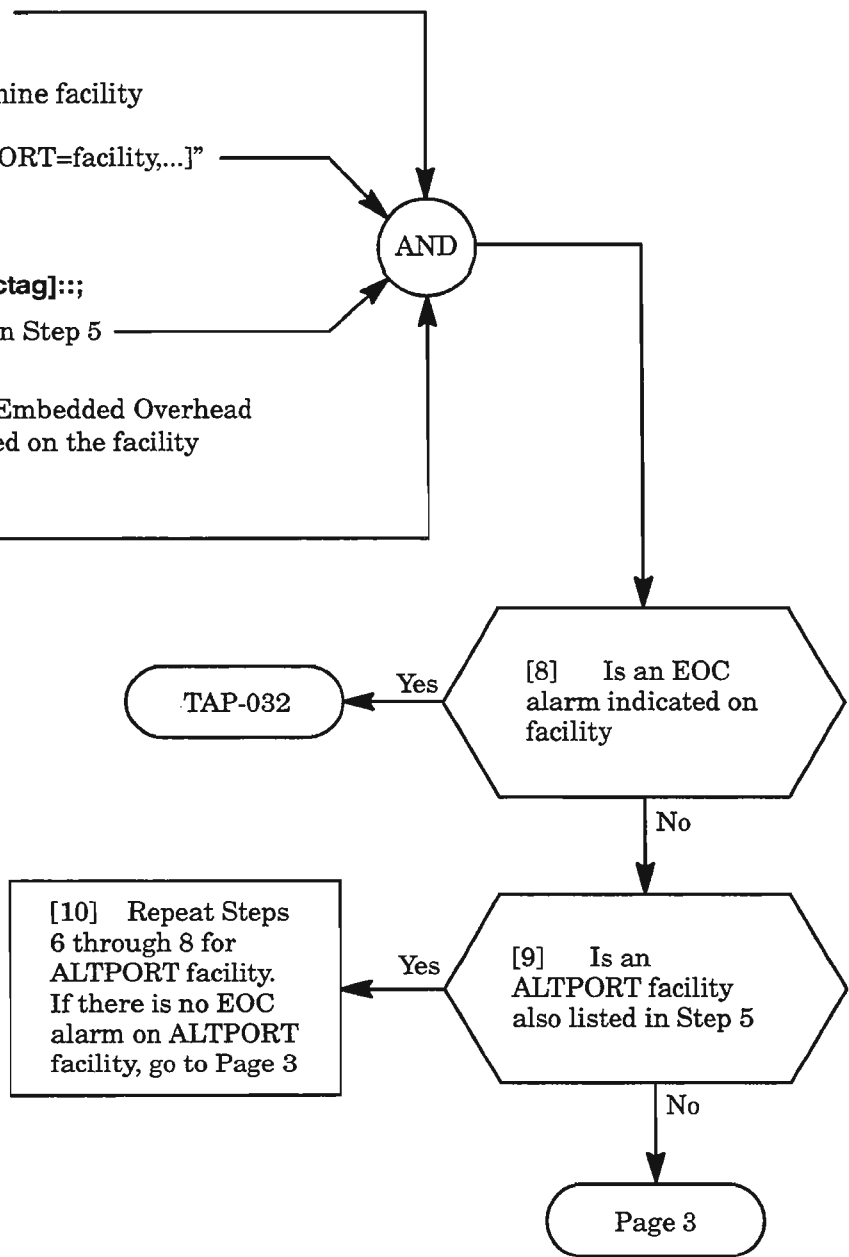
[5] From command response, determine facility providing connection to netid:  
 “netid::PRIPORT=facility,[ALTPORT=facility,...]”

[6] Enter command:

**RTRV-ALM-SDCC:[tid]:facility:[ctag]::;**

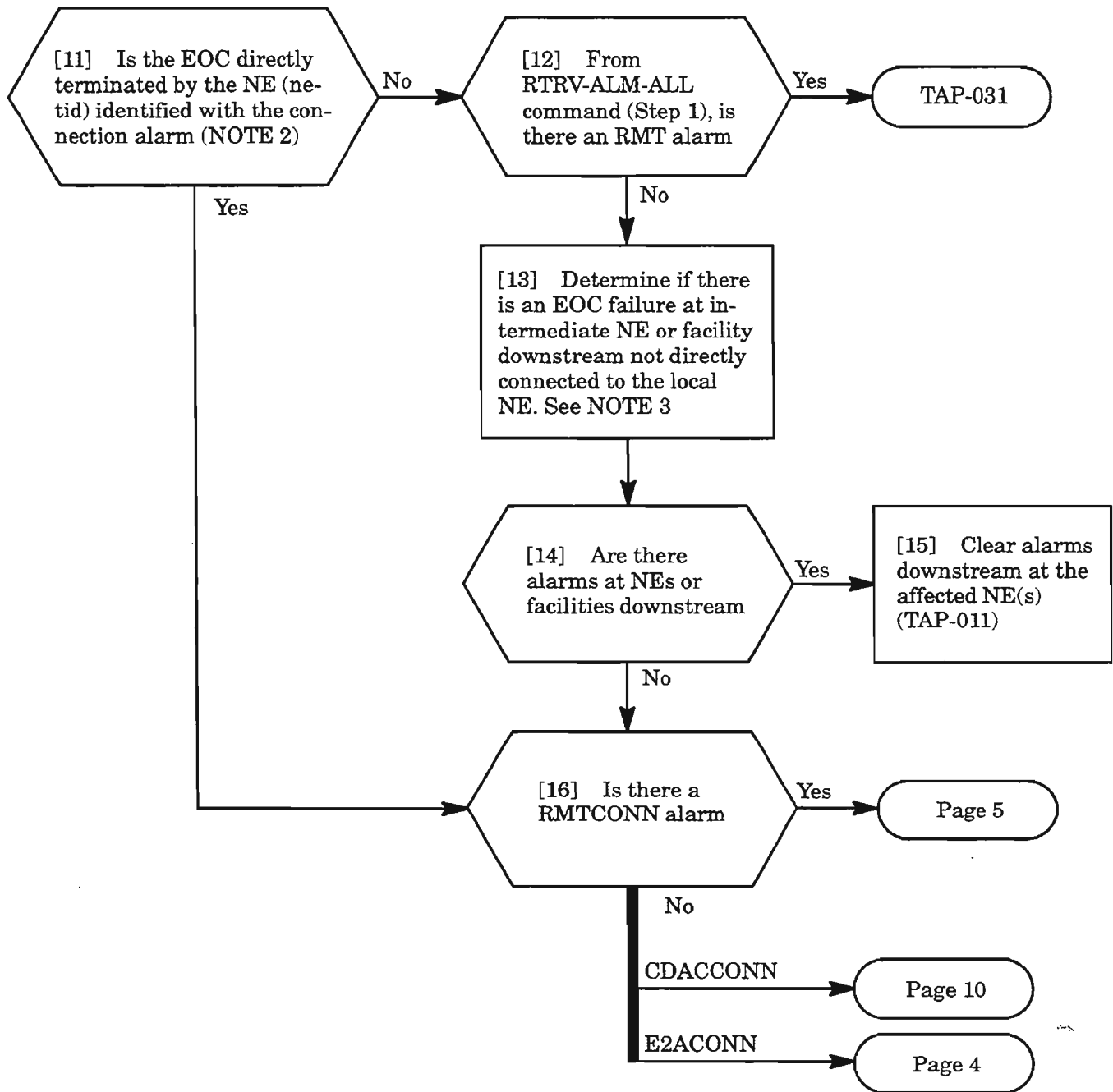
where: facility is for PRIPORT in Step 5

[7] From response, determine if an Embedded Overhead Channel (EOC) alarm is indicated on the facility (response format shown below):  
 “facility,SDCC:ntfncde,EOC,...”  
 where: facility is from Step 6



**NOTE: 1.** The facility listed in the response is providing the communication channel to (or toward) the netid. LG1 and LG2 refer to the OC3 facilities for Line Group 1 and Line Group 2, respectively. MAINT1 refers to the SML (Synchronous Maintenance Link) facilities available for intraoffice network between co-located NEs.

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 2 of 10	018



**NOTES:** 2. The netid may be more than one hop away from the local NE (for example, NE1 and NE3 in Figure 1, Page 4). For example, a failure downstream (between NE2 and NE3 in Figure 1) may cause a communication failure between NE1 and NE3, and yet no apparent alarms (besides the CDACCONN, E2ACONN or RMTCONN alarm) may appear at NE1.

3. Autonomous messages, RMT alarm, or a centralized Alarm and Maintenance Center can help determine if alarms are present at downstream NEs.

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 3 of 10	018

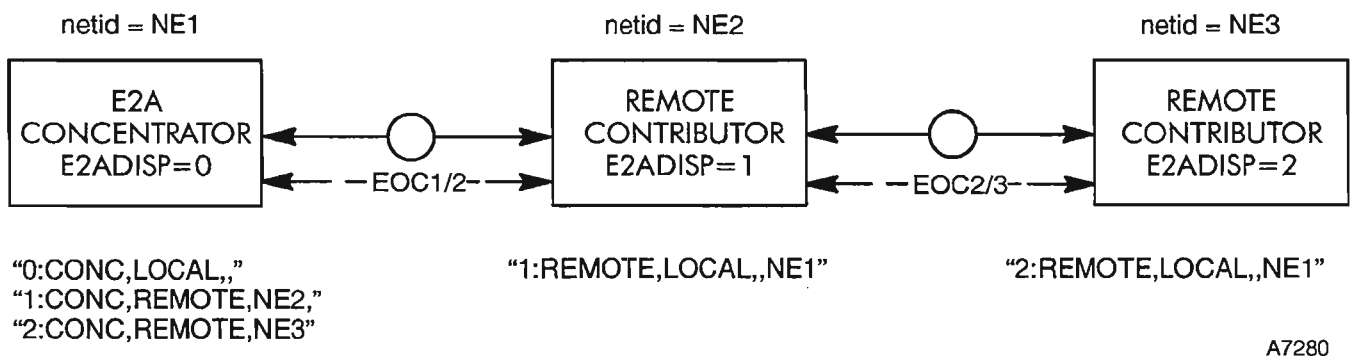
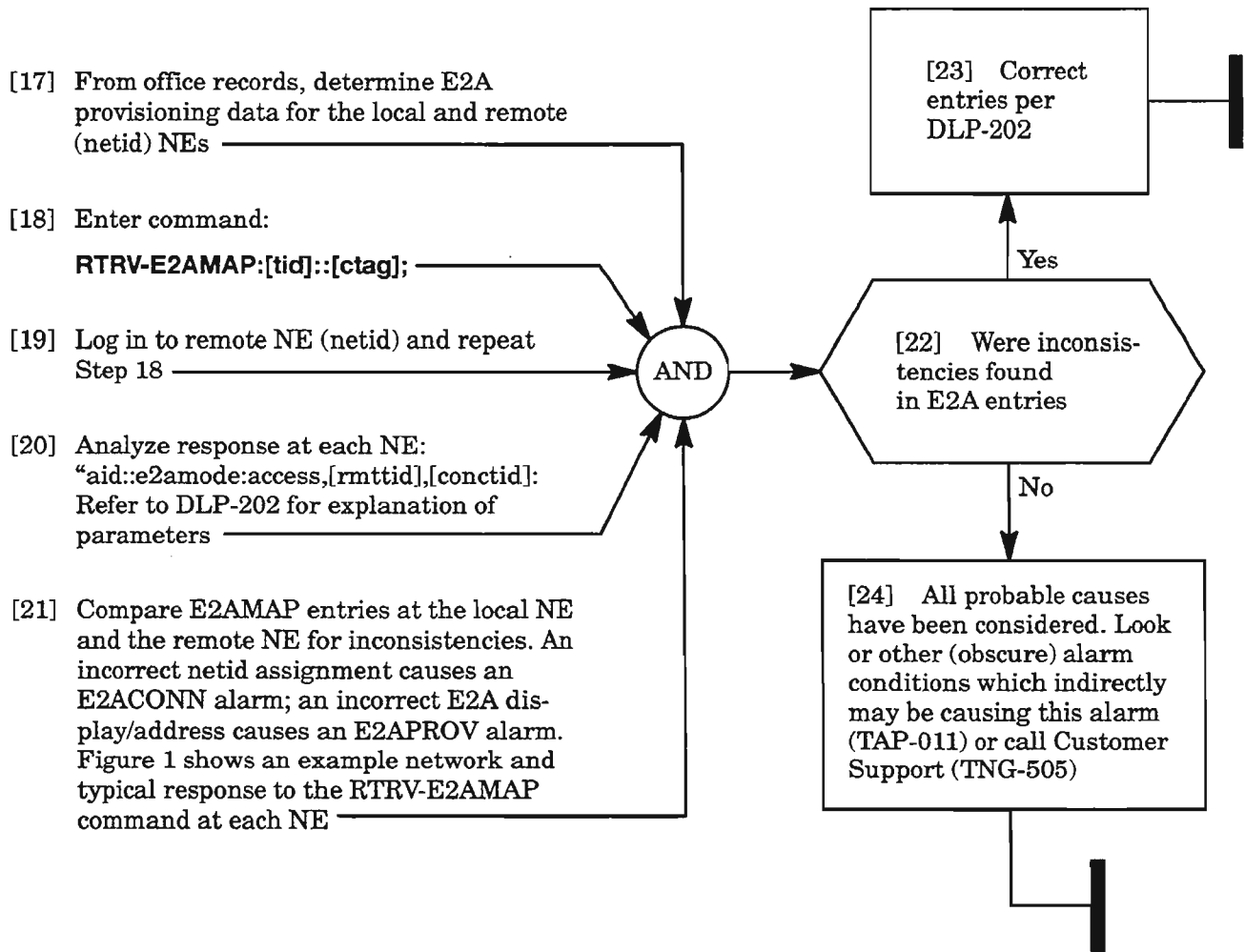


Figure 1. Example Network Showing Responses for RTRV-E2AMAP Command at Each NE

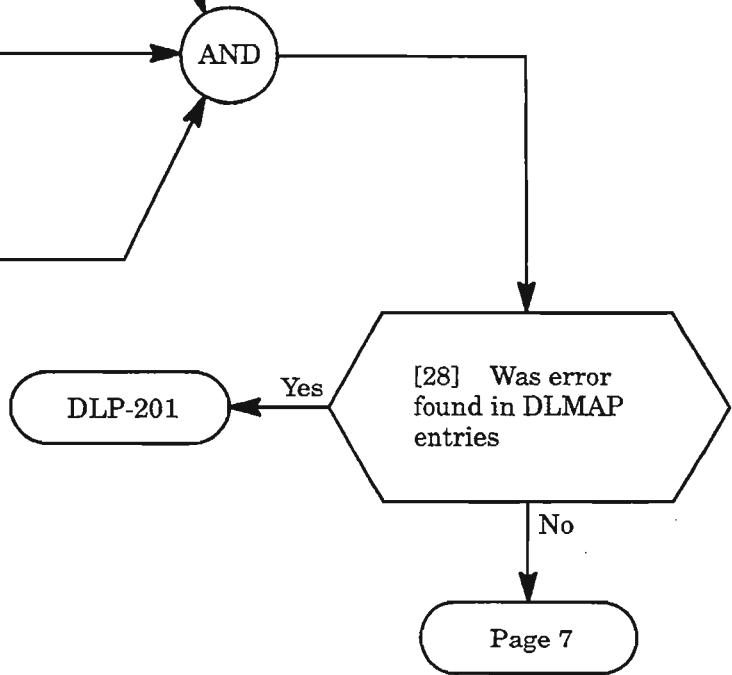
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 10	018

[25] See NOTE 4. Enter command:

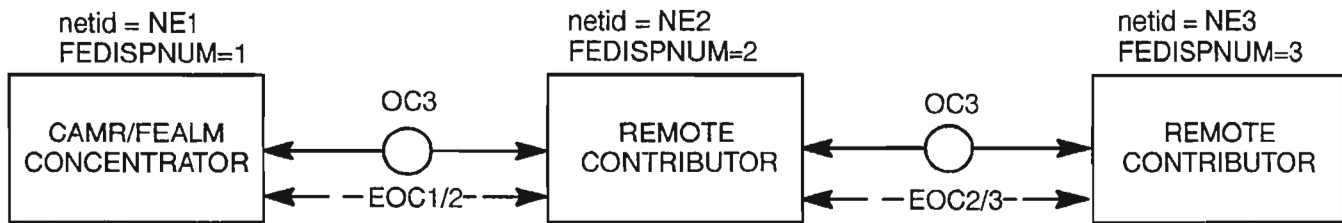
**RTRV-DLMAP:[tid]::[ctag]:**

[26] From response, analyze the DLMAP entry(s) (see DLP-201). The DLMAP entry for each NE in the path from CAMR concentrator to contributor must be entered correctly. See Figure 2 on Page 6 for example entries

[27] Log in to next remote NE in the path toward the remote NE (netid) and repeat Steps [25] and [26]. Repeat until all NEs, including the remote NE, are checked



**NOTE: 4.** *The RMTCONN alarm indicates a failure to establish communication between two NEs for Centralized Autonomous Message Reporting (CAMR). Two causes are possible: CAMR concentrator attempted to poll the remote NE and failed, or the remote NE tried to send an autonomous message to the concentrator and failed. In either case, the RMTCONN alarm is present at the NE that tried to establish the connection first, and the netid parameter in the RTRV-DLMAP response is the tid of the NE it could not connect with. The DLMAP entries at the NEs, including intermediate NEs (if any), must be verified.*



**RESPONSES FOR RTRV-DLMAP::ALL; COMMAND:**

AT NE1 (CAMR AND FAR END ALARM CONCENTRATOR):

- "NE1::NMODE=LOCAL,FEDISPNUM=1"
- "NE2::NMODE=REMOTE,REPTRMT=RMT,FEDISPNUM=2"
- "NE3::NMODE=REMOTE,REPTRMT=RMT,FEDISPNUM=3"

AT NE2:

- "NE1::NMODE=REMOTE,REPTRMT=FCONC,FEDISPNUM=0"
- "NE2::NMODE=LOCAL,FEDISPNUM=2"
- "NE3::NMODE=REMOTE,REPTRMT=NONE,FEDISPNUM=0"

AT NE3:

- "NE1::NMODE=REMOTE,REPTRMT=FCONC,FEDISPNUM=0"
- "NE2::NMODE=REMOTE,REPTRMT=NONE,FEDISPNUM=0"
- "NE3::NMODE=LOCAL,FEDISPNUM=3"

**NOTES:**

1. ONLY PERTINENT PARAMETERS ARE SHOWN IN COMMAND RESPONSES.
2. WITH PROVISIONING AS SHOWN, NE1 WILL RECEIVE AUTONOMOUS MESSAGES FROM NE2 AND NE3 AND REPORT RMT (REMOTE) ALARMS (CAMR). ALSO, FAR END ALARM STATUS IS CONCENTRATED BY NE1 FOR ALL NE'S. NE1 PERIODICALLY SENDS OUT THE ALARM STATUS FOR ALL THE NE'S TO EACH NE, WHICH CAN BE RETRIEVED BY PRESSING THE ID SEL BUTTON ON THE COA UNIT AT ANY OF THE NE'S.
3. FOR CONVENIENCE AND EASE OF ADMINISTRATION, IF FAR END ALARM REPORTING IS USED, INCLUDE THE FEDISPNUM IN THE NETID (FOR EXAMPLE, NETID=CARY\_SOUTH.10, FEDISPNUM=10).

A8073

**Figure 2. Example Network Showing Responses for RTRV-DLMAP Command at Each NE for CAMR and Far-End Alarm Parameters**

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 10	018

**CLEAR DLMAP ALARMS**

**[29] CAUTION:** The following step describes replacement of the NEP plug-in, which may require downloading new software to the replacement unit. To minimize the chance of service interruption, follow the procedure outlined in DLP-101 when referenced in the next step.

[30] Replace NEP plug-in at local NE (DLP-101); then check for DLMAP alarm (Step 31). If alarm remains, replace NEP at remote NE

[31] Enter command:  
**RTRV-ALM-DLMAP:[tid]:netid:[ctag]::;**  
where: netid = remote NE that local NE cannot communicate with

[32] Did DLMAP alarm clear

Yes

No

[33] All probable causes have been considered. Look for other (obscure) alarm conditions which indirectly may be causing this alarm (TAP-011) or call Customer Support (TNG-505)

[34] An FEAPROV alarm indicates that the FEDISPNUM parameter for the DLMAP entries at the far-end alarm concentrator and the remote do not agree

[35] At the far-end concentrator NE, retrieve the DLMAP by entering the command:

**RTRV-DLMAP::ALL;**

[36] From the response, determine the FEDISPNUM assigned to remote netid associated with the FEAPROV alarm, and the FEDISPNUM for itself (if not zero)

[37] Log on to the remote NE with the alarm and retrieve its DLMAP by entering the command:

**RTRV-DLMAP::ALL;**

[38] From the response, determine the FEDISPNUM of itself and the far-end alarm concentrator

[39] Compare the entries from the two NEs. See Figure 2, Page 6, for example responses

AND

[40] Did FEDISPNUM entries agree

Yes

No

[41] Wait up to 10 minutes for alarm to clear. If alarm remains, go to Page 7

Page 7

Page 9

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 8 of 10	018



[42] Determine from office records which DLMAP entry is incorrect

[43] Log on to the NE whose DLMAP entry needs to be corrected and enter the command:

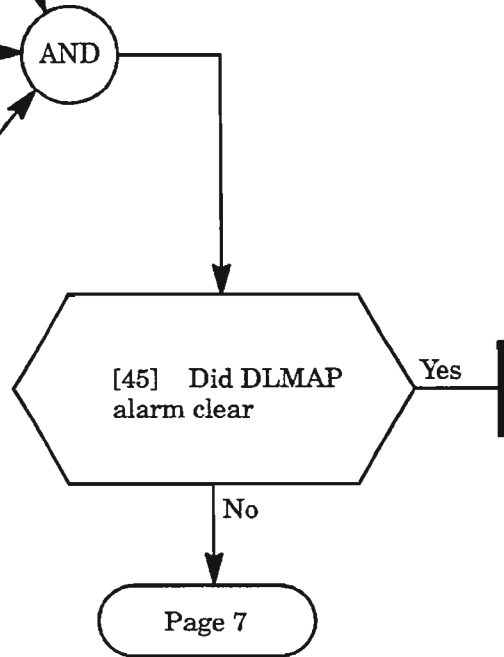
**ED-DLMAP::netid::FEDISPNUM=x;**

where: netid = name of NE whose entry is to be changed

x = 0...32 (0 for no entry)

[44] Wait up to 10 minutes for alarms to clear. Then enter the command:

**RTRV-ALM-DLMAP::ALL;**



[46] A CDACCONN or CDACPROV alarm indicates that an external alarm input or control output entry has been made at one NE but the corresponding entry has not been made (correctly) at the remote NE. See NOTE 5. Refer to DLP-223 for provisioning CDAC connections

[47] Enter the following command:

**RTRV-ALM-DLMAP:[tid]:ALL:[ctag];**

From the response, determine the netid of the NE with the CDACPROV or CDACCONN alarm

[48] Enter the following commands:

**RTRV-ATTR-ENV:[tid]:ALL:[ctag];**

**RTRV-ATTR-CONT:[tid]:ALL:[ctag];**

From the responses, look for the netid identified in Step [47]. Check parameters for the entry or entries assigned to netid. Correct per DLP-223, if necessary

[49] If no problems are found at alarmed NE, log on to the REMOTE NE and enter the commands:

**RTRV-ATTR-ENV:[tid]:ALL:[ctag];**

**RTRV-ATTR-CONT:[tid]:ALL:[ctag];**

From the response, verify that there is an entry corresponding to Step [48] at the REMOTE NE. Enter or correct the entry, as required per DLP-223

AND

[50] Did DLMAP alarm clear

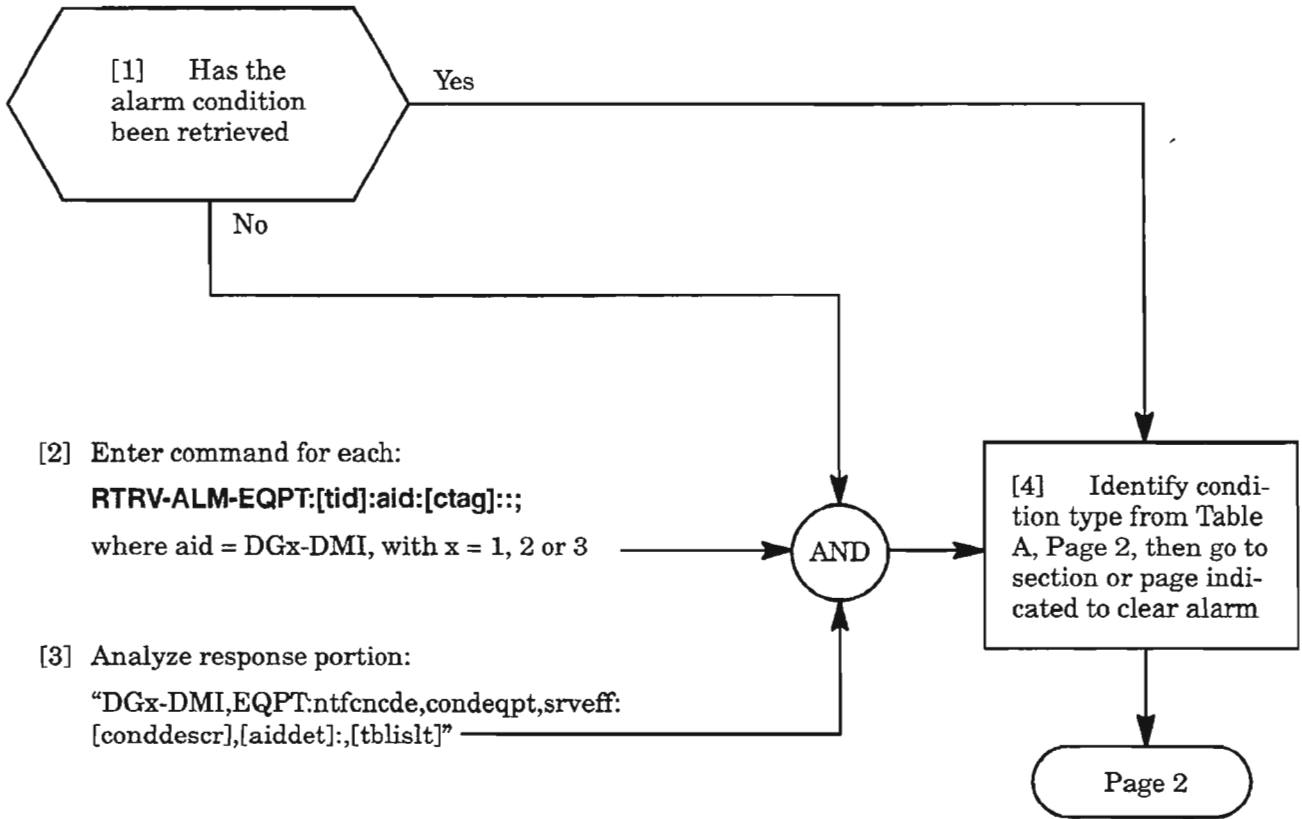
Yes

No

Page 7

**NOTE: 5.** The CDACCONN alarm is reported for a CDAC entry if no CDAC connections already exist to the other (REMOTE) NE. If one or more proper CDAC connections already exist between the two NEs, the CDACPROV alarm is reported instead for any additional entries made with an improper (or no) entry at the other NE. The CDAC feature requires Release 3.0 or later software at both NEs.

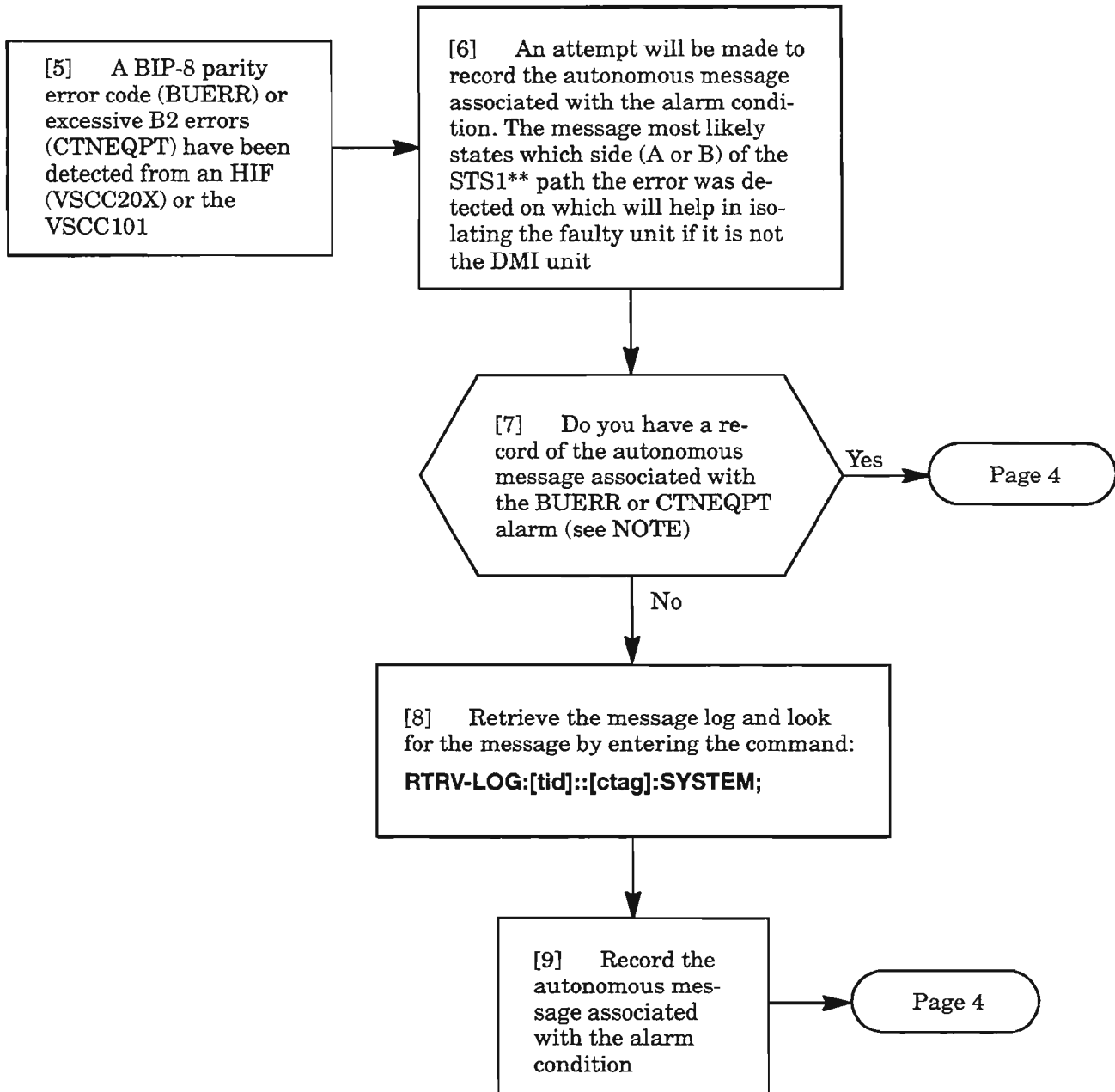
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 10	018



**Table A. Conditions**

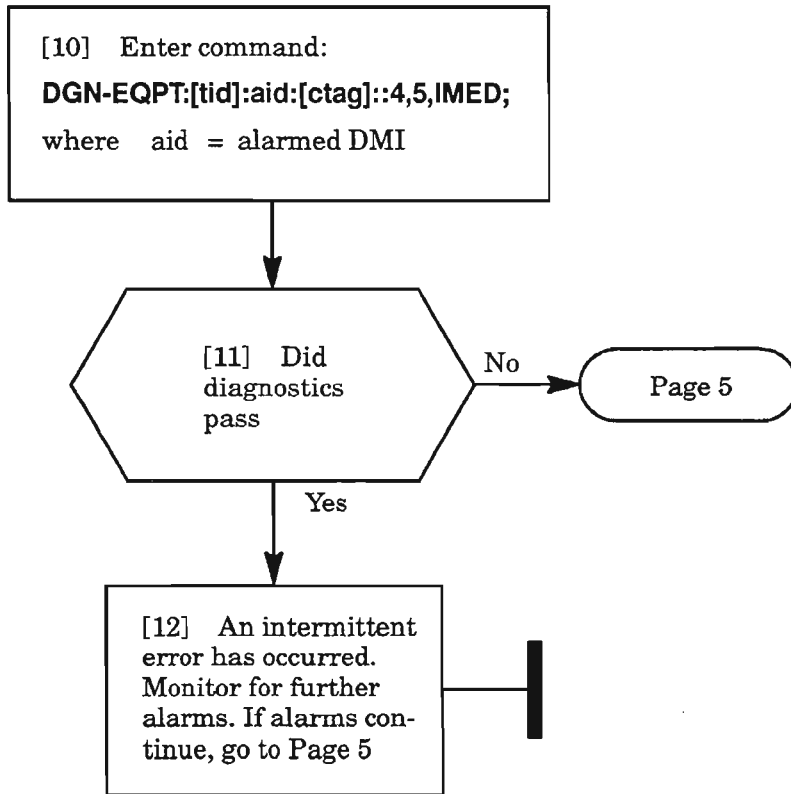
<b>CONDITION/ALARM</b>	<b>DEFINITION</b>	<b>PAGE</b>
BOOT	Processor is running bootcode	(DLP-116)
BUERR	STS1** B2 error on link (A/B)	3
CONTBUS	SBI failure (LOF, reflected or received parity error)	11
CONTCOM	NEP-DMI link fail	11
CONTEQPT	Switch test fail	13
CONTRDUP	Active DMI to standby DMI link fail	16
CNTBUS	SBI reflection test fail	18
CTNEQPT	STS1** (A/B) failure	3
FAILTOSW	Failed to switch	20
IMPROPRMVL	Improper removal	22
INHDBG	Inhibit diagnostics	23
INHMPREPT	Inhibit PM reporting	23
INHSDWX	Inhibit switch to duplex	23
INT	DMI internal failure (SFMT, R/W, error count)	24
INVERR	Inventory error	26
MEA	Mismatch of unit and provisioning data	28
MTCE	Removed from service for maintenance	29
PROGVER	Program version error	30
SYNCCLK	Sync clock fail or SFMT	32

# BUERR/CTNEQPT



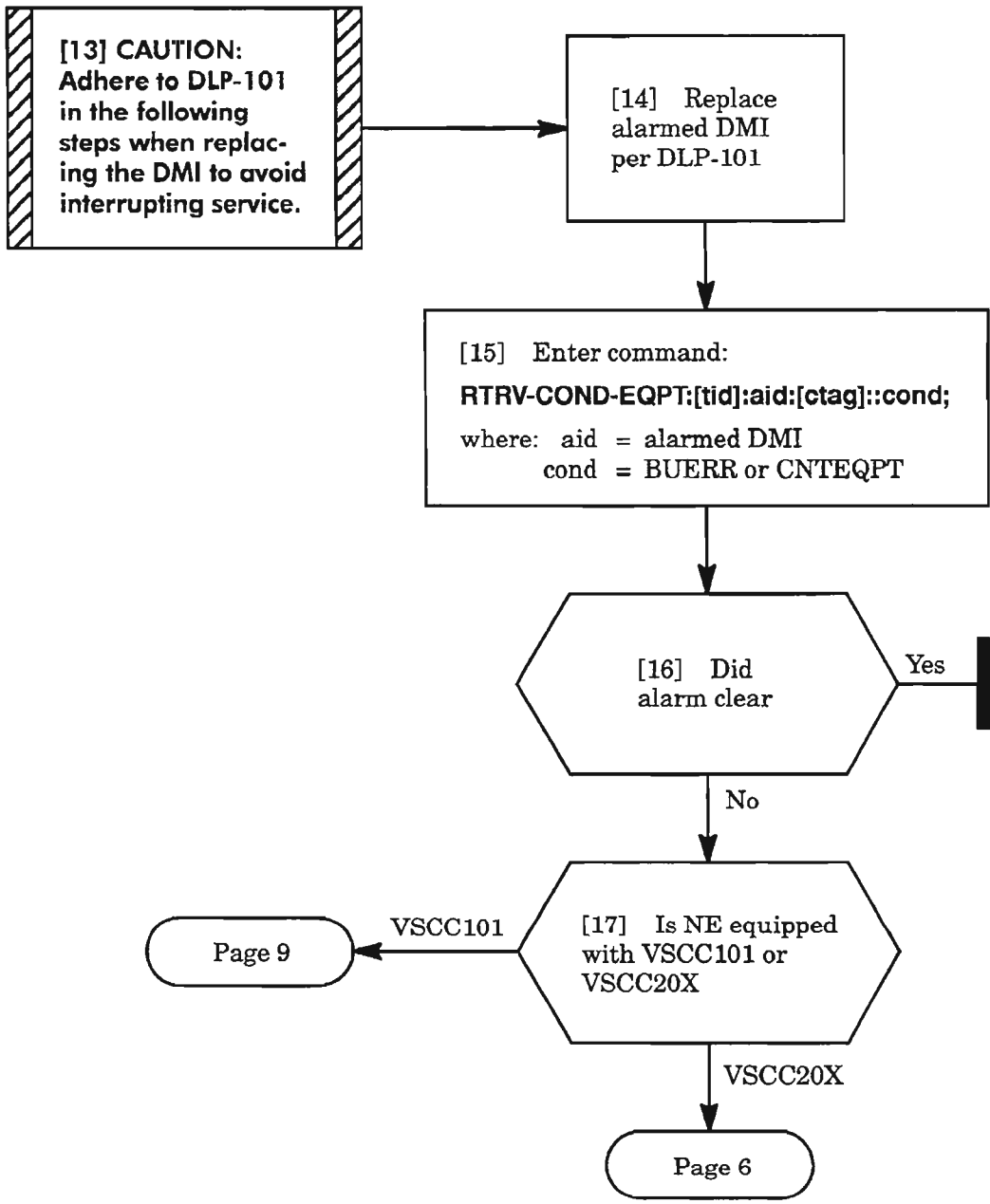
**NOTE:** 1. The autonomous message will be of the type *REPT-ALM-EQPT* with the aid format of *DGx-DM1y* (where *x = 1, 2, or 3, and y = A or B*). If *BUERR* alarm, the *conddescr* parameter will contain *B2ERRORA* or *B2ERRORB*. If *CTNEQPT* alarm, the *conddescr* parameter will contain *STS1AFAIL*, *STS1BFAIL*, *STSAINERX* or *STSBINERX*. The highlighted A or B in the *conddescr* indicates which *STS\*\** bus (Side A or Side B) the error was detected on (see *TAP-052*).

**BUERR/CTNEQPT (cont)**

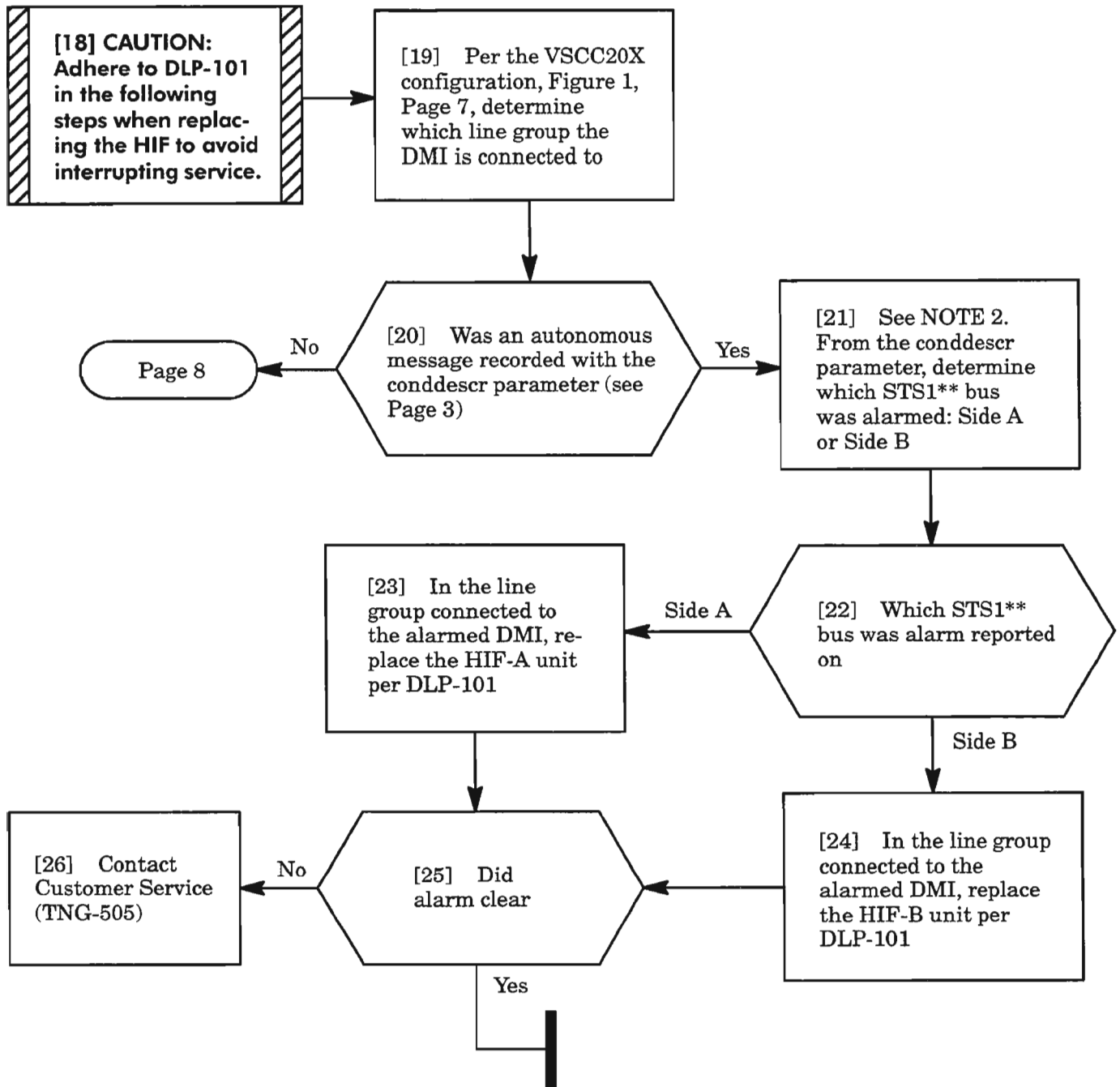


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 34	019

# BUERR/CTNEQPT (cont)



# BUERR/CTNEQPT (cont)

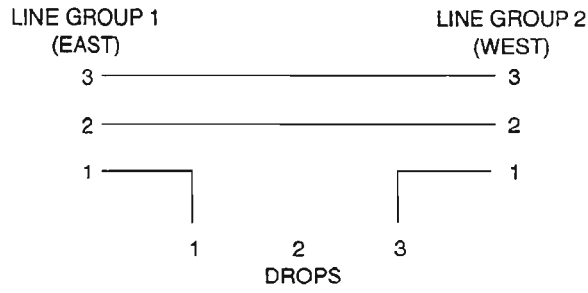


**NOTE: 2.** If BUERR alarm, the conddescr parameter will contain B2ERRORA or B2ERRORB. If CTNEQPT alarm, the conddescr parameter will contain STS1AFAIL, STS1BFAIL, STSAIN-ERX or STSBINERX. The highlighted A or B in the conddescr indicates which STS\*\* bus (Side A or Side B) the error was detected on.

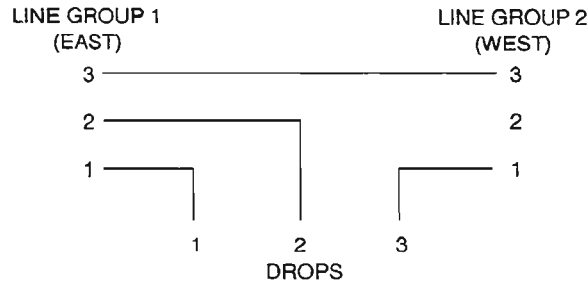
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 34	019

**CLEAR DMI UNIT ALARM**

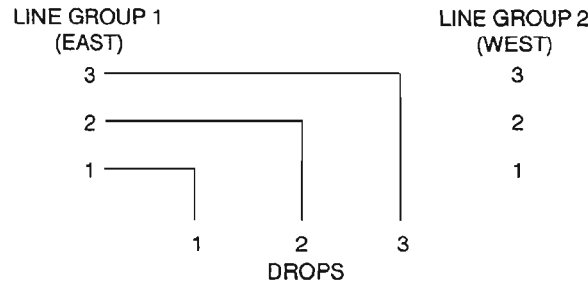




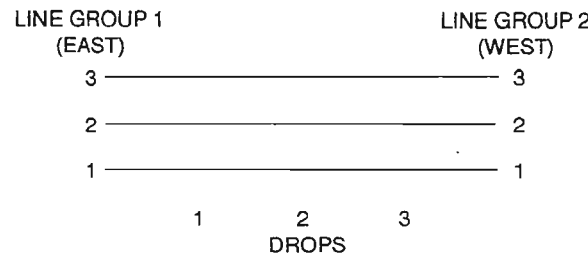
**Detail A - VSCC201, Routing Diagram**



**Detail B - VSCC202, Routing Diagram**



**Detail C - VSCC203, Routing Diagram**



**Detail D - VSCC204, Routing Diagram**

A7395

**Figure 1. VSCC20X, 625618-000-00X, Traffic Routing Diagrams**

**BUERR/CTNEQPT (cont)**

**[27] CAUTION:**  
Adhere to DLP-101  
in the following  
steps when replac-  
ing the HIF to avoid  
interrupting service.

[28] In the line group  
connected to the  
alarmed DMI, replace  
the HIF unit (replace  
the standby unit, if du-  
plex) per DLP-101

[29] Did  
alarm clear

[30] Is line  
group duplex  
(two HIF units)

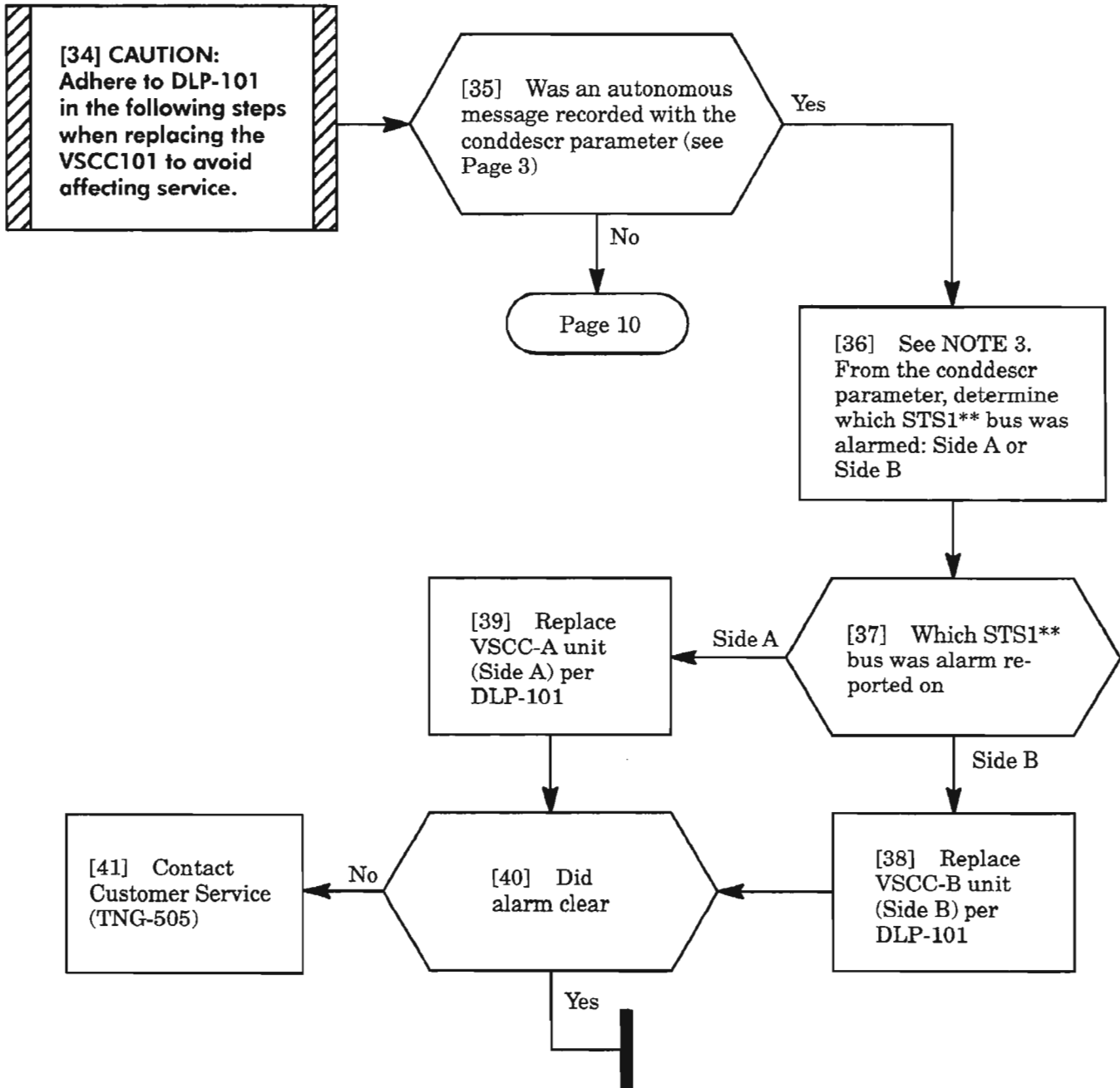
[33] Contact  
Customer Service  
(TNG-505)

[31] Replace the  
active HIF unit  
per DLP-101

[32] Did  
alarm clear

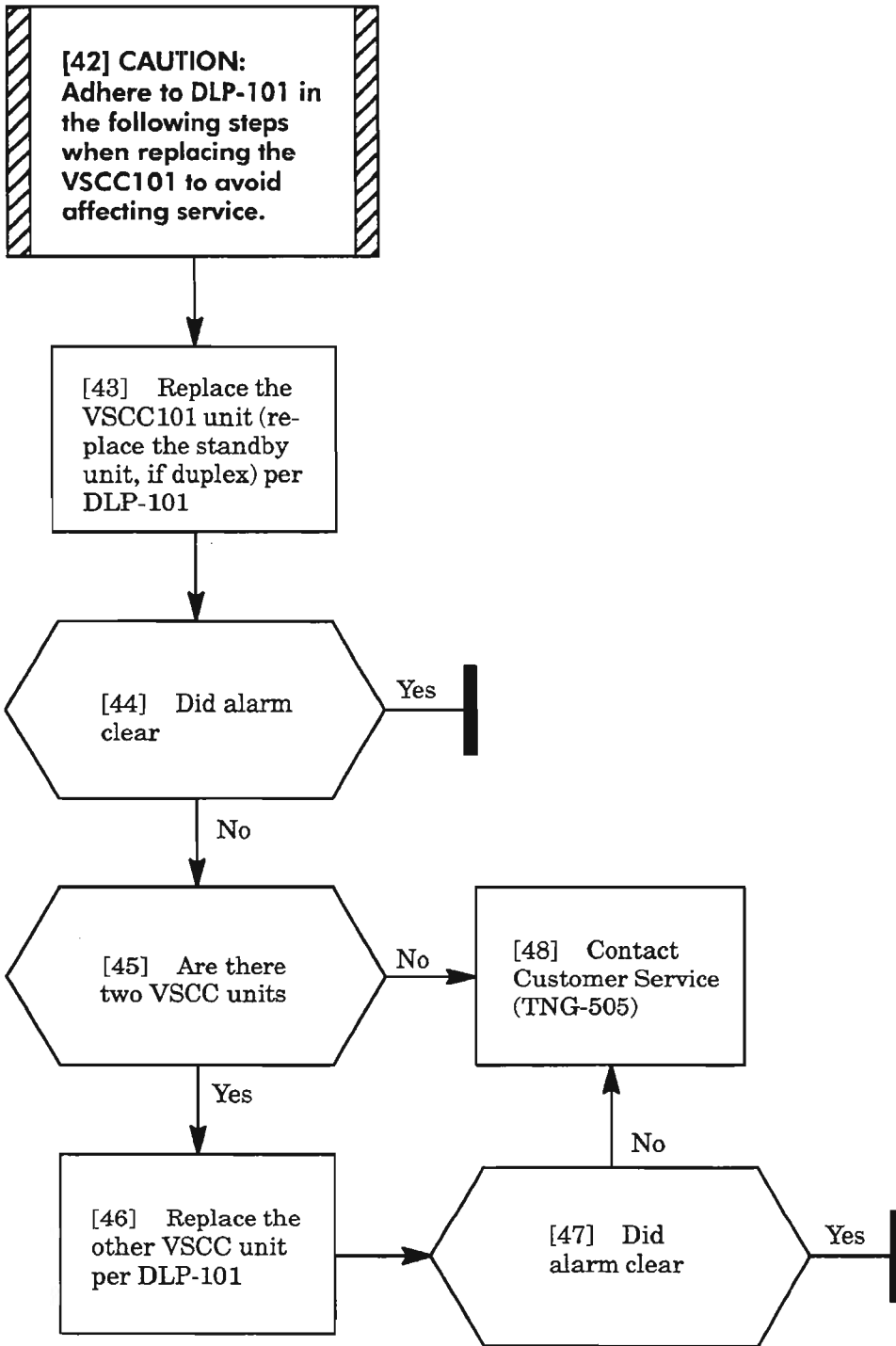
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 8 of 34	019

**BUERR/CTNEQPT (cont)**



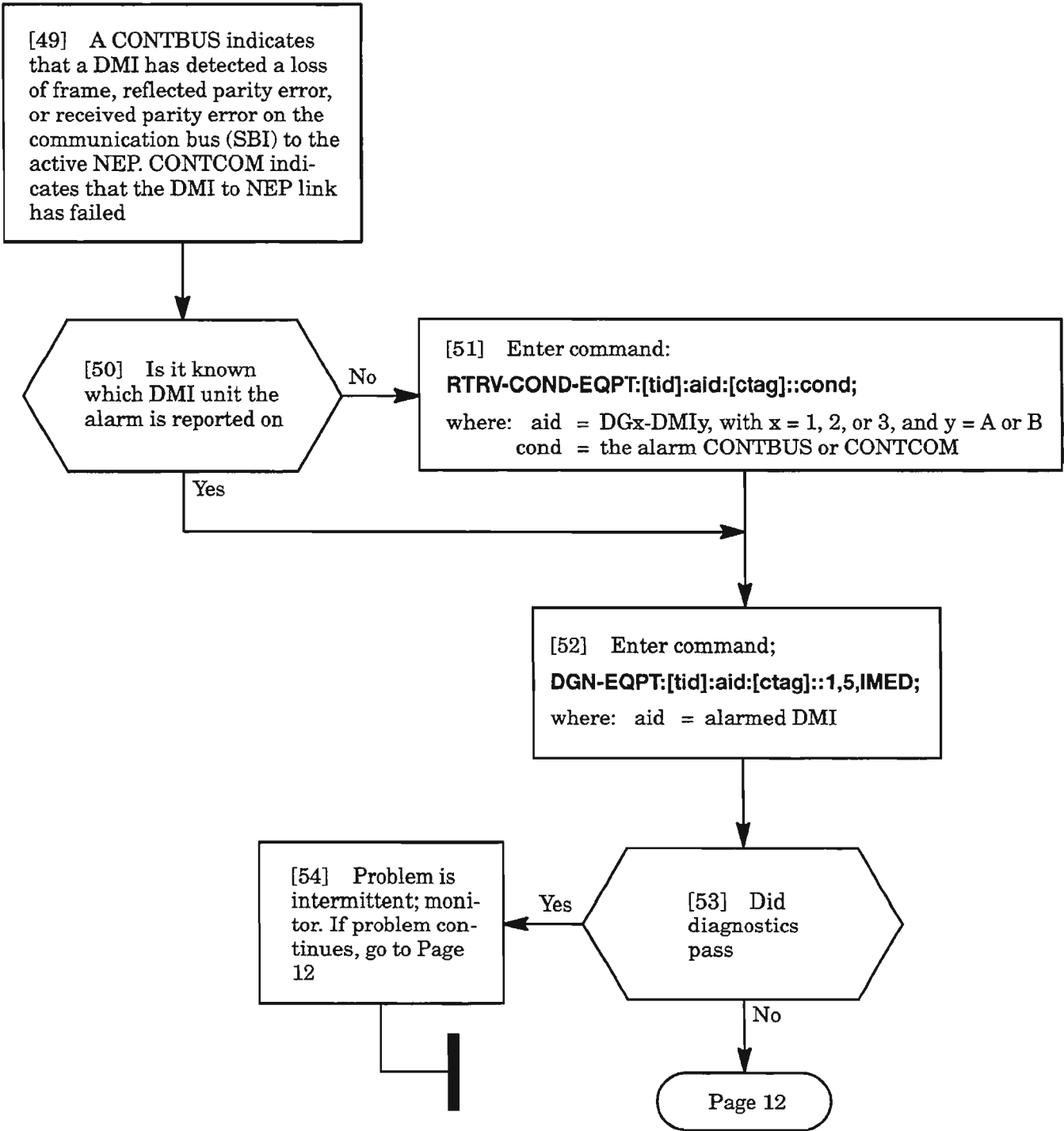
**NOTE: 3.** If BUERR alarm, the conddescr parameter will contain B2ERRORA or B2ERRORB. If CTNEQPT alarm, the conddescr parameter will contain STS1AFAIL, STS1BFAIL, STSAIN-ERX or STSBINERX. The highlighted A or B in the conddescr indicates which STS\*\* bus (Side A or Side B) the error was detected on.

**BUERR/CTNEQPT (cont)**

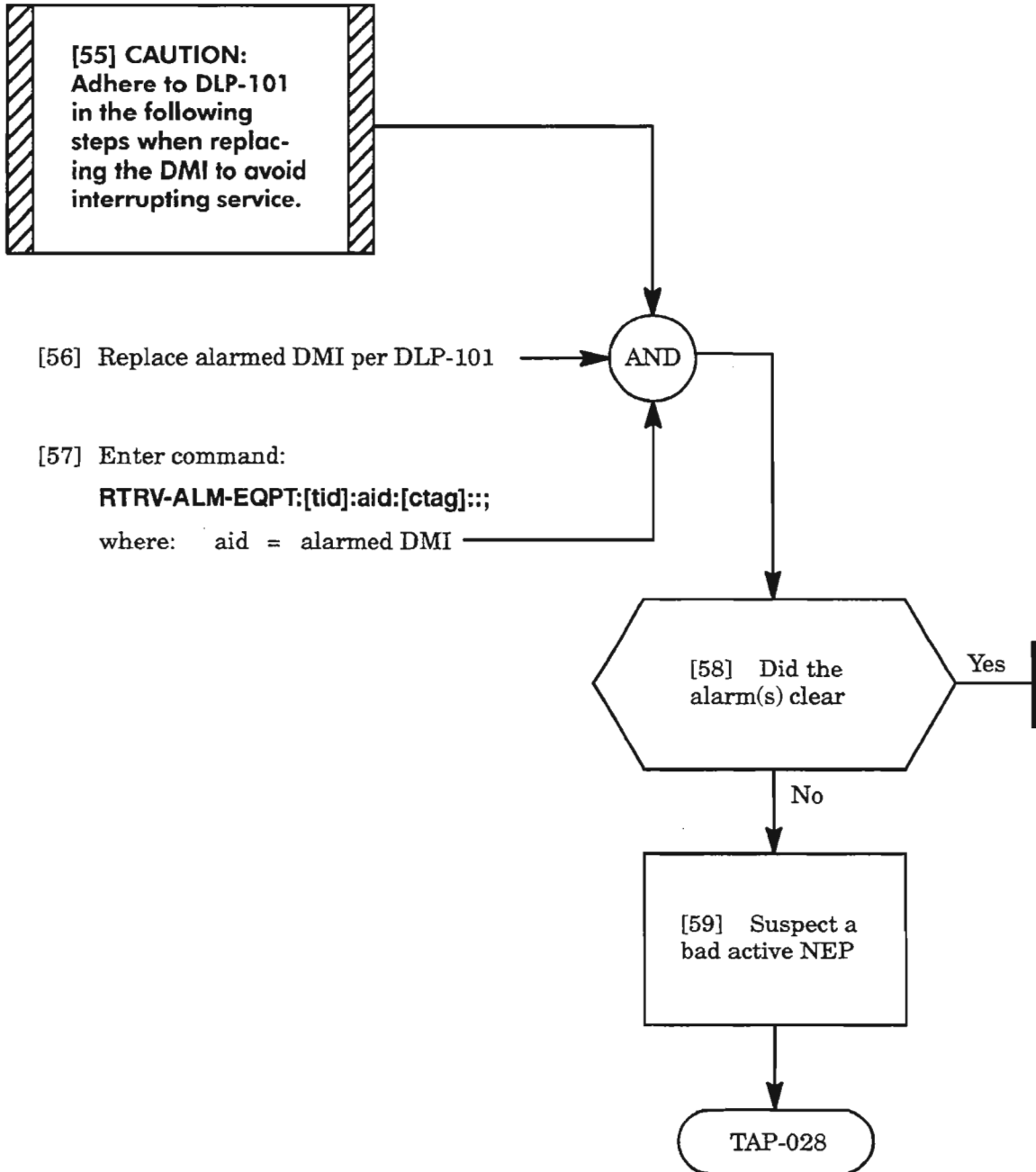


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 34	019

# CONTBUS/CONTCOM

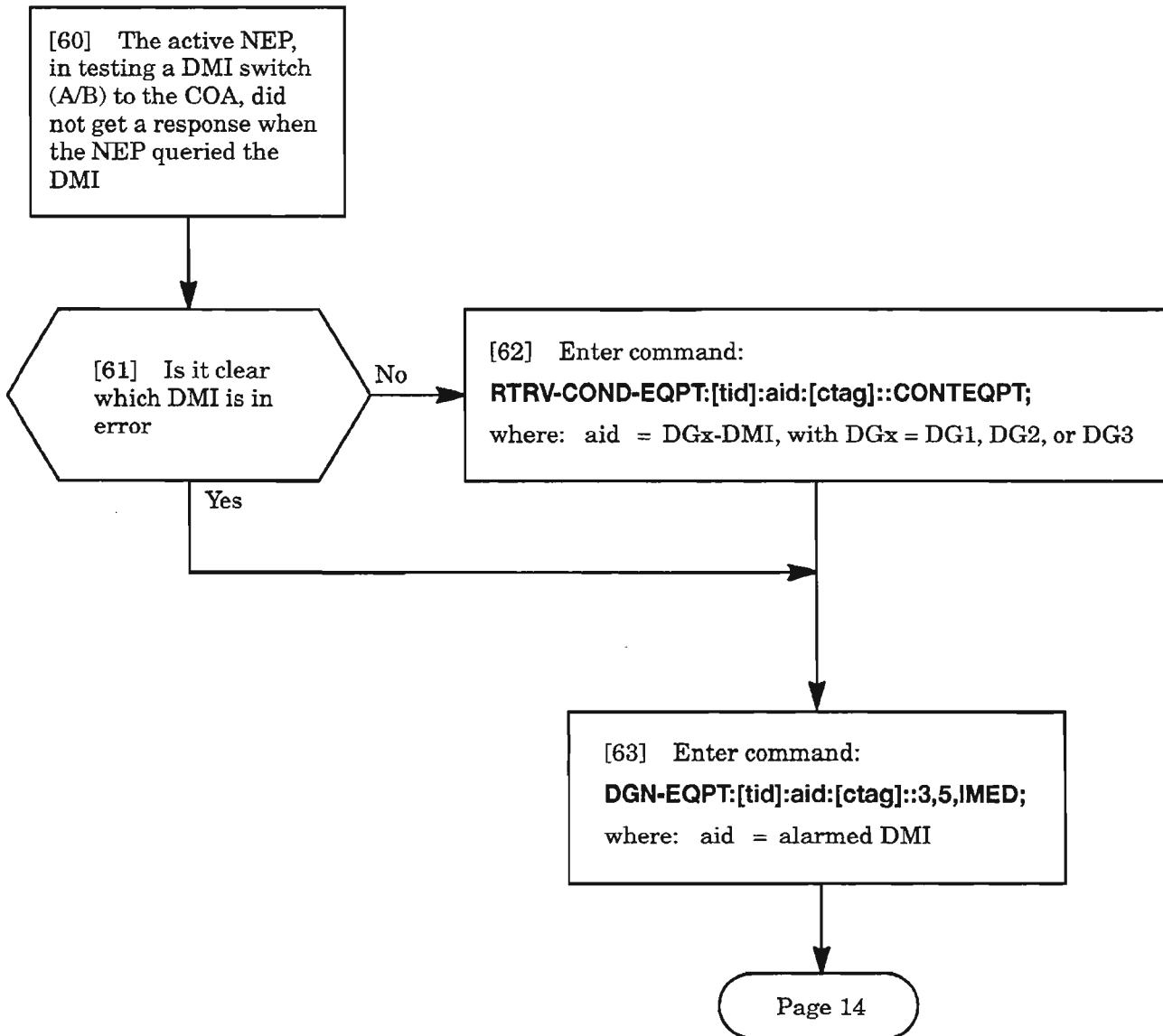


# CONTBUS/CONTCOM (cont)

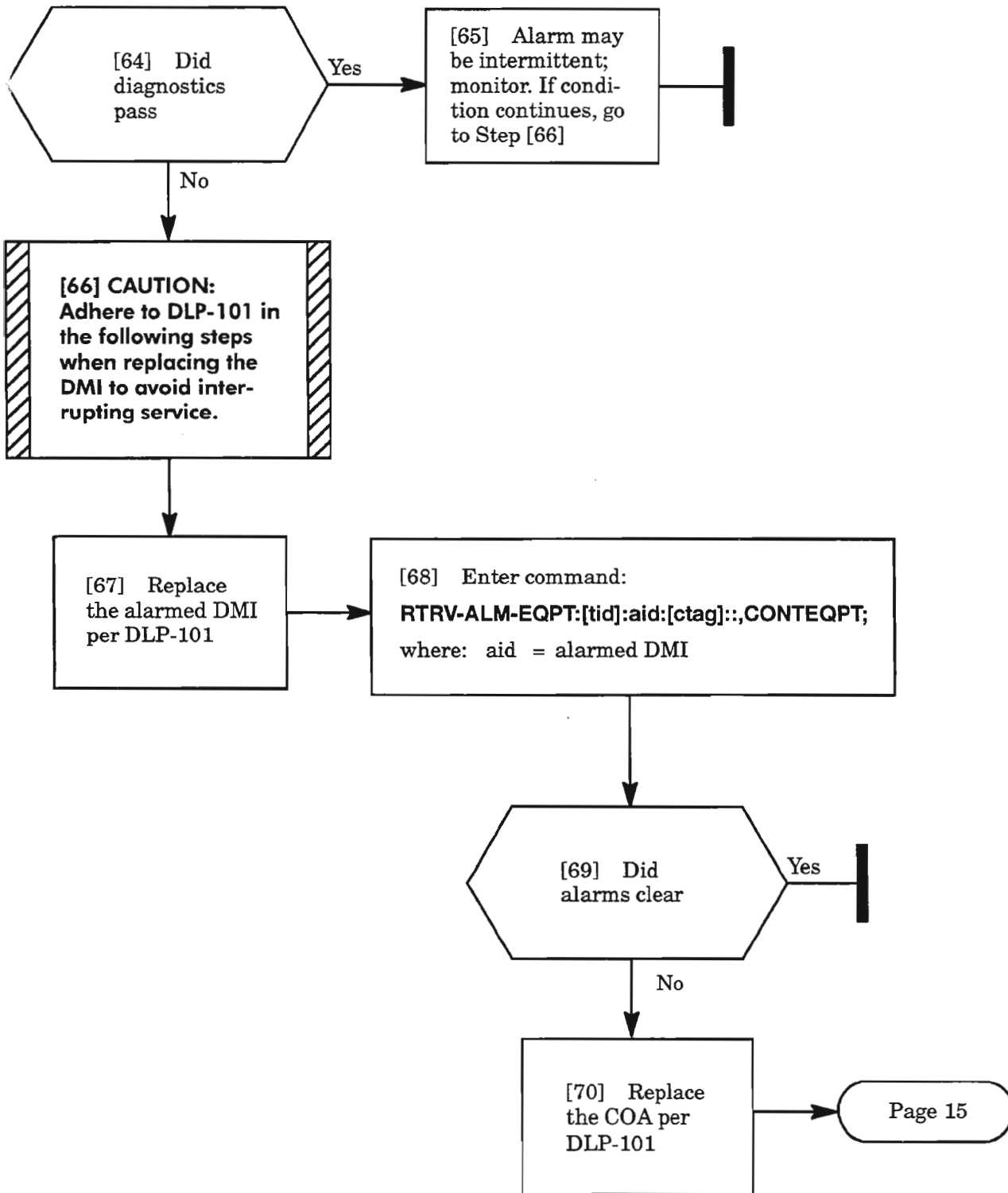


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 34	019

# CONTEQPT



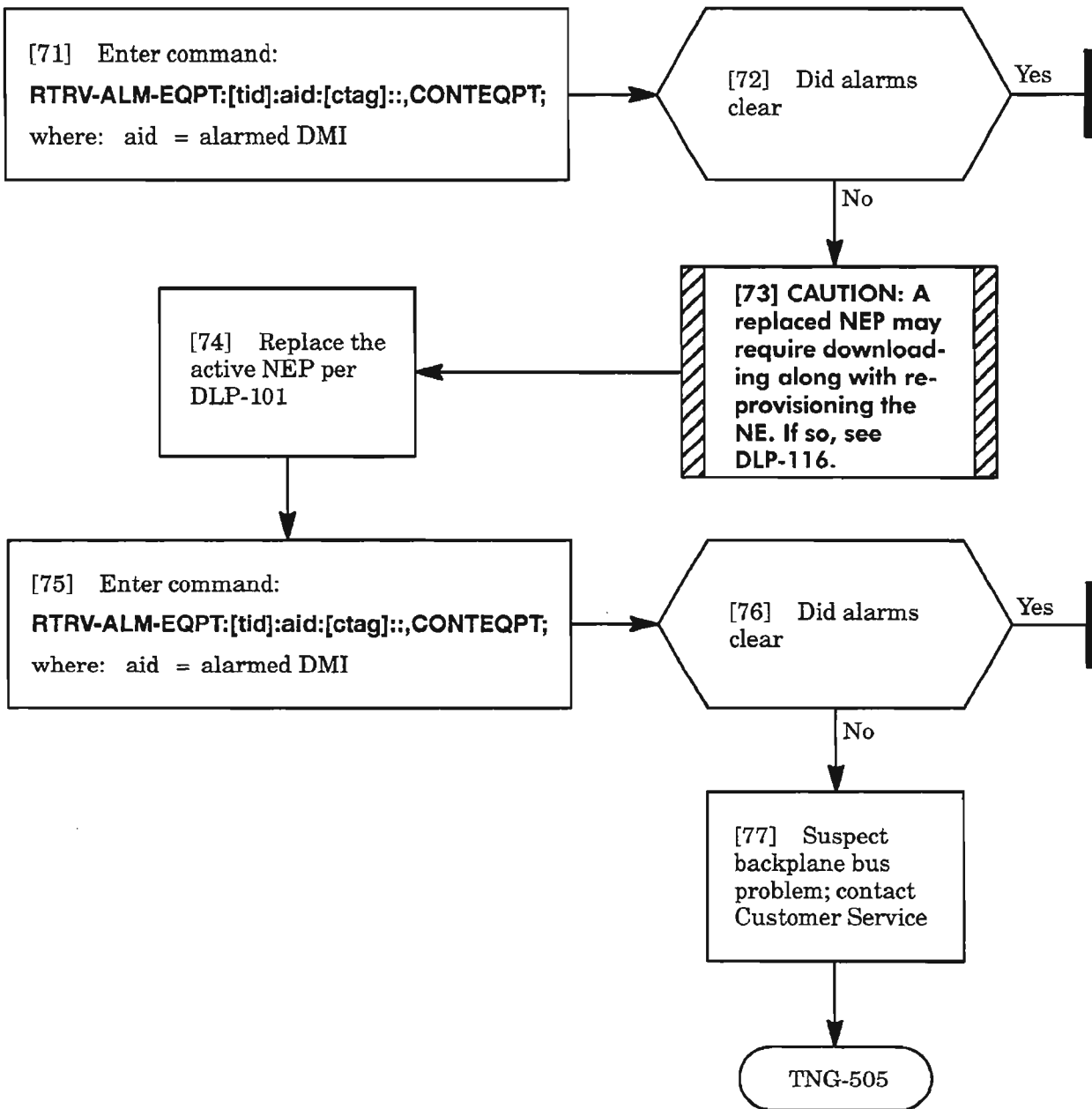
**CONTEQPT (cont)**



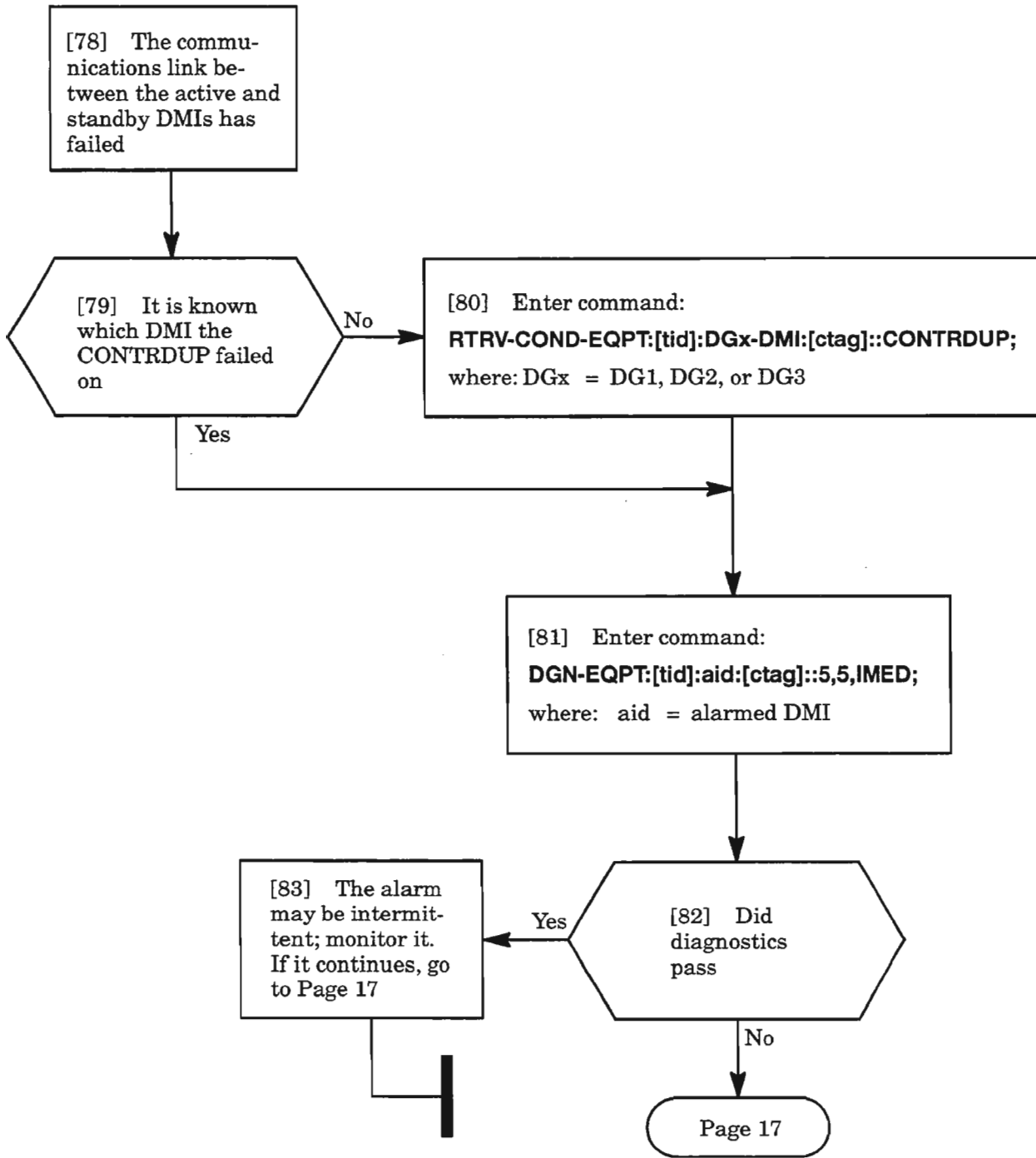
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 14 of 34	019



**CONTEQPT (cont)**

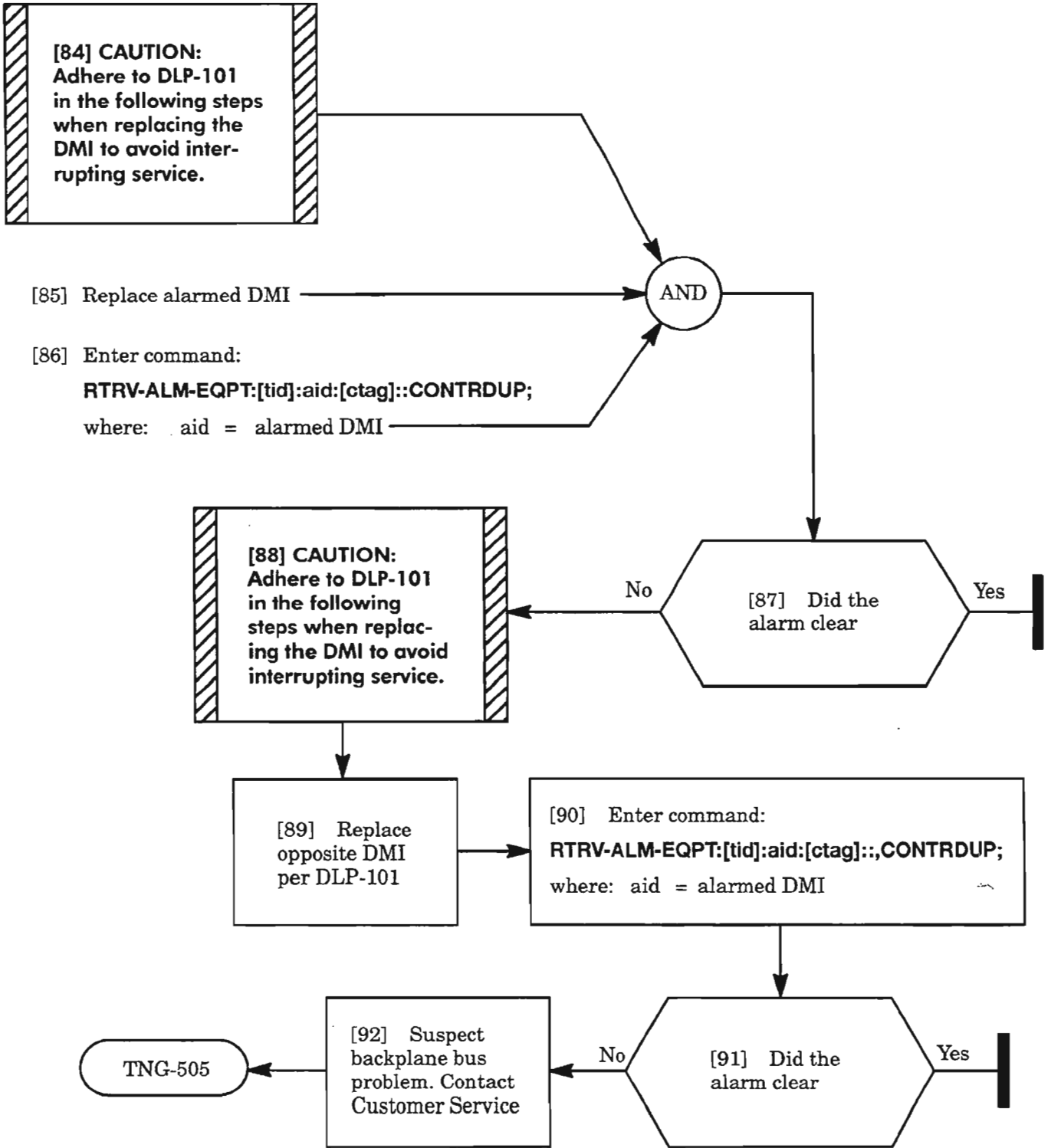


# CONTRDUP

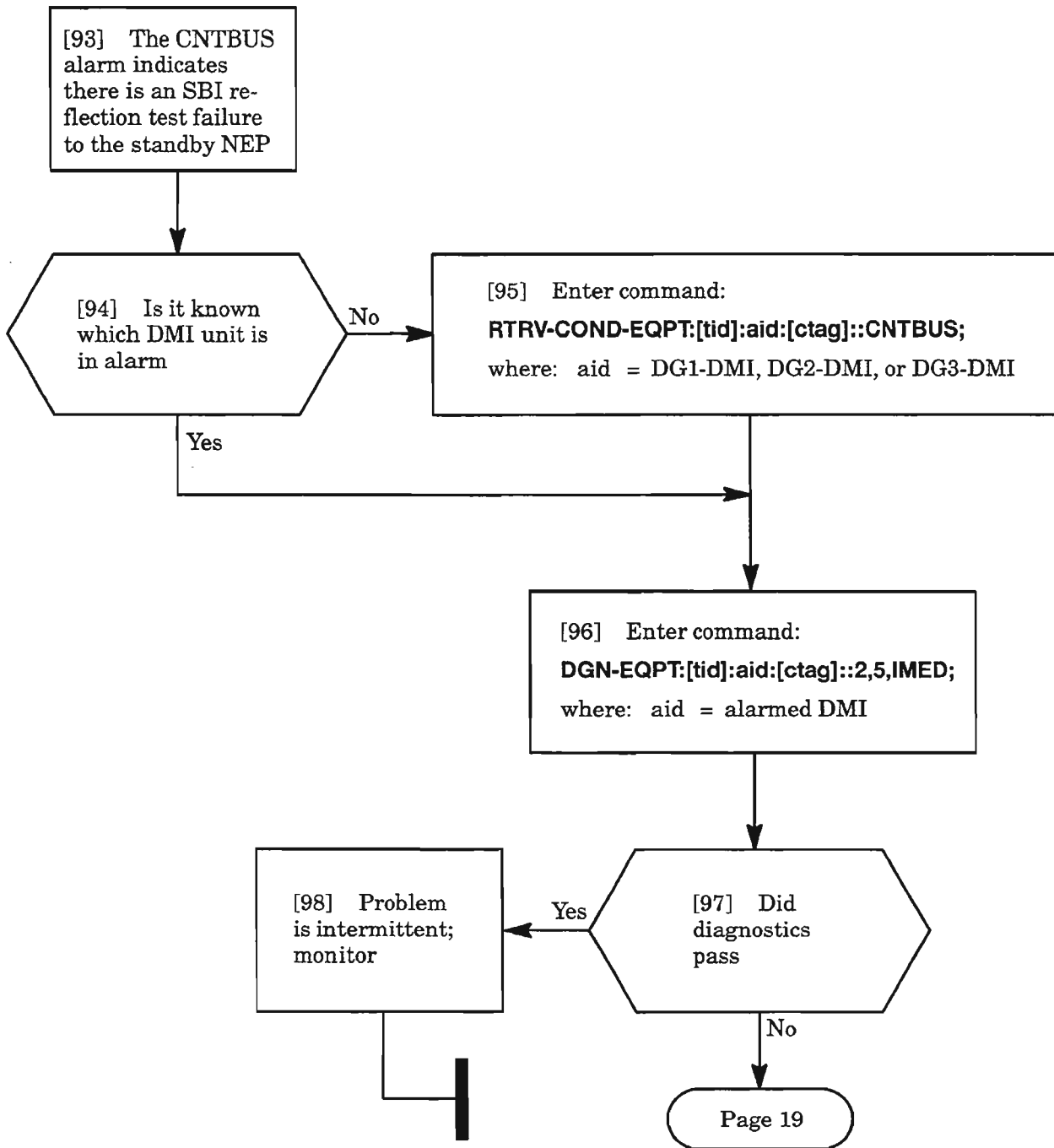


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP 019
PAGE 16 of 34	

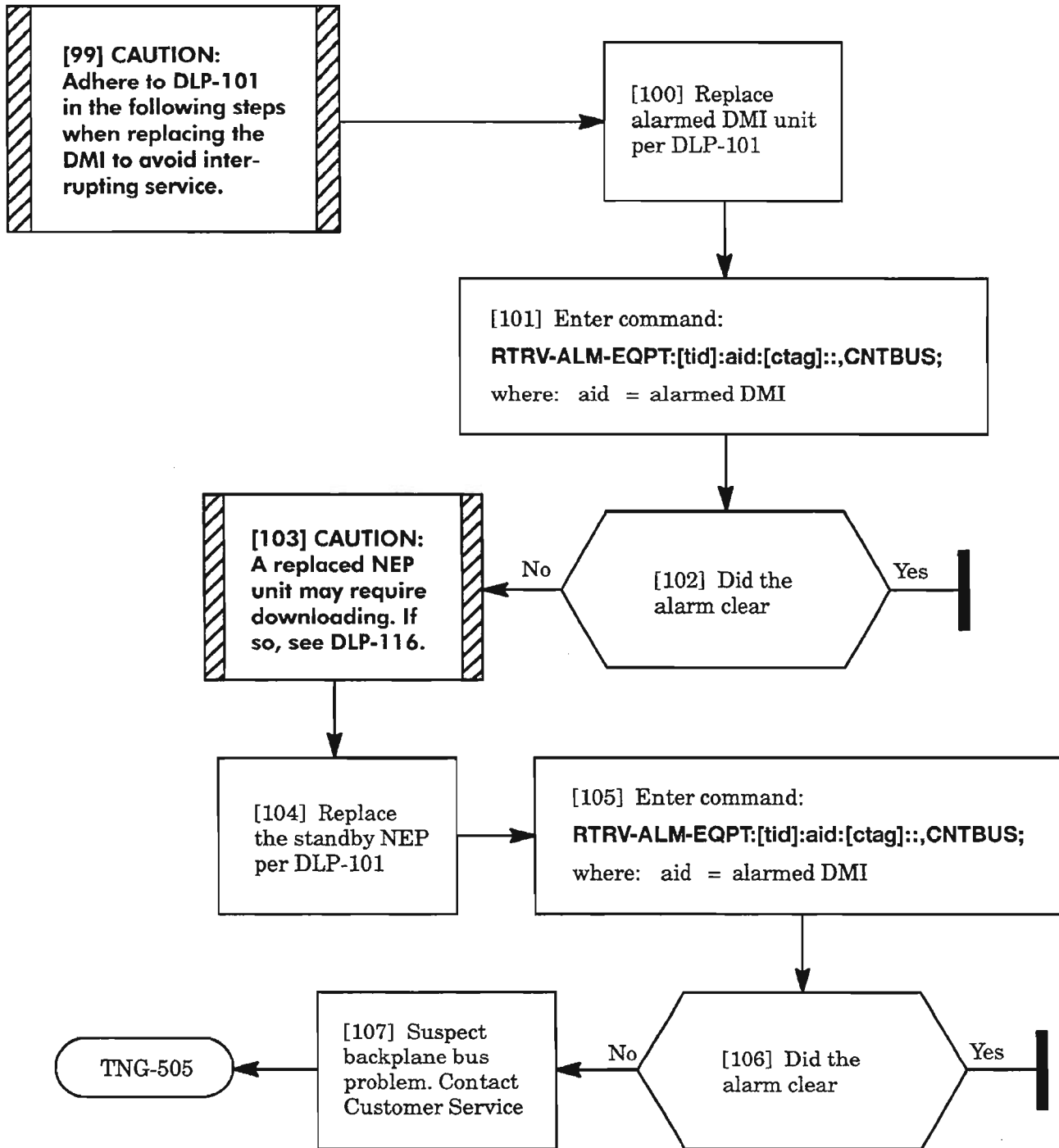
**CONTRDUP (cont)**



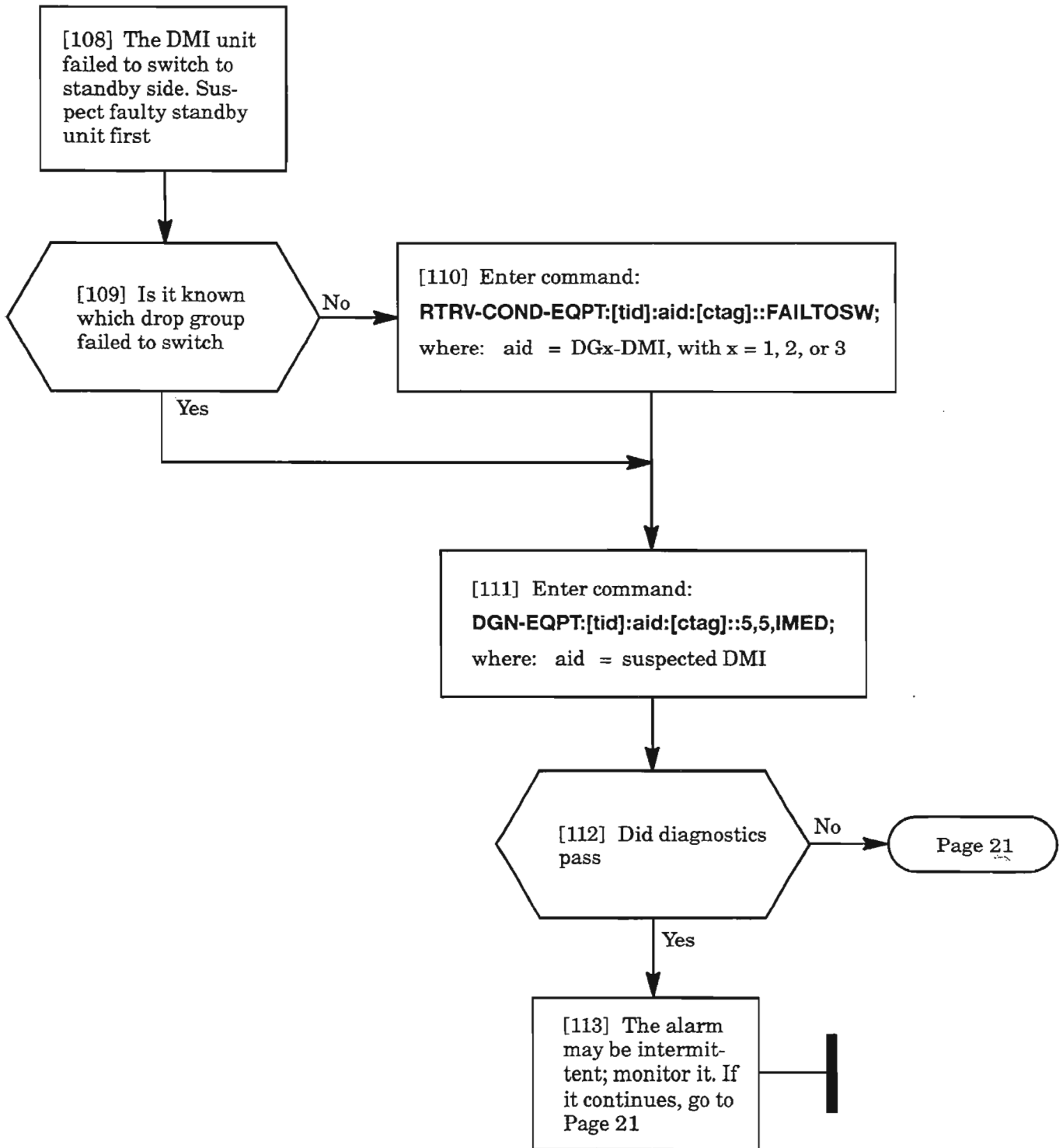
# CNTBUS



**CNTBUS (cont)**

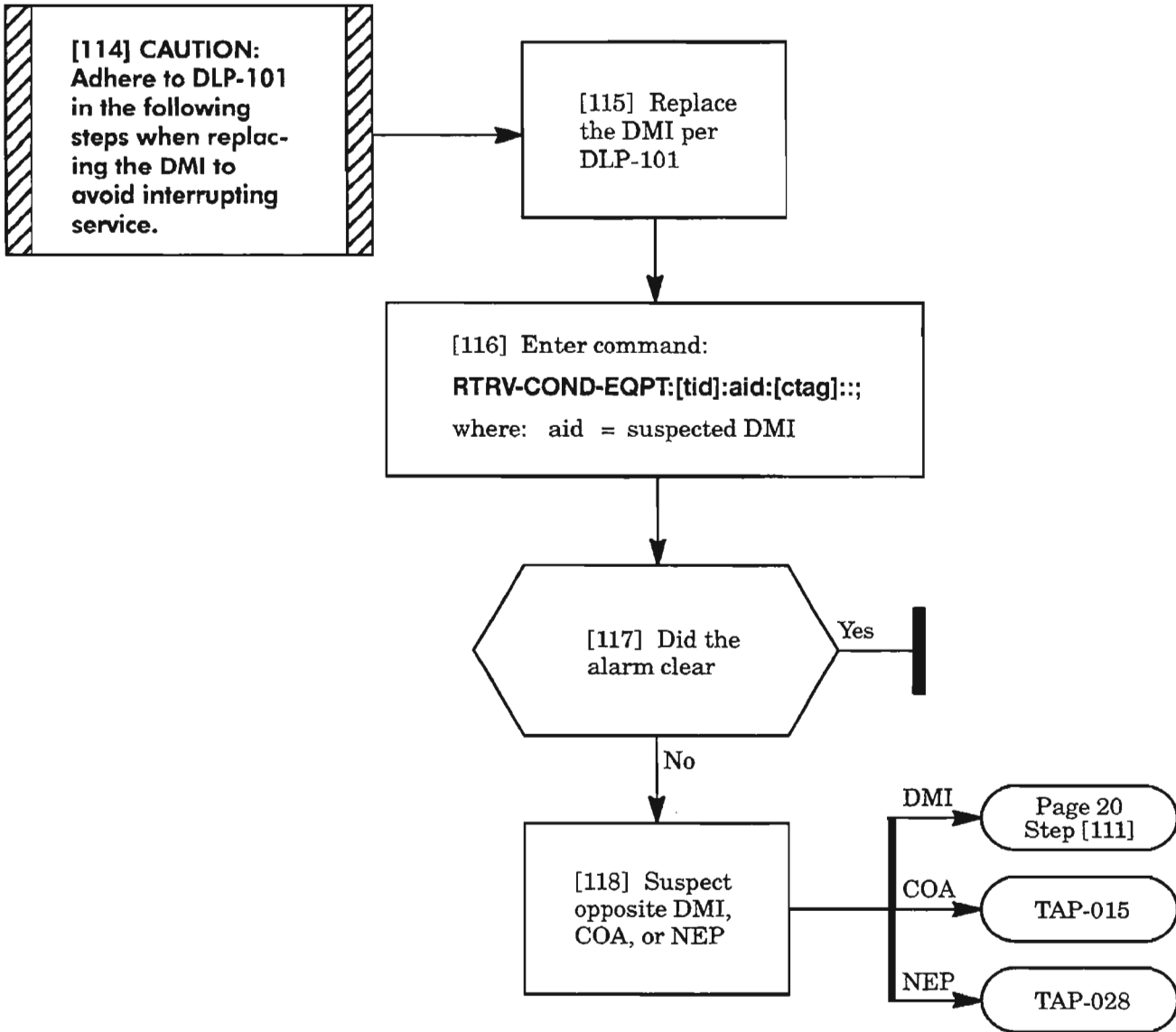


# FAILTOSW

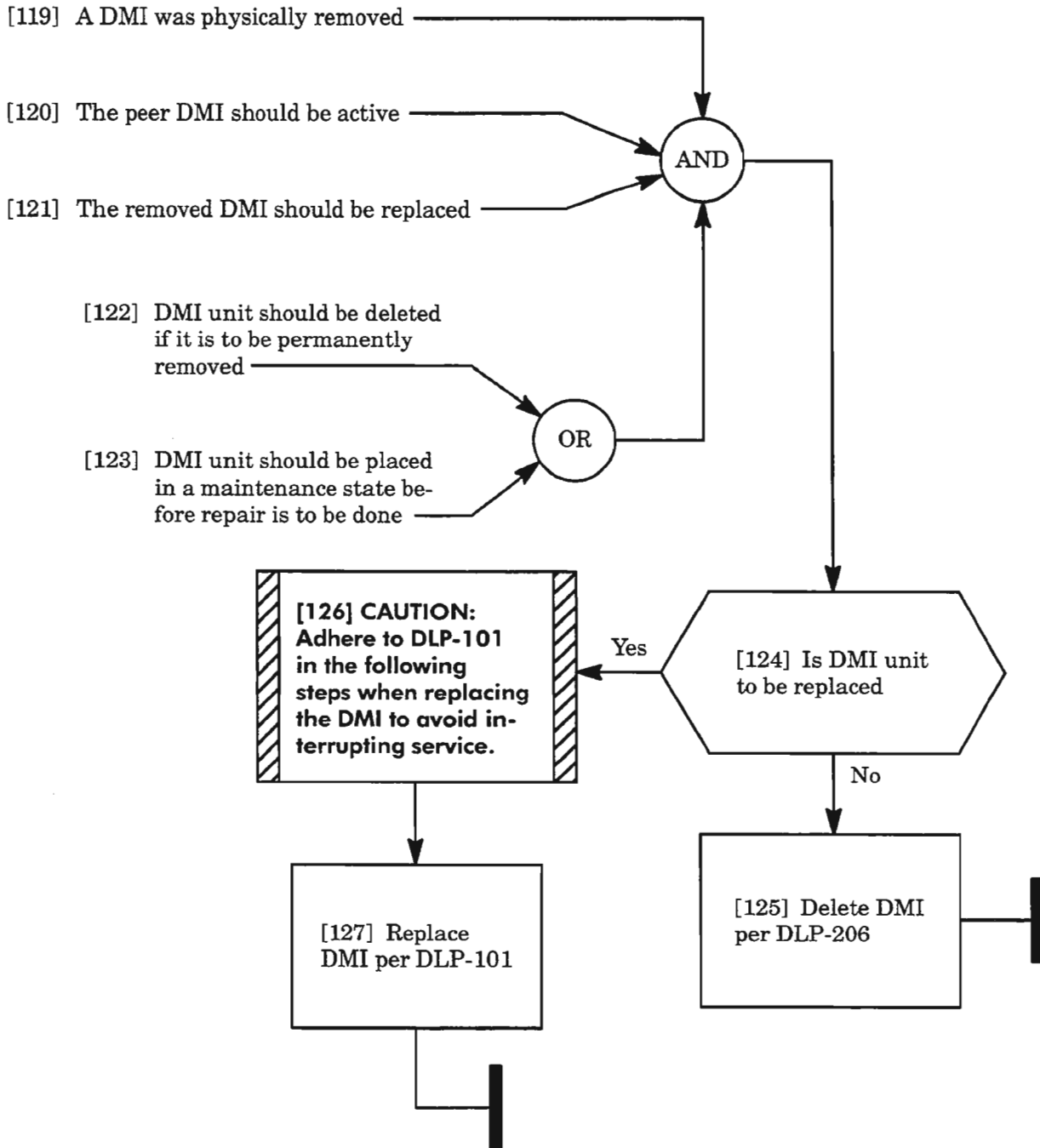


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 20 of 34	019

**FAILTOSW (cont)**



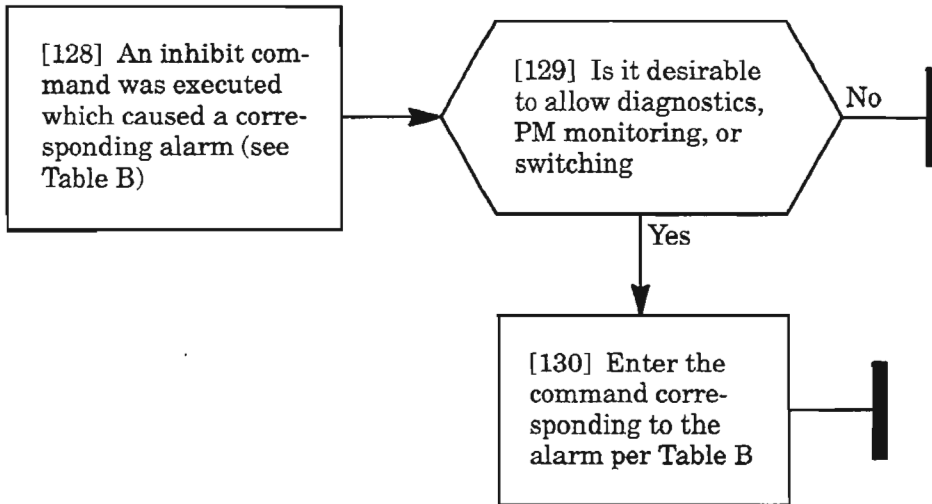
# IMPROPRMVL



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 22 of 34	019



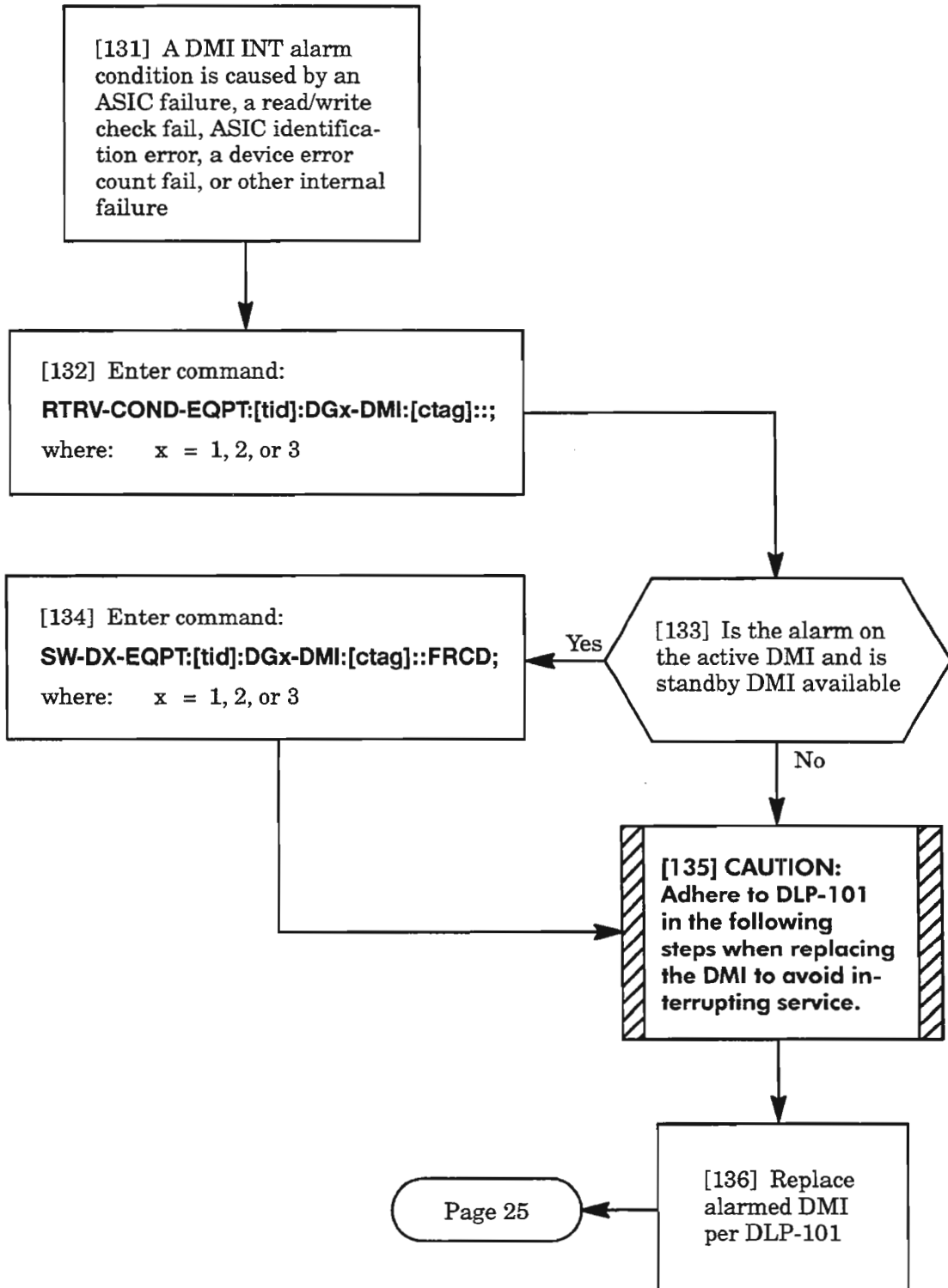
# INH DGN, INHPMREPT, INHSWDX



**Table B.**

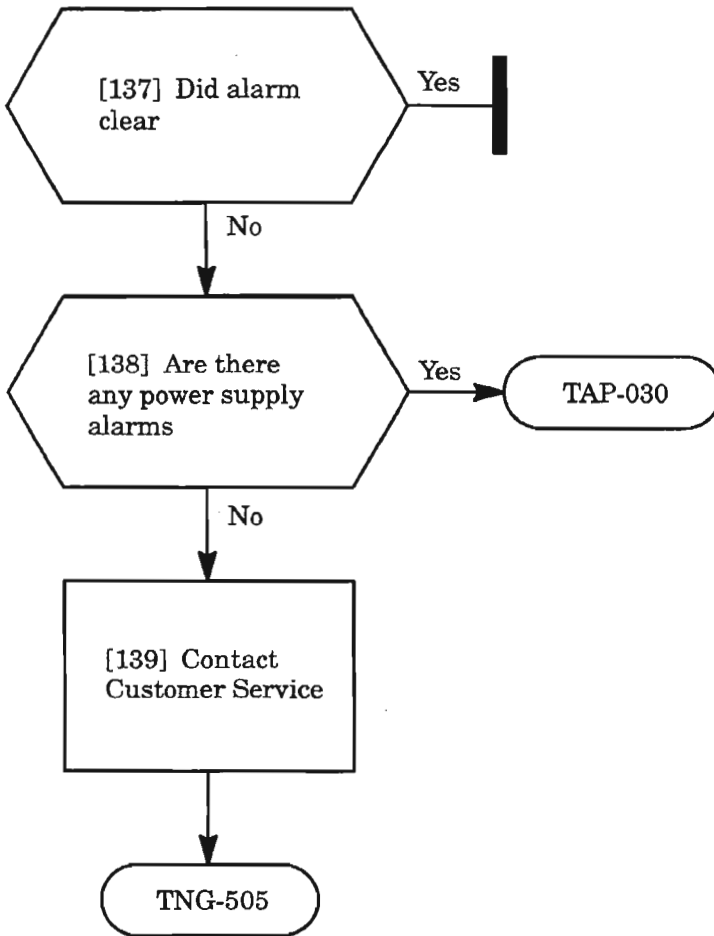
ALARM	COMMAND
INH DGN (inhibit diagnostics)	<b>ALW-DGN-EQPT:[tid]:aid:[ctag];</b> where: aid = DGx-DMly with x = 1, 2, or 3 and y = A or B
INHPMREPT (inhibit performance monitoring reporting)	<b>ALW-PMREPT-EQPT:[tid]:aid:[ctag];</b> where: aid = DGx-DMI with x = 1, 2, or 3
INHSWDX (inhibit duplex switching of unit to protection)	<b>ALW-SWDX-EQPT:[tid]:aid:[ctag];</b> where: aid = DGx-DMI with x = 1, 2, or 3

# INT

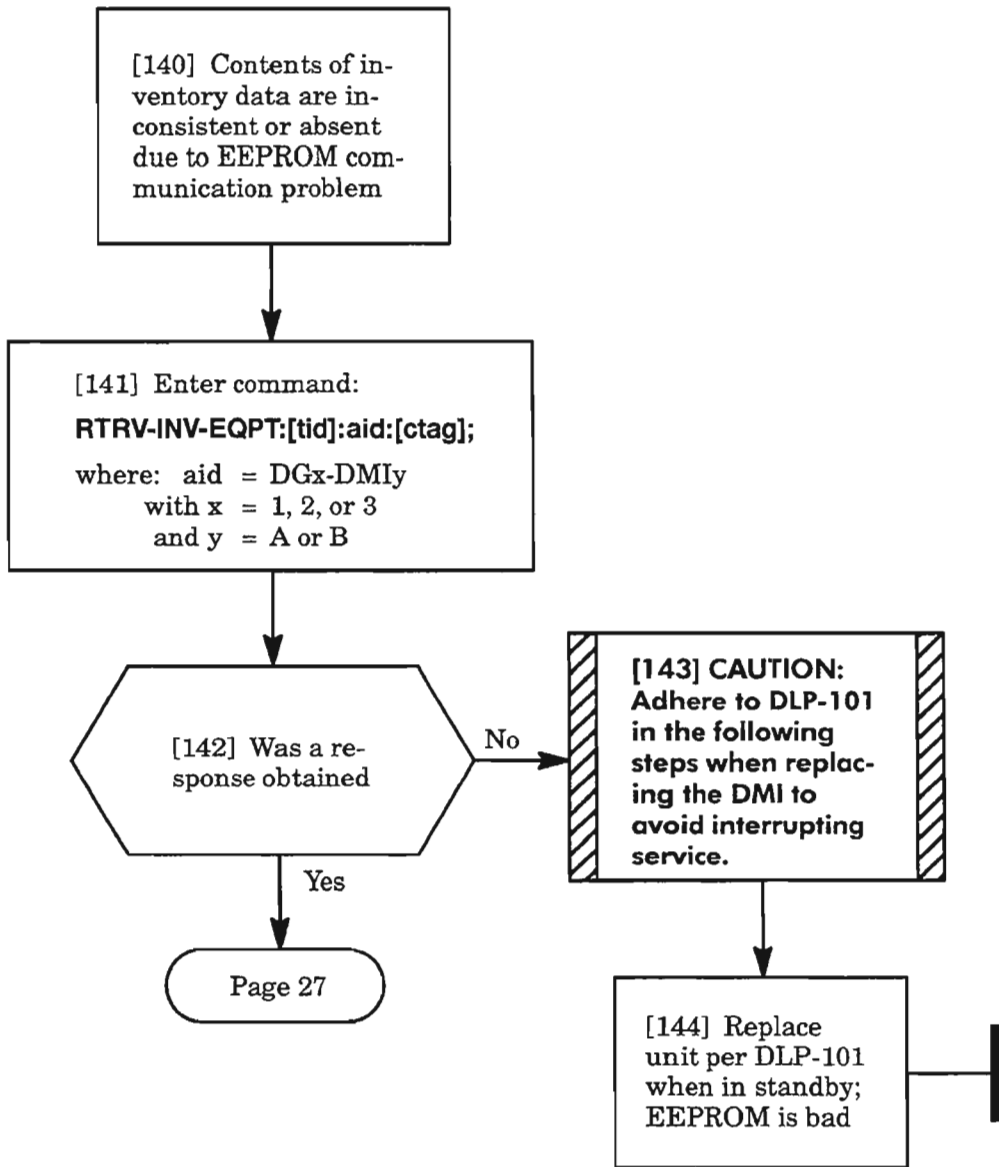


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 24 of 34	019

**INT (cont)**



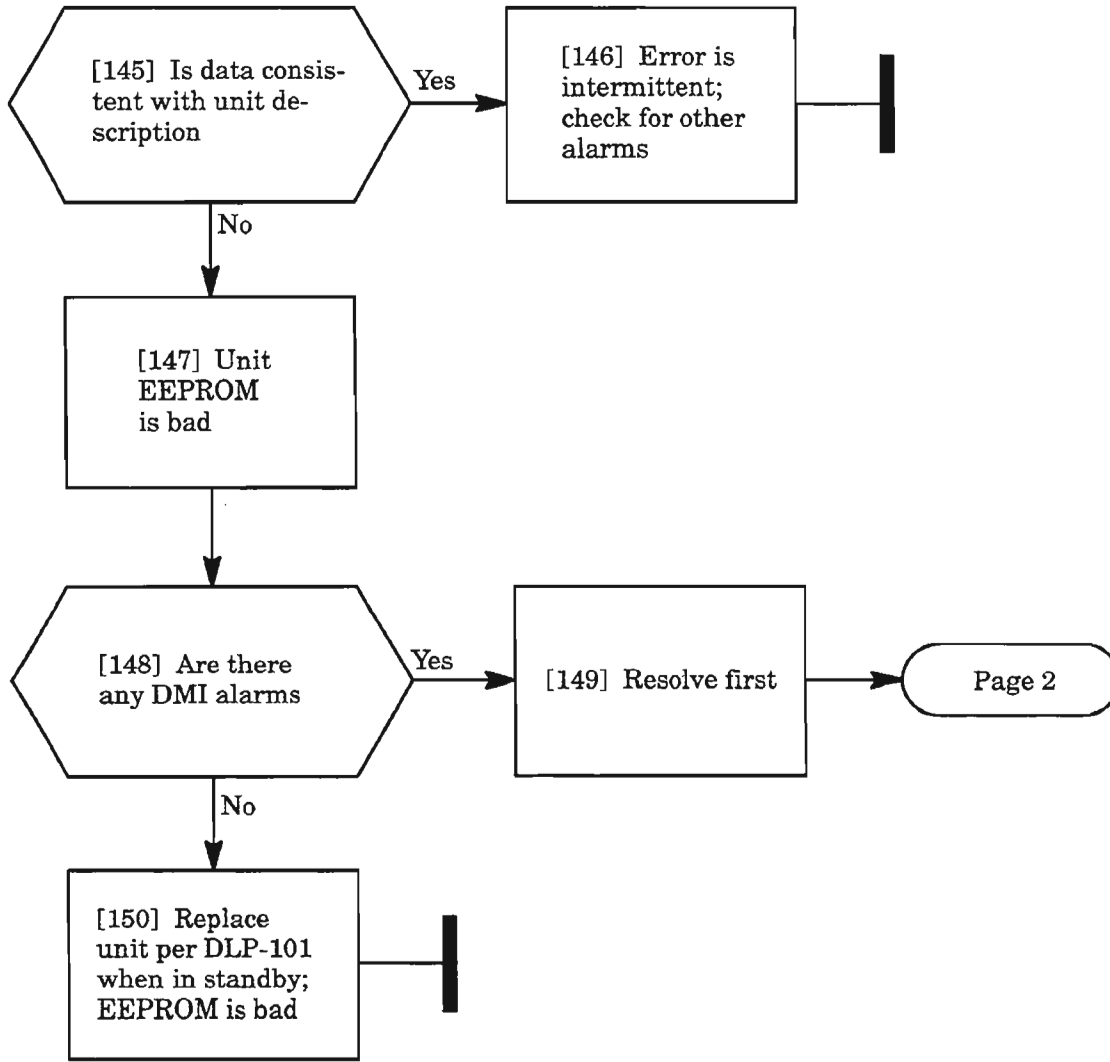
# INVERR



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 26 of 34	019

CLEAR DMI UNIT ALARM

**INVERR (cont)**



**CLEAR DMI UNIT ALARM**

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 27 of 34	019

**MEA**

[151] The data base entry for the alarmed unit does not match equipment type parameter on unit EEPROM

[152] Enter the following command:

**RTRV-INV-EQPT:[tid]:aid:[ctag];;**

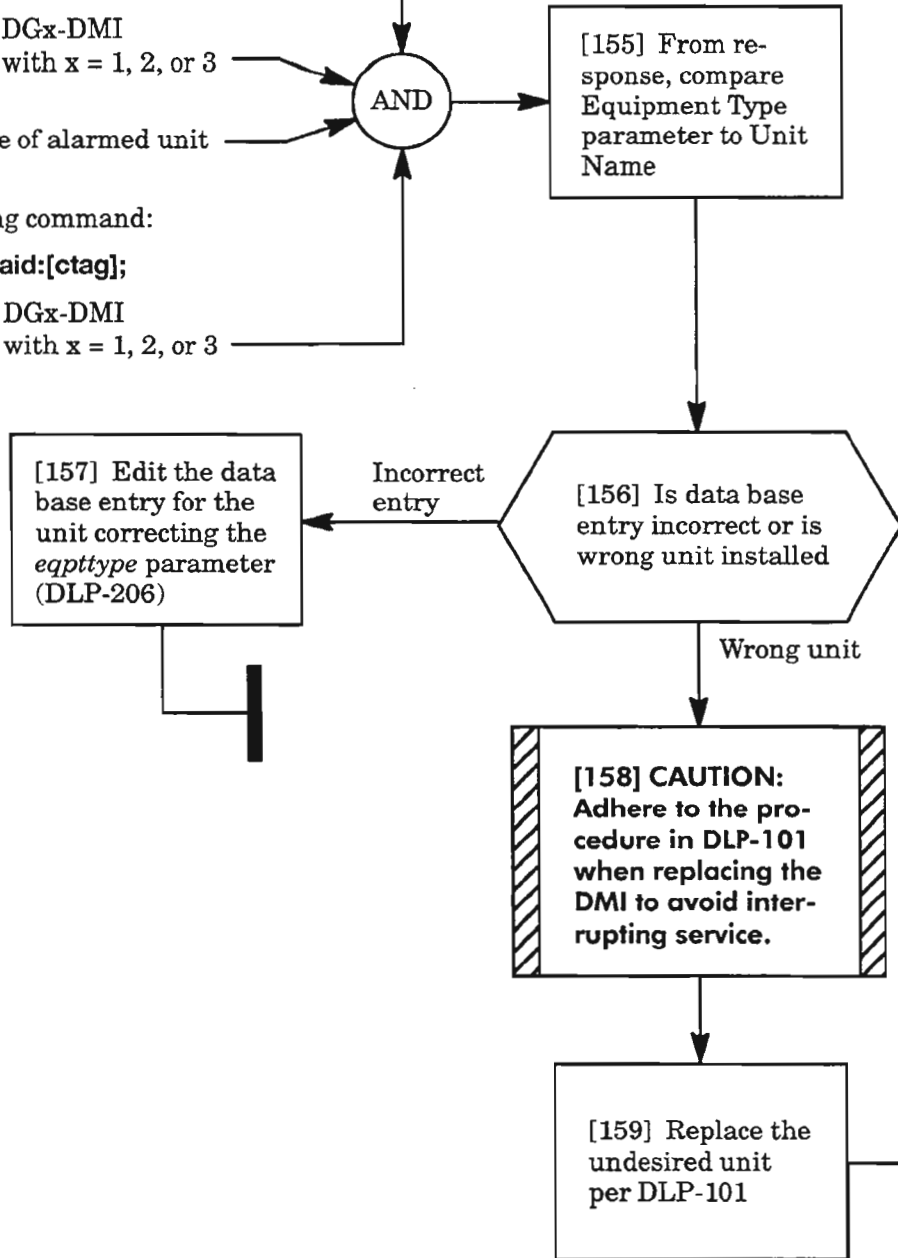
where: aid = DGx-DMI  
with x = 1, 2, or 3

[153] Record Unit Name of alarmed unit

[154] Enter the following command:

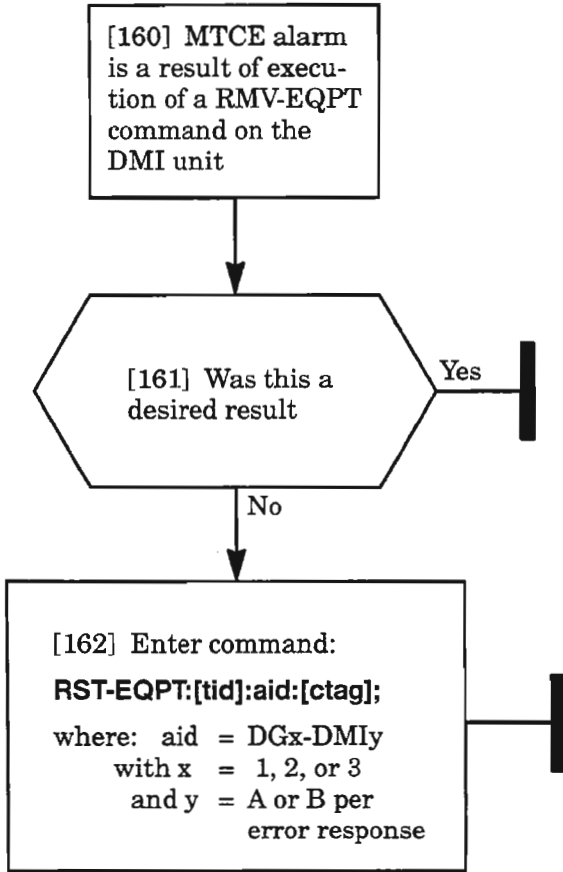
**RTRV-EQPT:[tid]:aid:[ctag];**

where: aid = DGx-DMI  
with x = 1, 2, or 3



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 28 of 34	019

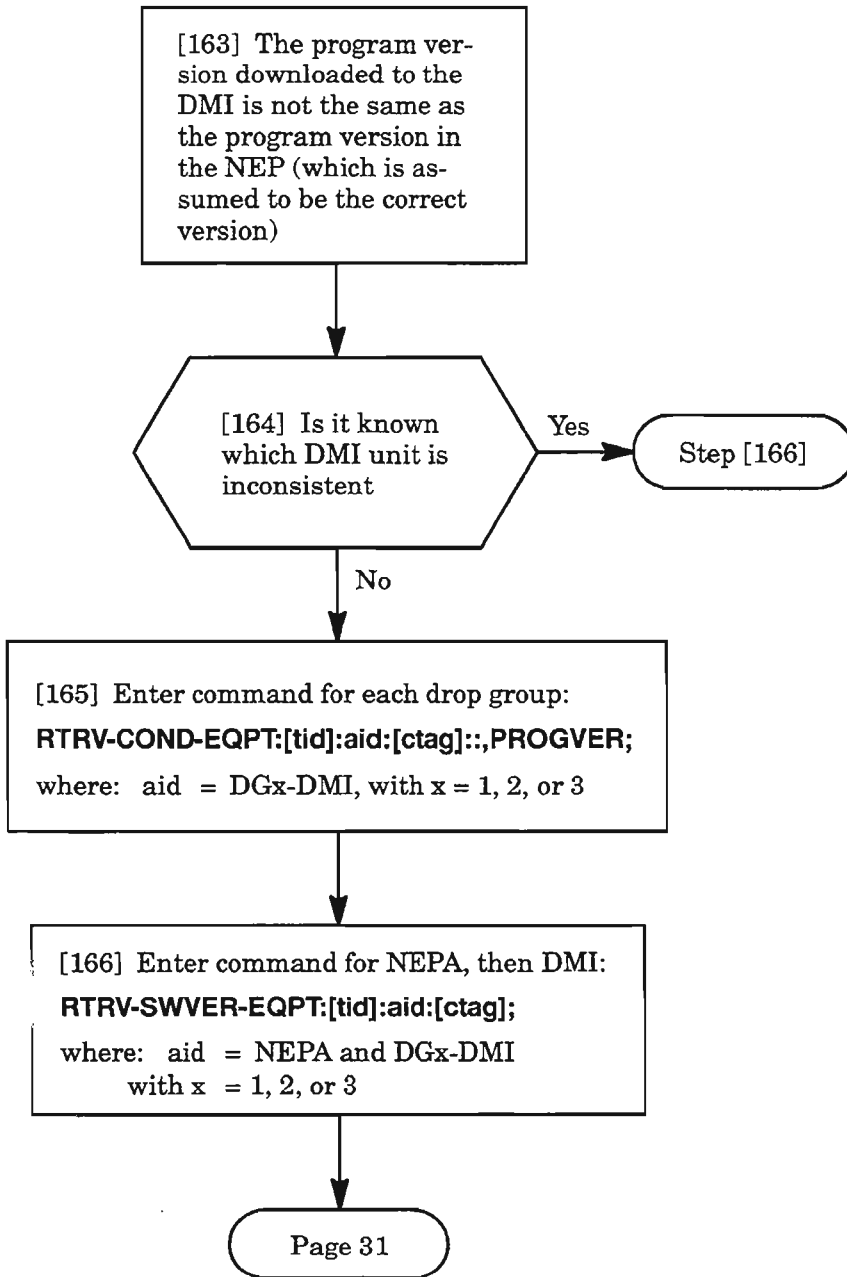
# MTCE



**CLEAR DMI UNIT ALARM**

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 29 of 34	019

# PROGVER

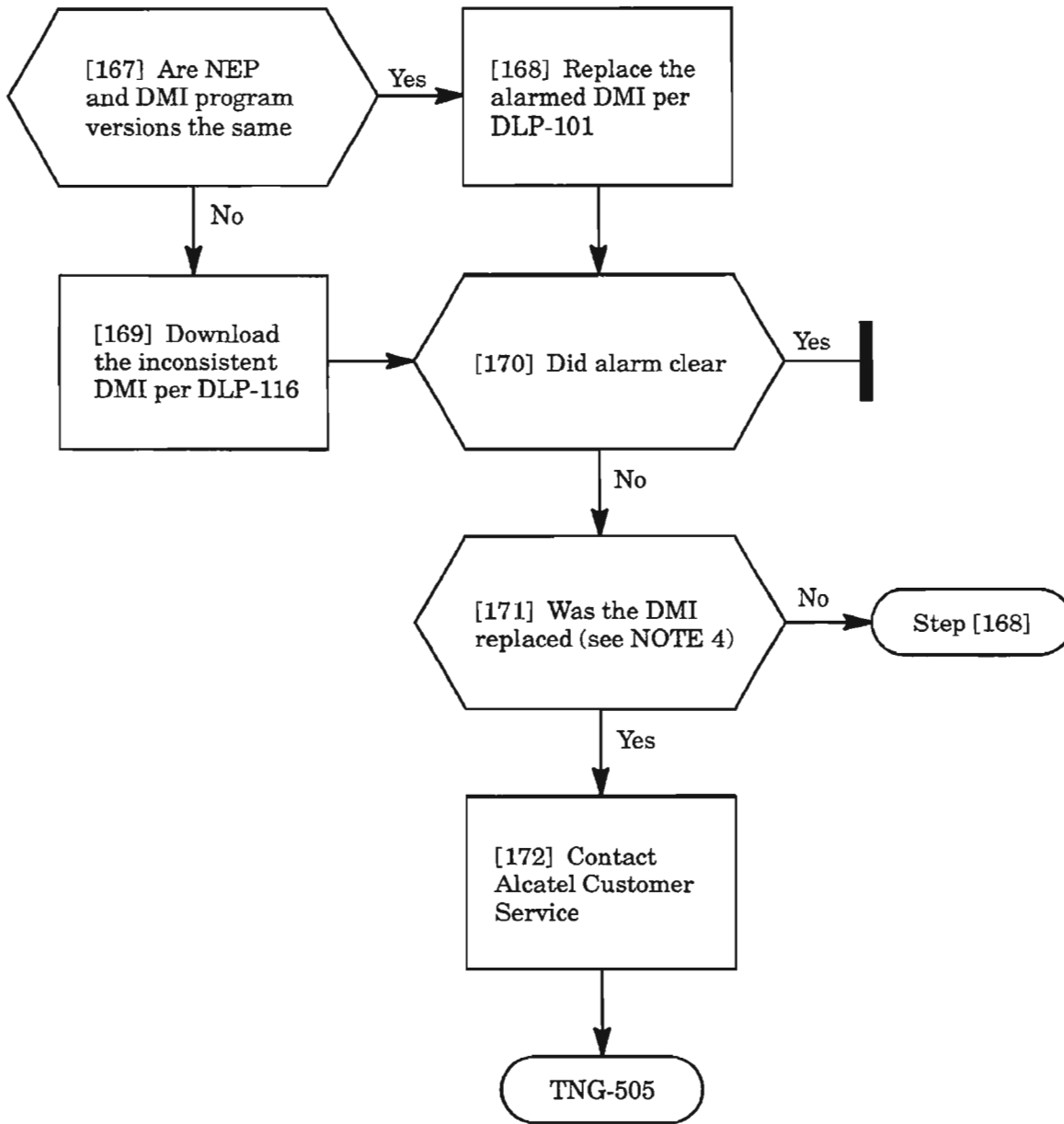


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 30 of 34	019

CLEAR DMI UNIT ALARM



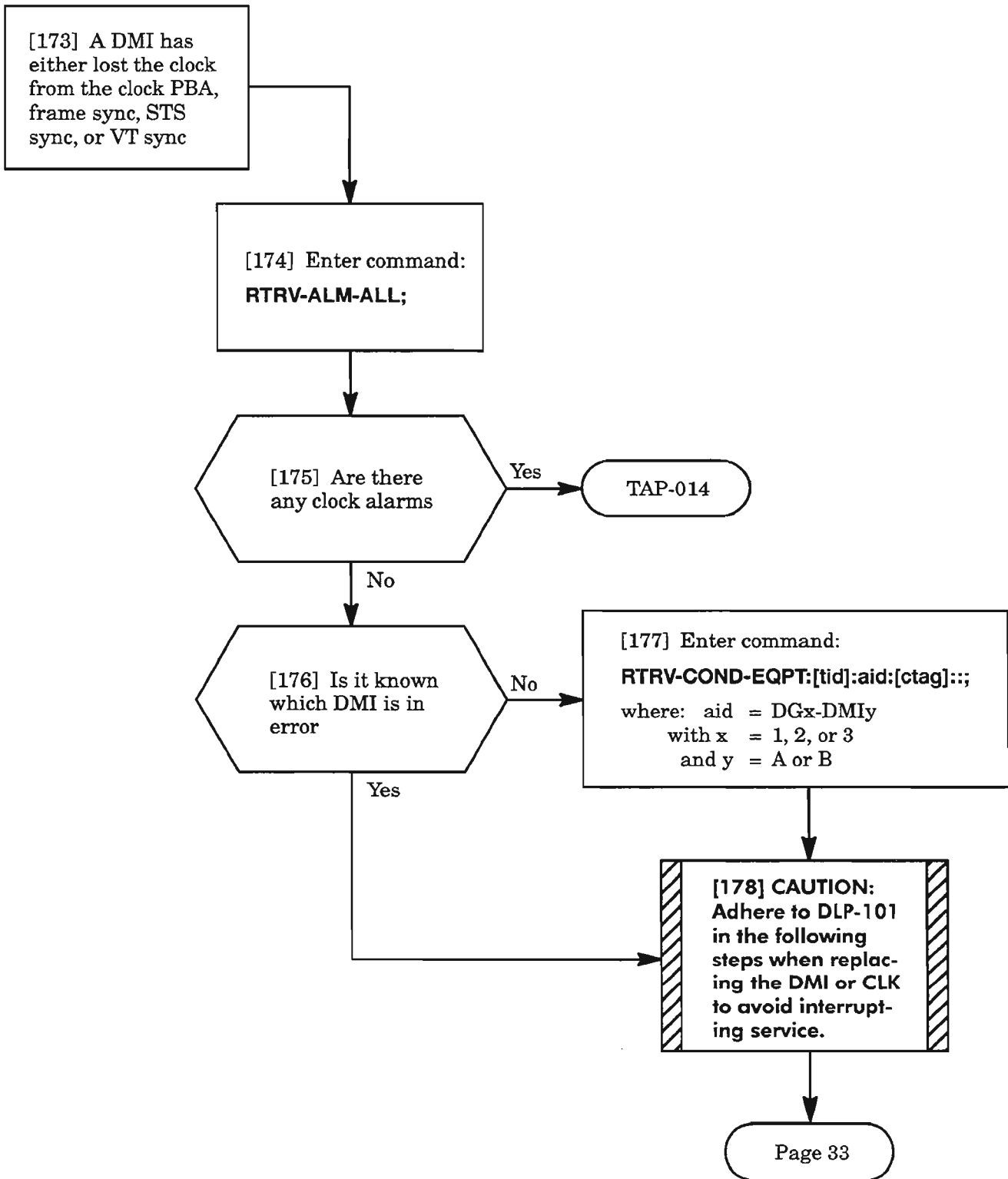
**PROGVER (cont)**



**NOTE: 4.** *If DMI was replaced and downloaded with the correct version, then the NEP may be the wrong version. Verify records.*

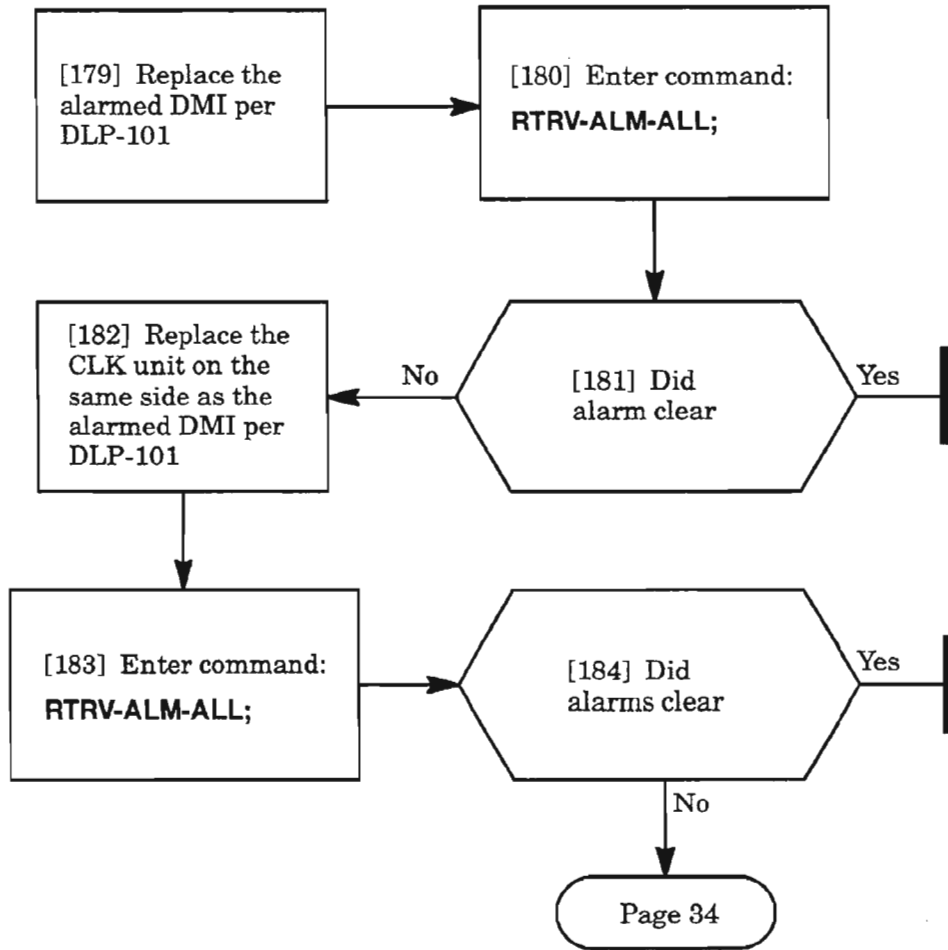
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 31 of 34	019

# SYNCCLK

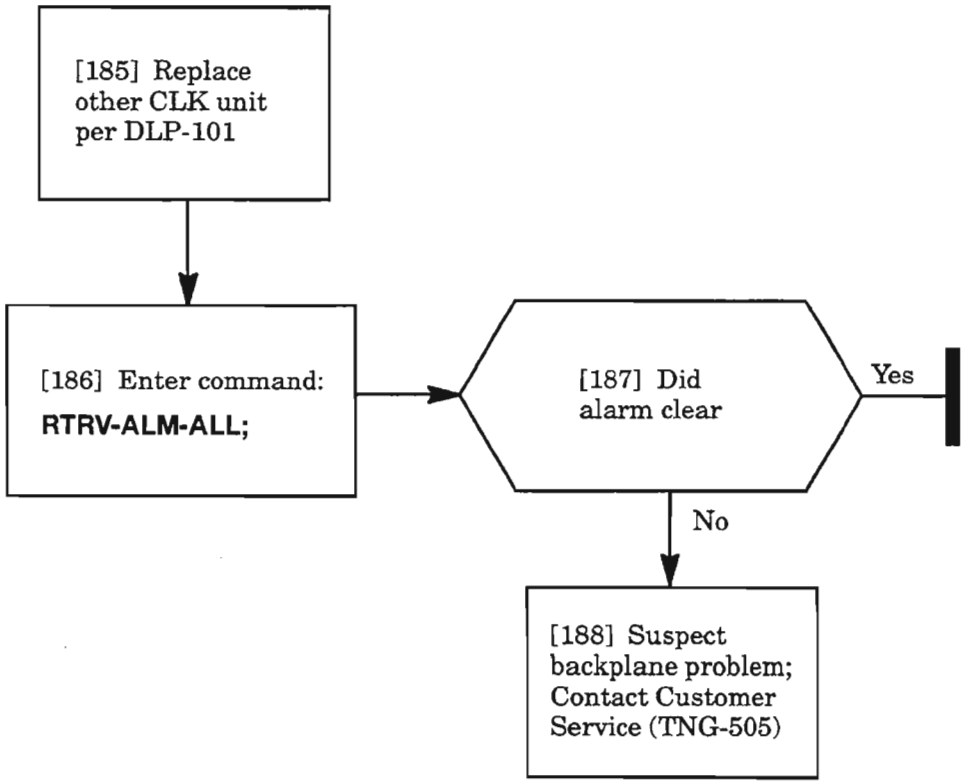


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP 019
PAGE 32 of 34	

# SYNCCLK (cont)



# SYNCCLK (cont)



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 34 of 34	019

**CLEAR DMI UNIT ALARM**

[1] See NOTE 1. An ENV alarm indicates that an environmental alarm has been detected on one of the CDAC alarm inputs on the 1603/12 SM backplane

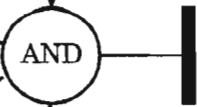
[2] Enter the following command:

**RTRV-ALM-ENV:[tid]:ALL:[ctag];**

See GENERAL EXPLANATION, Page 2, for explanation of command response

[3] From the response, note the severity level (CR, MJ or MN) and the alarm name

[4] Go to the NE and resolve alarm condition per local procedure



**NOTE:** 1. The environmental alarm input is a Customer-Defined Alarms and Control (CDAC) feature.

**CLEAR ENV ALARM**

ISSUE 1	JULY 1994
ALCL 363-203-502	TAP
PAGE 1 of 2	020

### GENERAL EXPLANATION

#### RESPONSE (RTRV-ALM-ENV)

```
sid yy-mm-dd hh:mm:ss
M ctag COMPLD
/* RTRV-ALM-ENV:[tid]:ALL:[ctag]; */
"aidenv:ntfcncde,envname"
;
```

#### PARAMETER EXPLANATION

**sid** System Identification Code of the Network Element (NE)

**yy-mm-dd** Last two digits of the year – month of the year – day of the month

**hh:mm:ss** Hour of the day; minutes of the hour; seconds of the minute

**aidenv** Access identification code. The format and values are:  
ENV-envnum (ENV-alarm input number)  
where: envnum = 1...12 (alarm input number)

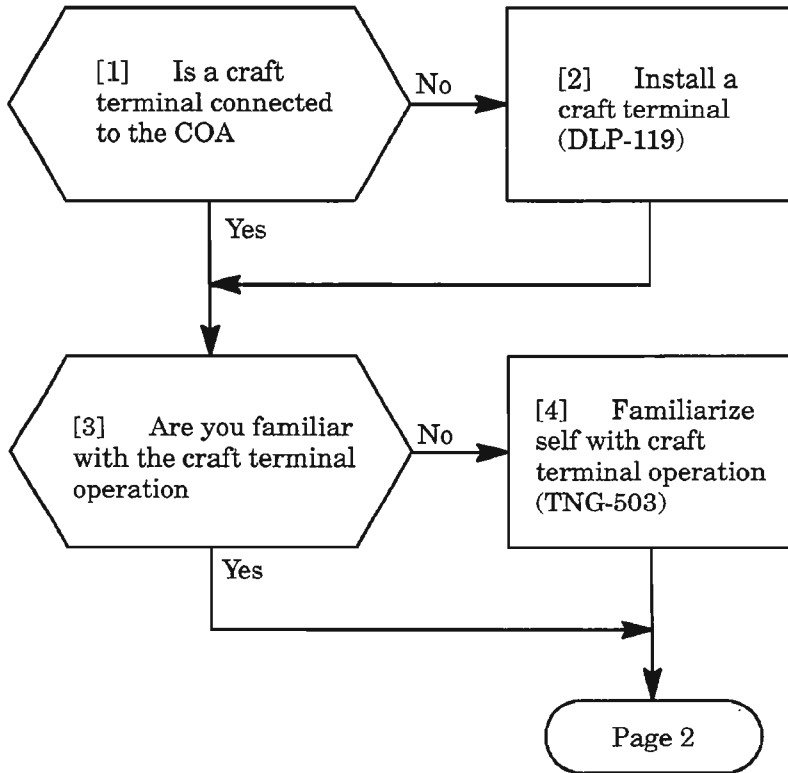
**ntfcncde** Alarm notification code

- CR** Critical alarm
- MJ** Major alarm
- MN** Minor alarm

**envname** Environmental alarm name; 1-10 character string (customer-defined)

ISSUE 1	JULY 1994
ALCL 363-203-502	TAP
PAGE 2 of 2	020

CLEAR ENV ALARM



[5] Enter command:

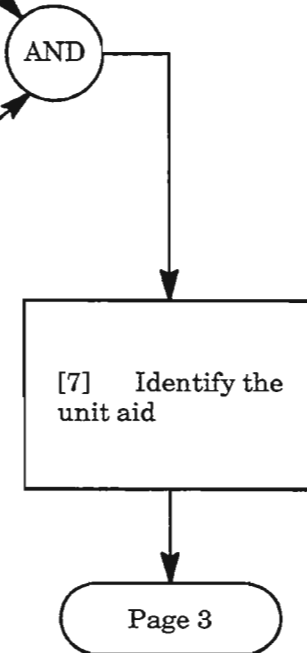
**RTRV-ALM-EQPT:[tid]:aid:[ctag]::;**

where: aid = ALL or select

where: aid = COA, NEP, NEPA, NEPB (future),  
VSCC, VSCCA, VSCCB,  
CLK, CLKA, CLKB,  
PWR, PWRA, PWRB, PWRC;  
DGx-DMI, DGx-DMIA,  
DGx-DMIB (where x = 1 - 3);  
DGx-LDR, DGx-LDRA,  
DGx-LDRB (where x = 1 - 3);  
DGx-LIF, DGx-LIFA,  
DGx-LIFB (where x = 1 - 3);  
DGx-VTG-y (where x = 1 - 3, and  
y = 1 - 7); and/or DGx-VTG-P  
LGx-HIF, LGx-HIFA,  
LGx-HIFB (where x = 1 - 2);

[6] Analyze response portion:

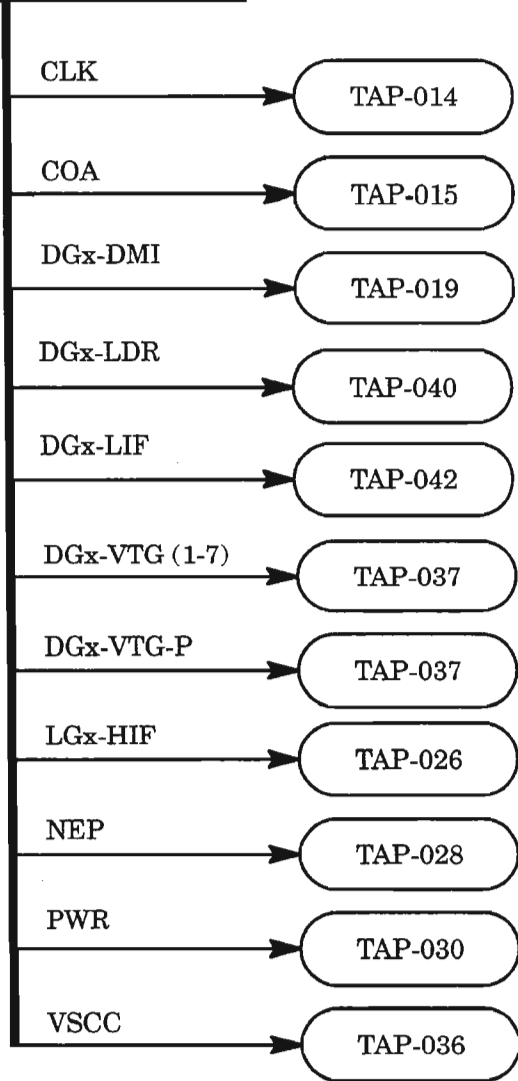
“aid,aidtype:ntfncde,condeqpt,  
srveff:[conddescr],[aiddet],[tblist]”



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 3	021



[8] Go to applicable TAP per identified unit aid (see NOTE 1)

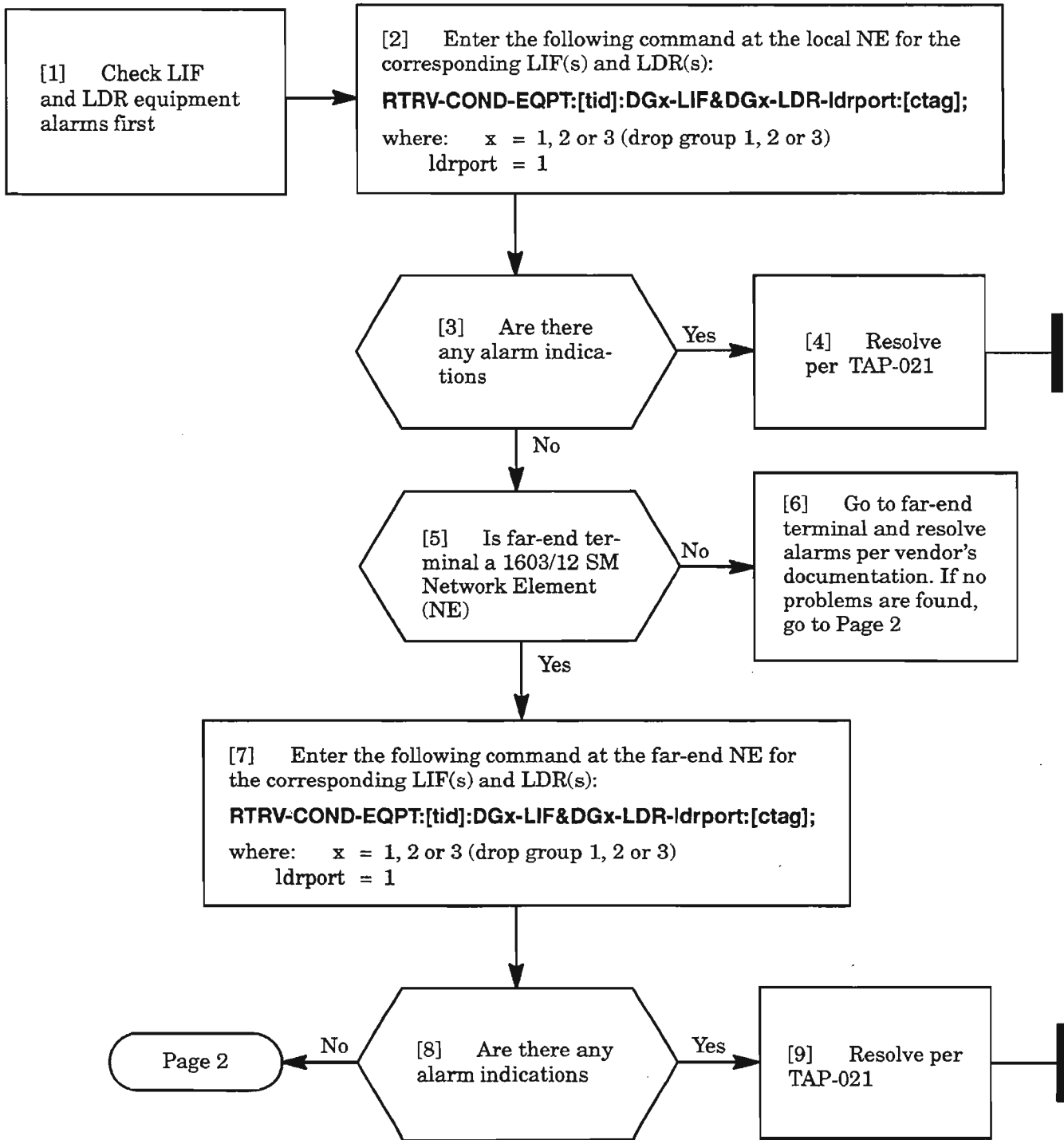


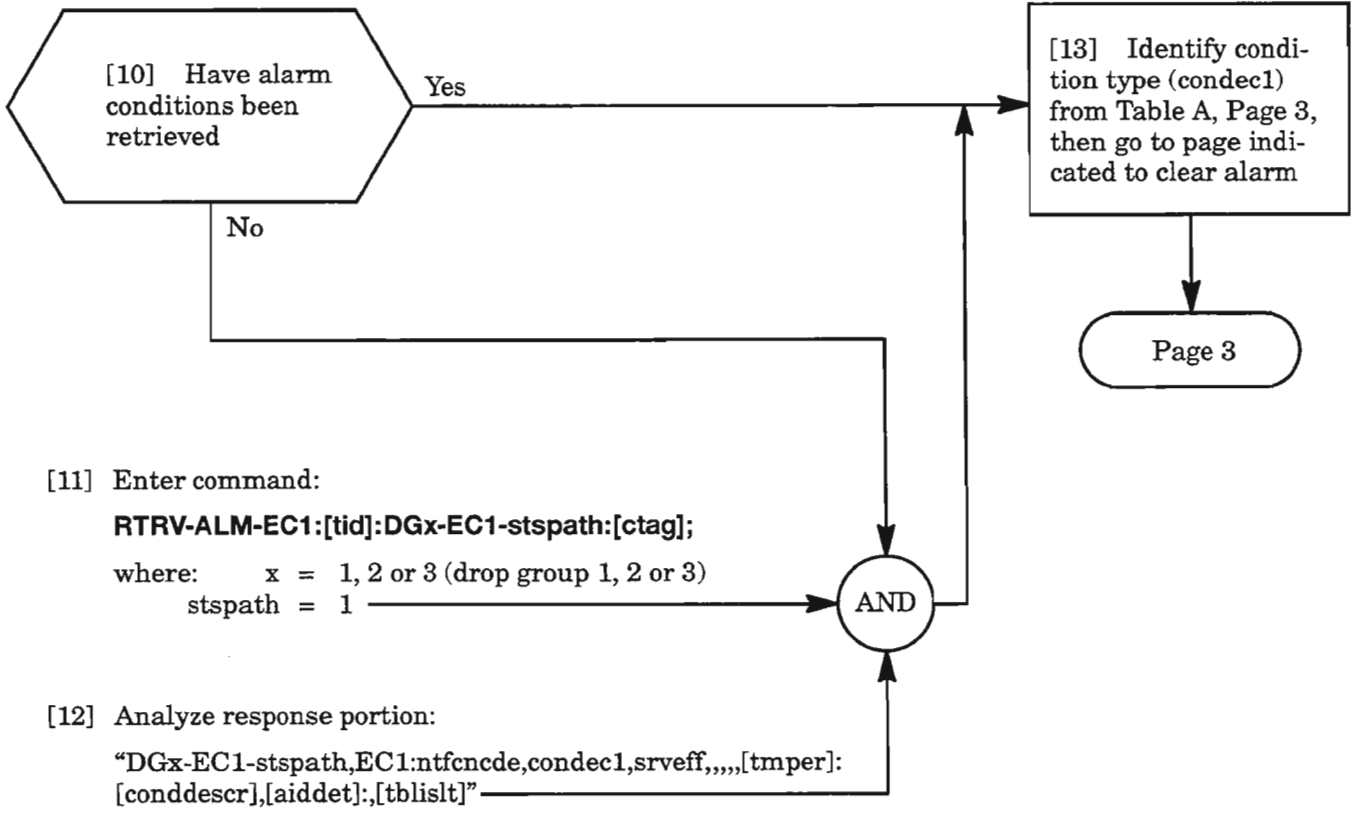
**NOTE:** 1. All unit alarms also are indicated on the COA unit by severity level (CR, MJ, MN). If there is a COA CONTCOM and an NEP alarm, do the COA first.

**CLEAR EQPT ALARMS (IDENTIFY)**

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 3 of 3	021







ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 2 of 23	022

**CLEAR EC1 ALARM**

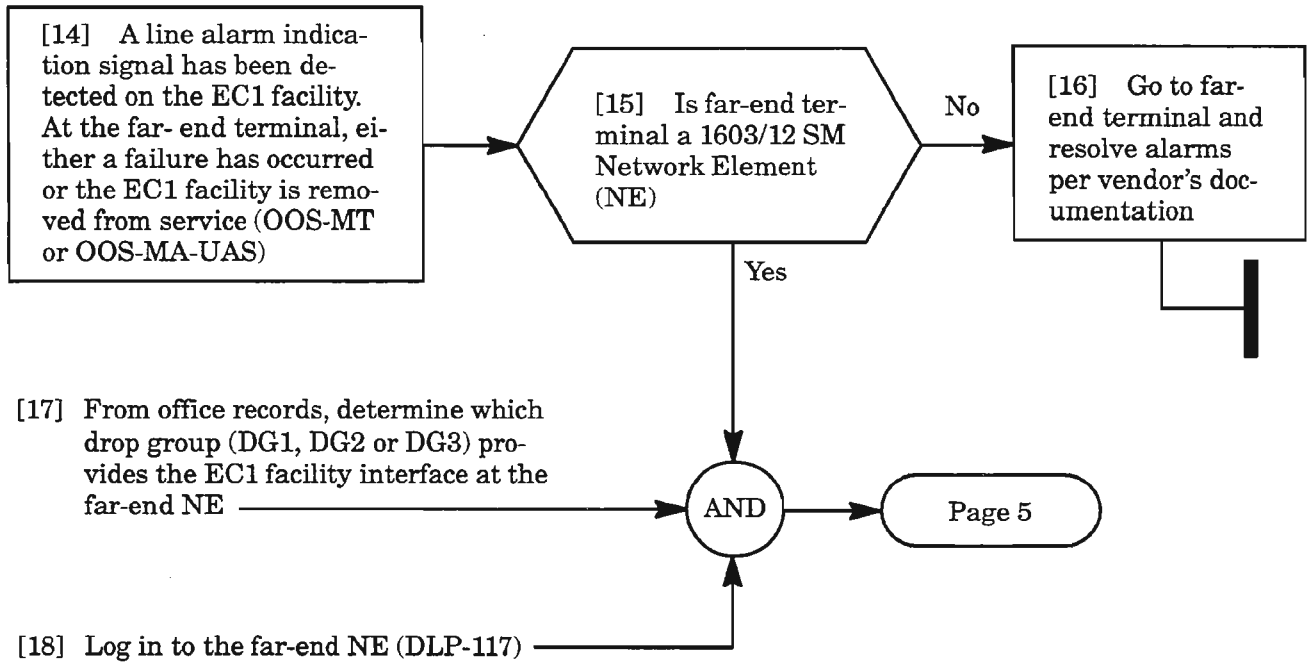
**Table A. Conditions**

<b>CONDITION/ALARM</b>	<b>DEFINITION</b>	<b>PAGE</b>
AISL	Line alarm indication signal	4
APSB	APS byte failure	6
BERL-HT	Bit Error Rate Line – High Threshold crossed	9
BERL-LT	Bit Error Ratio Line – Low Threshold crossed	9
FERF	Far-end receiver failure	13
INHMPREPT	Inhibit all scheduled PM reports	14
LOF	Loss of frame	15
LOS	Loss of signal	15
MTCE	Removed from service for maintenance	19
T-CVL	Threshold counter for PM line Coding violations	20
T-CVS	Threshold counter for PM section Coding violations	20
T-BPV	Threshold violation for bipolar violations	20
T-ESL	Threshold violation for PM line errored seconds	20
T-ESS	Threshold violation for PM section errored seconds	20
T-SEFS	Threshold violation for PM severely errored framing seconds	20
T-SESL	Threshold violation for PM line severely errored seconds	20
T-SESS	Threshold violation for PM section severely errored seconds	20
T-UASL	Threshold violation for PM line unavailable seconds	20

**CLEAR ECT ALARM**

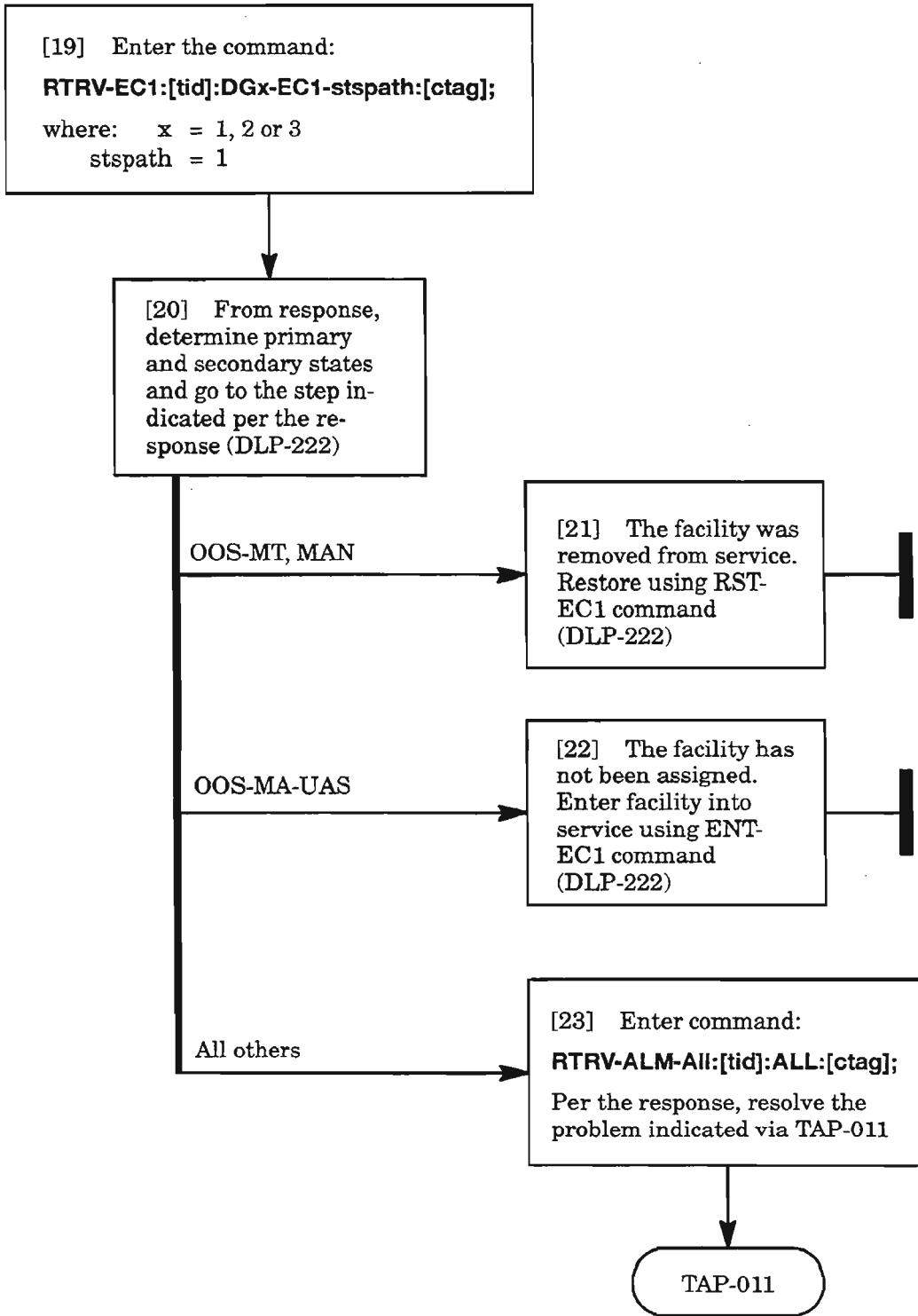
<b>ISSUE 2</b>	<b>JULY 1994</b>
<b>ALCL 363-203-502</b>	<b>TAP</b>
<b>PAGE 3 of 23</b>	<b>022</b>

**AISL**

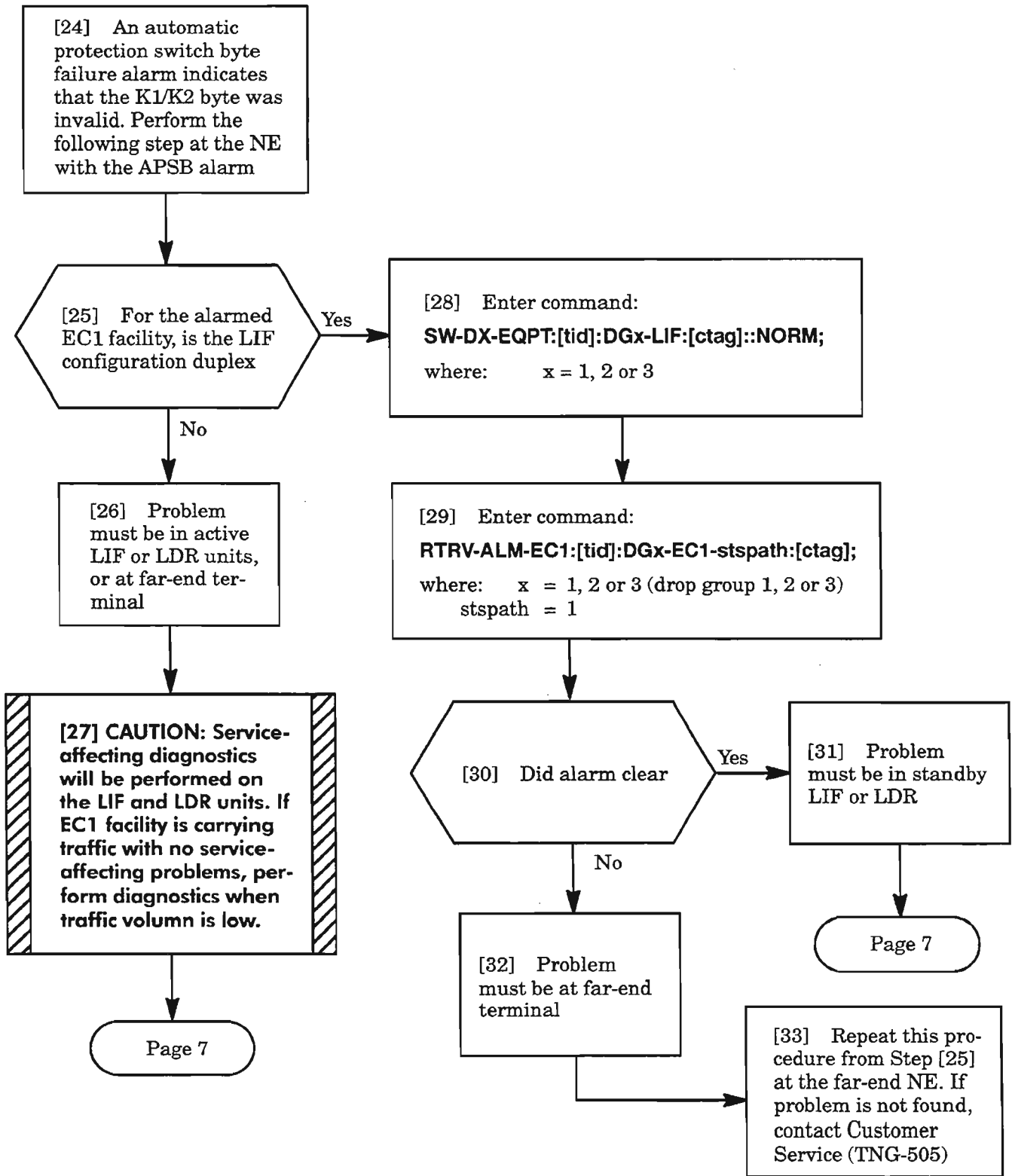


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 23	022

**AISL (cont)**



# APSB



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 23	022



**APSB (cont)**

**[34] CAUTION:** The following steps are service-affecting if performed on the active LIF. Perform the following on standby side if LIF and LDR are duplex.

[35] Enter the following commands for the standby LIF (duplex) or active LIF (simplex):

**RMV-EQPT:[tid]:DGx-lifab:[ctag];**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

[36] Enter command:

**DGN-EQPT;:[tid]:DGx-lifab:[ctag]::9,5,IMED;**

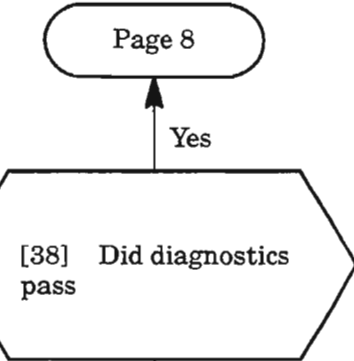
where: x = 1, 2 or 3  
lifab = LIFA or LIFB

[37] Enter command:

**RST-EQPT:[tid]:DGx-lifab:[ctag];**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

AND



**[39] CAUTION:** Adhere to the procedure in DLP-101 when replacing the LIF to avoid service interruption.

[40] Replace LIF per DLP-101

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 7 of 23	022

**APSB (cont)**

**[41] CAUTION:** The following steps are service-affecting if performed on the active LDR. Perform the following on standby side if LIF and LDR are duplex.

[42] Enter the following commands for the standby LDR (duplex) or active LDR (simplex):

**RMV-EQPT:[tid]:DGx-ldrab-ldrport:[ctag];**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

[43] Enter command:

**DGN-EQPT:;[tid]:DGx-ldrab-ldrport:[ctag]::4,5,IMED;**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

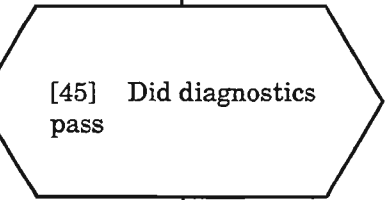
[44] Enter command:

**RST-EQPT:[tid]:DGx-ldrab-ldrport:[ctag];**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1



[48] Repeat this procedure from Step [25] at the far-end NE. If problem is not found, contact Customer Service (TNG-505)



**[46] CAUTION:** Adhere to the procedure in DLP-101 when replacing the LDR to avoid service interruption.

[47] Replace LDR per DLP-101

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 8 of 23	022

**CLEAR EC1 ALARM**

# BERL-HT, BERL-LT

[49] The EC1 facility has detected a BERL-HT; the number of bits in error to the number of bits transmitted has degraded to the point of exceeding a set threshold,  $10^{-5}$  to  $10^{-9}$  (signal failure is imminent)

[50] The EC1 facility has detected a BERL-LT, a bit error ratio exceeding a threshold setting between  $10^{-3}$  to  $10^{-4}$

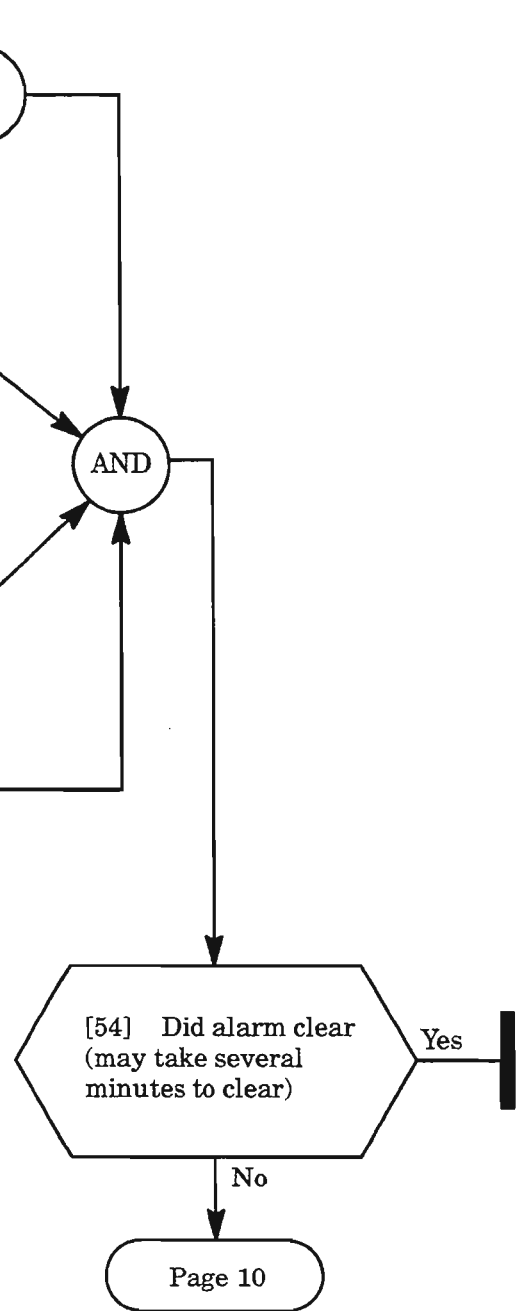
[51] Check coax cable connections at 1603/12 SM back-plane and cross-connection panel. Correct connections, if necessary

[52] If connections are correct, **at far-end NE**, retrieve EC1 port parameters by entering the command:

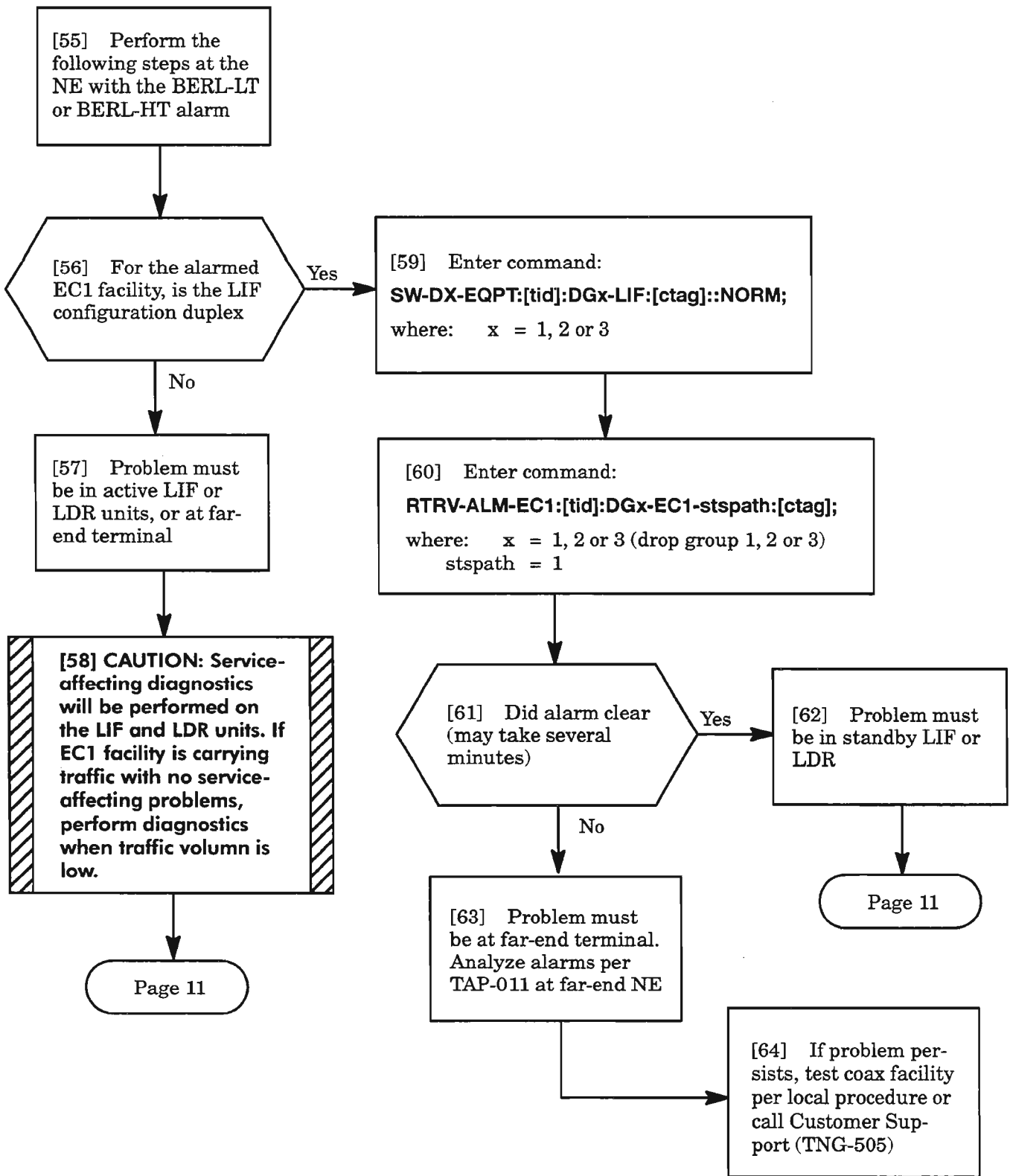
**RTRV-EC1:[tid]:DGx-EC1-stspath;**

where: x = 1, 2 or 3 (drop group 1, 2 or 3)  
stspath = 1

[53] From the response, verify that LINEBLDOUT is enabled or disabled per office records (see DLP-222 for recommended setting based on cable types). If LINEBLDOUT parameter needs to be changed, edit the port per DLP-222



**BERL-HT, BERL-LT (cont)**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 23	022

**BERL-HT, BERL-LT (cont)**

**[65] CAUTION:** The following steps are service-affecting if performed on the active LIF. Perform the following on standby side if LIF and LDR are duplex.

[66] Enter the following commands for the standby LIF (duplex) or active LIF (simplex):

**RMV-EQPT:[tid]:DGx-lifab:[ctag];**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

[67] Enter command:

**DGN-EQPT;:[tid]:DGx-lifab:[ctag]::11,5,IMED;**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

[68] Enter command:

**RST-EQPT:[tid]:DGx-lifab:[ctag];**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

AND

Page 12

[69] Did diagnostics pass

Yes

No

**[70] CAUTION:** Adhere to the procedure in DLP-101 when replacing the LIF to avoid service interruption.

[71] Replace LIF per DLP-101



**BERL-HT, BERL-LT (cont)**

**[72] CAUTION:** The following steps are service-affecting if performed on the active LDR. Perform the following on standby side if LIF and LDR are duplex.

[73] Enter the following commands for the standby LDR (duplex) or active LDR (simplex):

**RMV-EQPT:[tid]:DGx-ldrab-ldrport:[ctag];**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

[74] Enter command:

**DGN-EQPT;:[tid]:DGx-ldrab-ldrport:[ctag]::9,5,IMED;**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

[75] Enter command:

**RST-EQPT:[tid]:DGx-ldrab-ldrport:[ctag];**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

AND

Step [63]  
Page 10

[76] Did diagnostics pass

**[77] CAUTION:** Adhere to the procedure in DLP-101 when replacing the LDR to avoid service interruption.

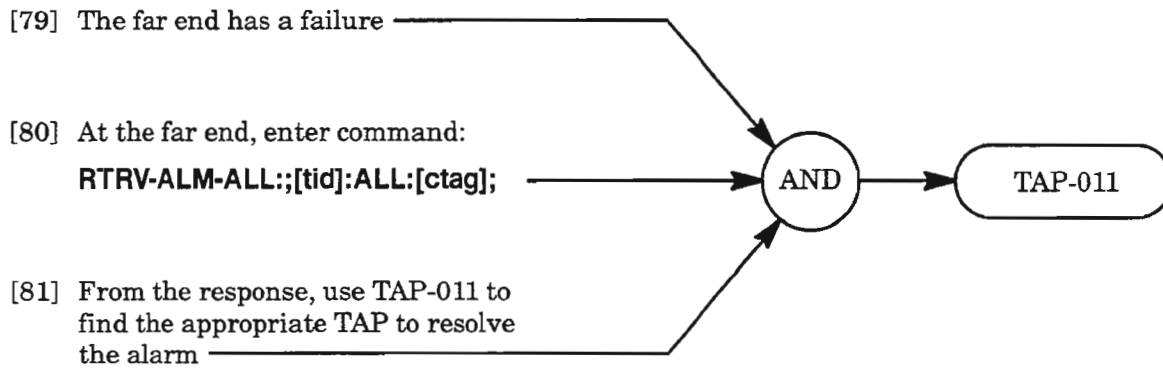
[78] Replace LDR per DLP-101



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 23	022

**CLEAR EC1 ALARM**

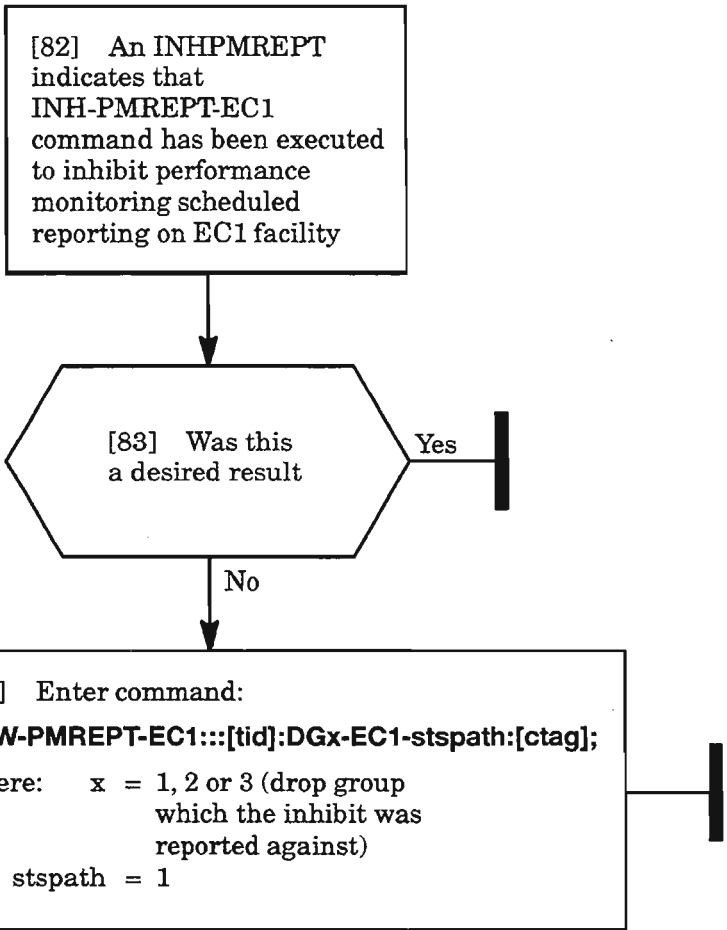
# FERF



CLEAR EC1 ALARM

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 13 of 23	022

# INHMPREPT



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 14 of 23	022

CLEAR EC1 ALARM



# LOF/LOS

[85] A unit has detected an LOF or an LOS alarm. The LOF (Loss of Frame) indicates that an out-of-frame condition has persisted for more than 3 ms. The LOS (Loss of Signal) indicates loss of a receive signal, an all zeros pattern for over 100 ms, or that clock recovery is lost. A poor coax connection may cause this error

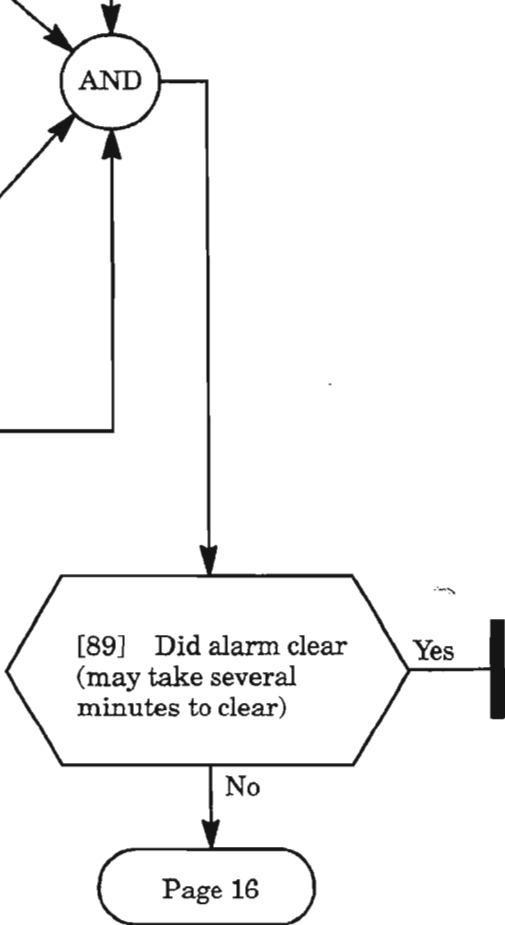
[86] Check coax cable connections at 1603/12 SM backplane and cross-connection panel. Correct connections, if necessary

[87] If connections are correct, **at the far-end NE**, retrieve EC1 port parameters by entering the command:

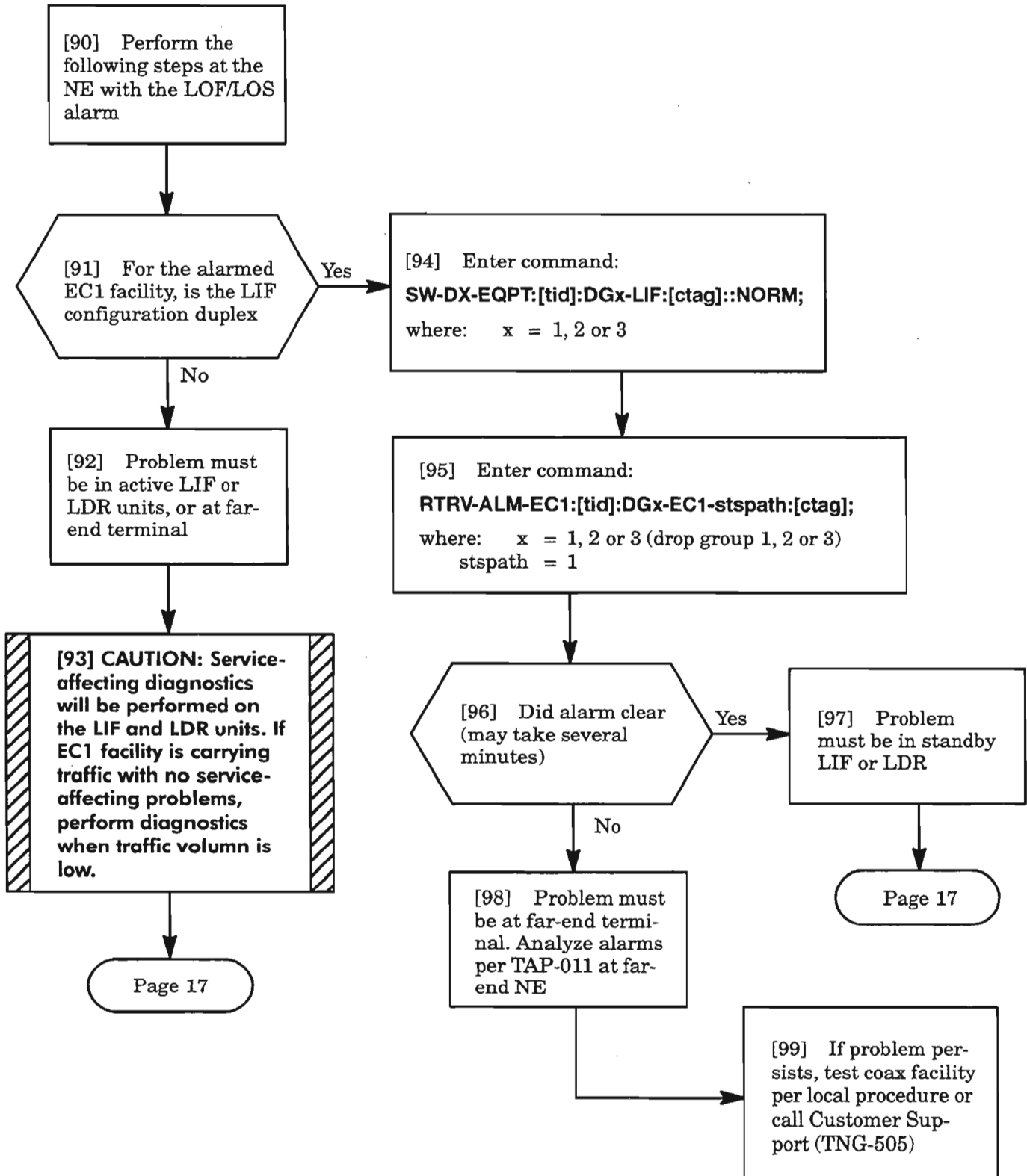
**RTRV-EC1:[tid]:DGx-EC1;stspath;**

where: x = 1, 2 or 3 (drop group 1, 2 or 3)  
stspath = 1

[88] From the response, verify that LINEBLDOUT is enabled or disabled per office records (see DLP-222 for recommended setting based on cable types). If LINEBLDOUT parameter needs to be changed, edit the port per DLP-222



**LOF/LOS (cont)**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 16 of 23	022

# LOF/LOS (cont)

**[100] CAUTION:** The following steps are service-affecting if performed on the active LIF. Perform the following on standby side if LIF and LDR are duplex.

[101] Enter the following commands for the standby LIF (duplex) or active LIF (simplex):

**RMV-EQPT:[tid]:DGx-lifab:[ctag];**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

[102] Enter command:

**DGN-EQPT;:[tid]:DGx-lifab:[ctag]::9,5,IMED;**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

[103] Enter command:

**RST-EQPT:[tid]:DGx-lifab:[ctag];**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

AND

Page 18

[104] Did diagnostics pass

Yes

No

**[105] CAUTION:** Adhere to the procedure in DLP-101 when replacing the LIF to avoid service interruption.

[106] Replace LIF per DLP-101

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 17 of 23	022

**LOF/LOS (cont)**

**[107] CAUTION:** The following steps are service-affecting if performed on the active LDR. Perform the following on standby side if LIF and LDR are duplex.

[108] Enter the following commands for the standby LDR (duplex) or active LDR (simplex):

**RMV-EQPT:[tid]:DGx-ldrab-ldrport:[ctag];**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

[109] Enter command:

**DGN-EQPT;:[tid]:DGx-ldrab-ldrport:[ctag]::4,5,IMED;**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

[110] Enter command:

**RST-EQPT:[tid]:DGx-ldrab-ldrport:[ctag];**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

AND

Page 16  
Step [97]

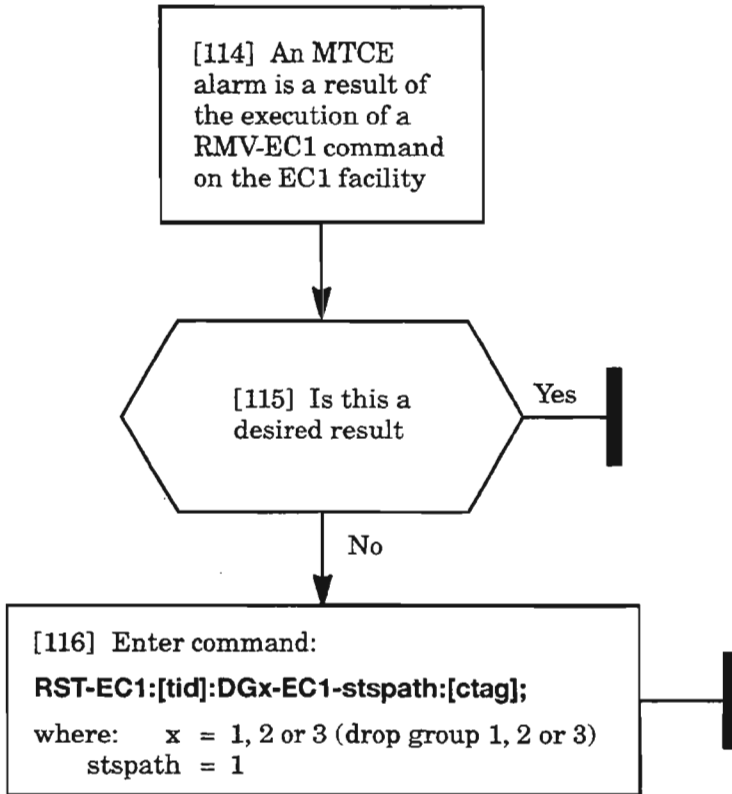
[111] Did diagnostics pass

**[112] CAUTION:** Adhere to the procedure in DLP-101 when replacing the LDR to avoid service interruption.

[113] Replace LDR per DLP-101

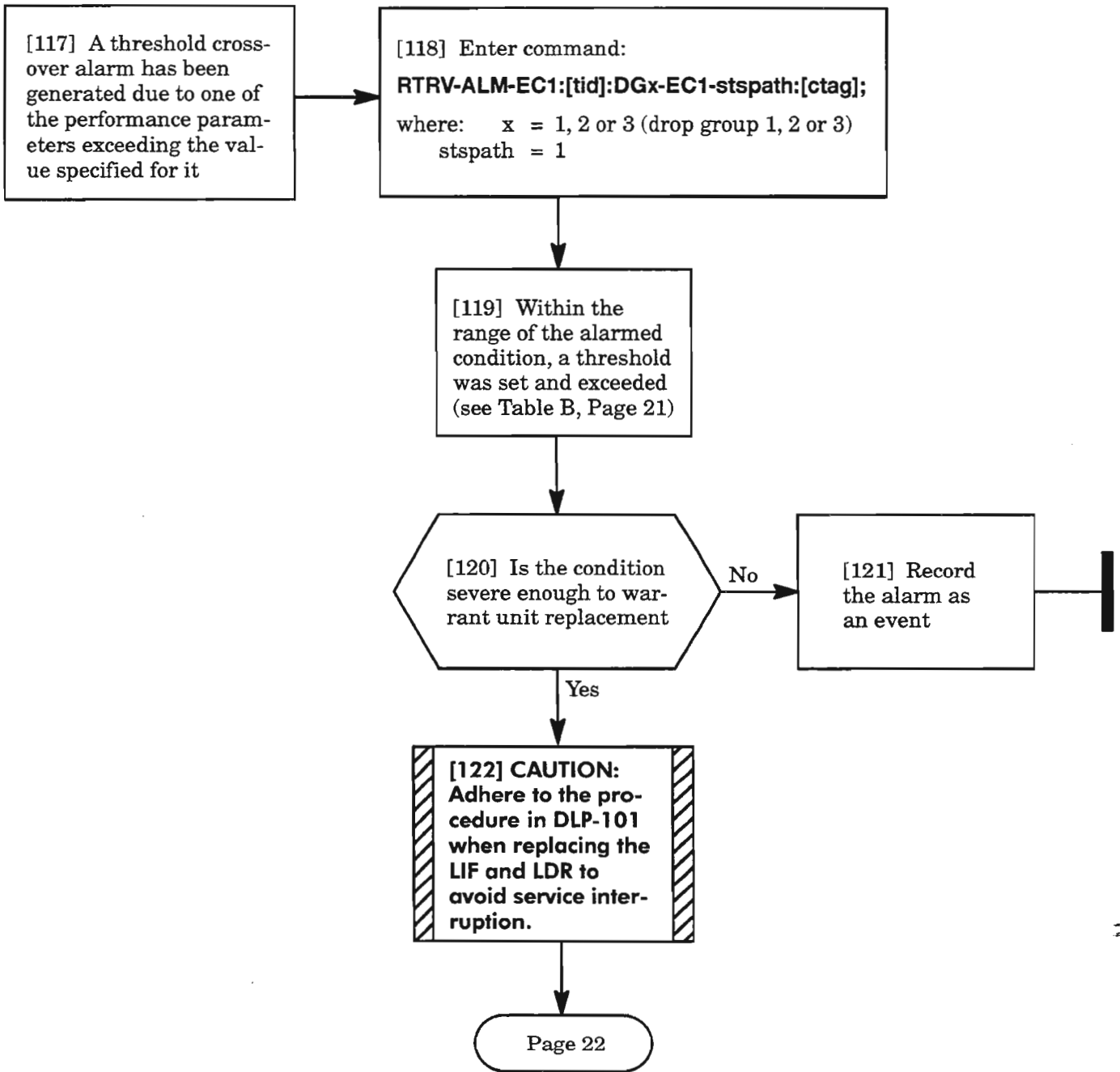
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP 022
PAGE 18 of 23	

# MTCE



## CLEAR EC1 ALARM

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 19 of 23	022



Page 22

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 20 of 23	022

**Table B. Parameter Ranges**

MONITOR TYPE	DEFAULT		RANGE	DESCRIPTION
	15-MIN	1-DAY		
CVL	1328	13288	1...4,294,967,295	Line Coding violations
CVS	1328	13288	1...4,294,967,295	Section Coding violations
BPV	1328	13288	1...4,294,967,295	Bipolar violations
ESL	87	864	1...65535	Line Errored Seconds
ESS	87	864	1...65535	Section Errored Seconds
SEFS	2	17	1...65535	Severely Errored Framing Seconds – OOFs/COFAS
SESL	1	4	1...65535	Line Severely Errored Seconds
SESS	1	4	1...65535	Section Severely Errored Seconds
UASL	3	10	1...65535	Line Unavailable Seconds
BERL-LT	7	7	5...9	Bit Error Ratio Line – low threshold (DGBER)
BERL-HT	4	4	3...4	Bit Error Ratio Line – high threshold (SFBER)
DSESL	2500	2500	1...65535	Number of coding violations to make one SESL
DSESS	2500	2500	1...65535	Number of coding violations to make one SESS

**T-XXX (cont)**

[123] **CAUTION:** The following steps are service-affecting if performed on the active LIF or LDR. Perform the following on standby side if LIF and LDR are duplex.

[124] Replace standby (duplex) or active (simplex) LIF unit per DLP-101

[125] Enter command:  
**RTRV-COND-EC1:[tid]:DGx-EC1-stspath:[ctag];**  
where: x = 1, 2 or 3  
stspath = 1

[126] Did alarm clear (may take several minutes)

[127] Replace standby (duplex) or active (simplex) LDR unit per DLP-101

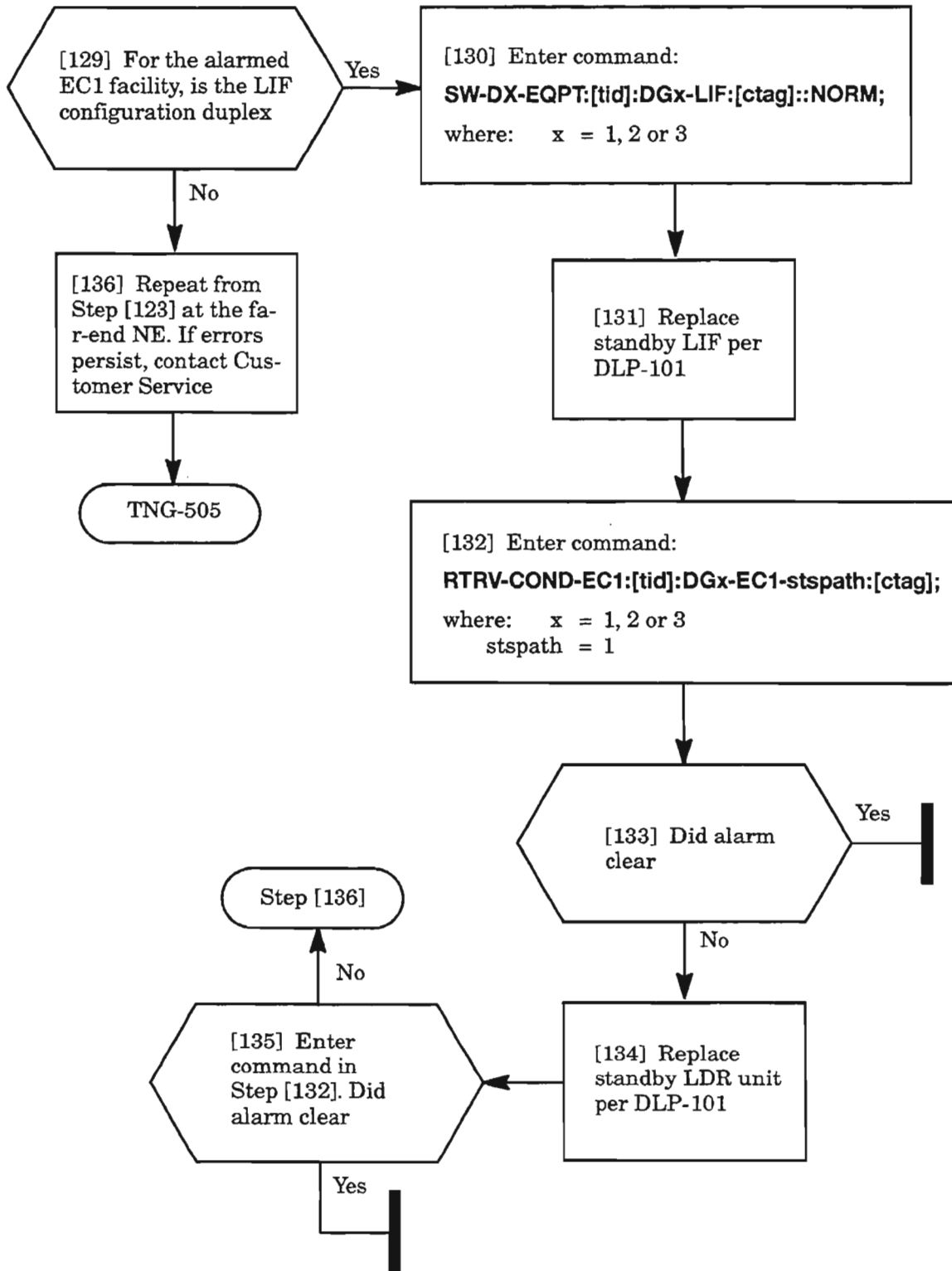
[128] Enter command in Step [125]. Did alarm clear

Page 23

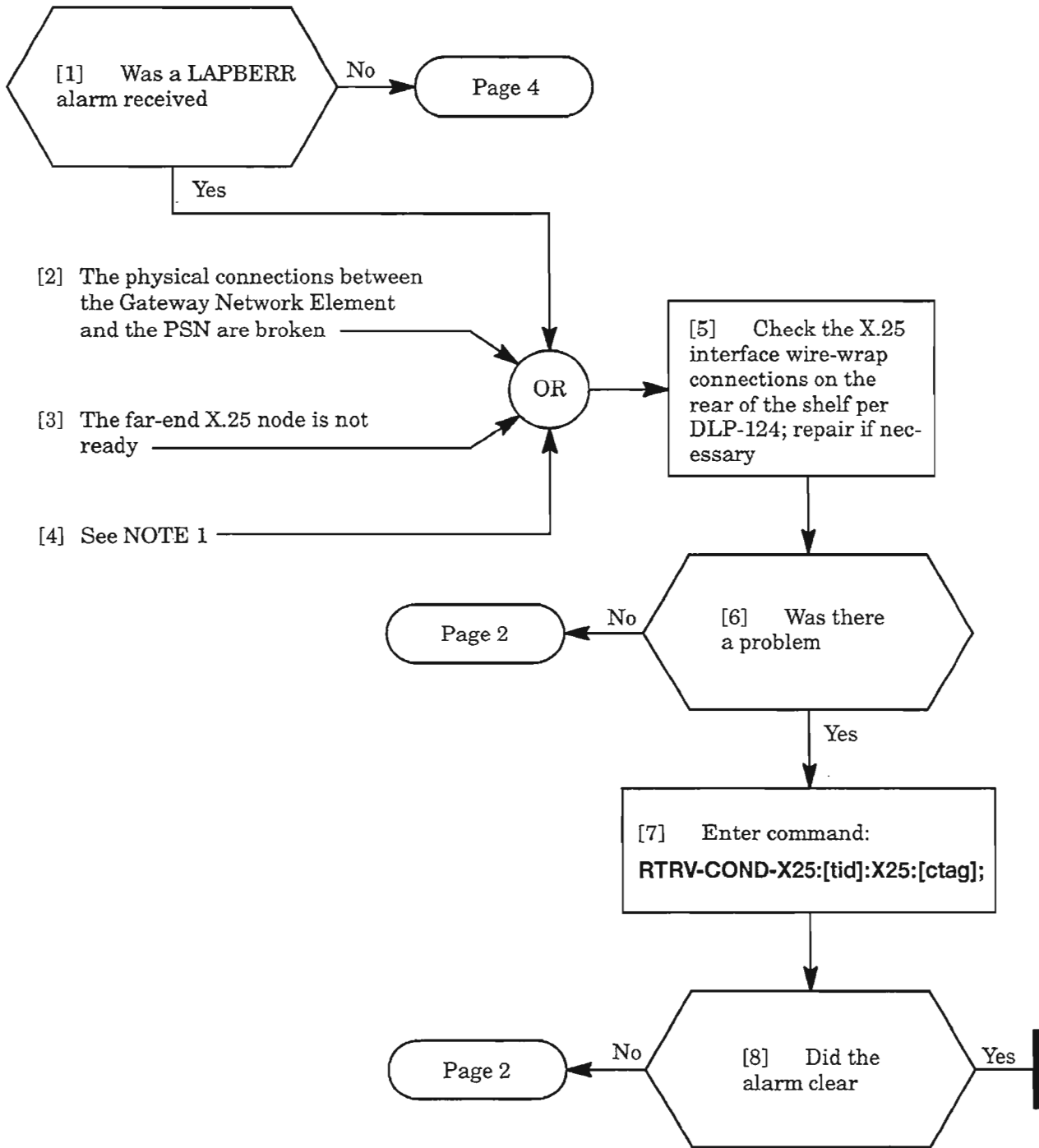
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 22 of 23	022



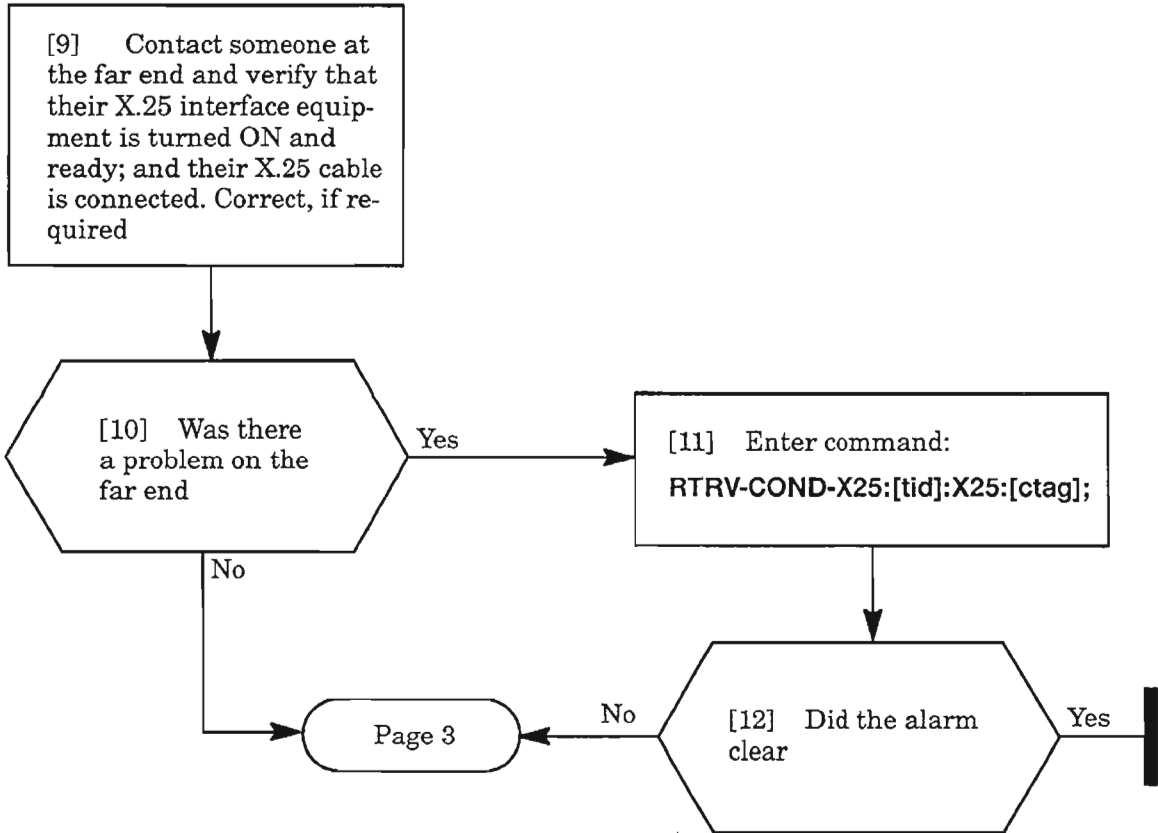
**T-XXX (cont)**

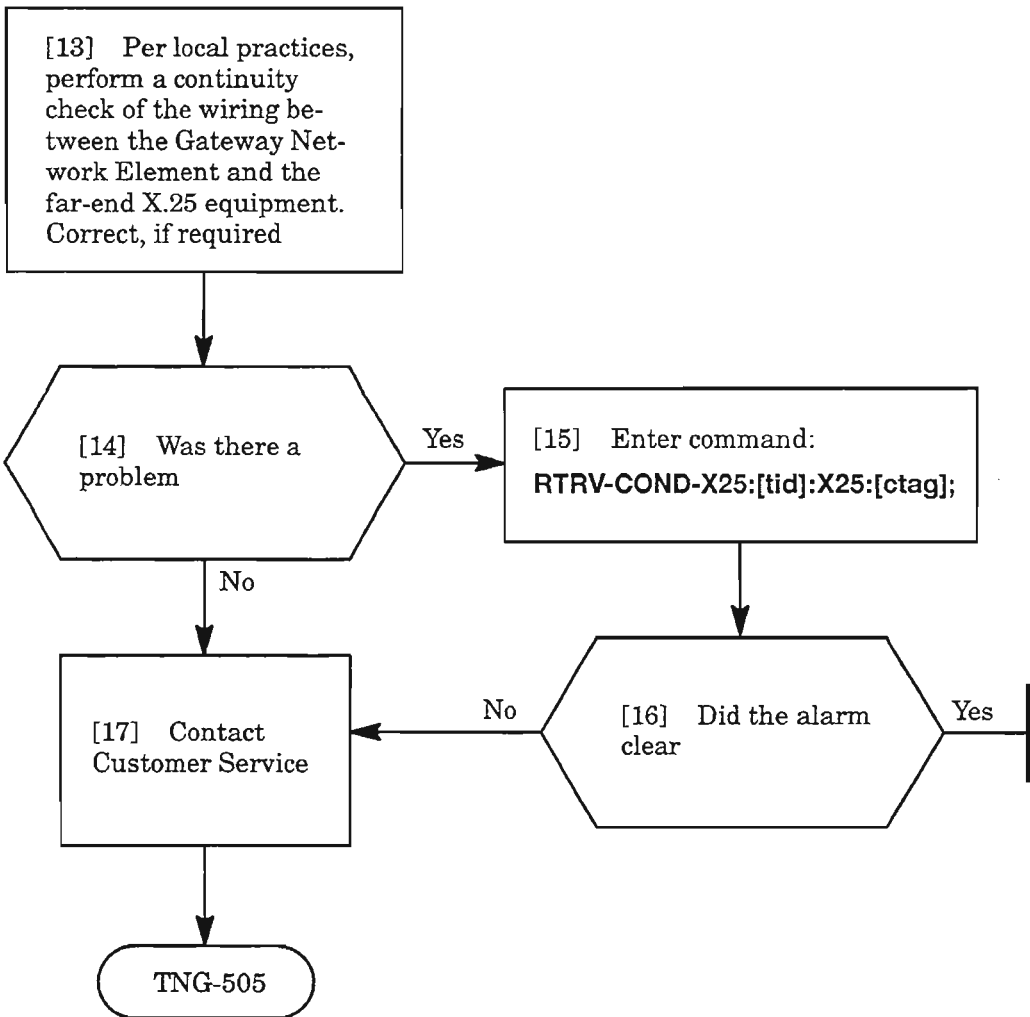


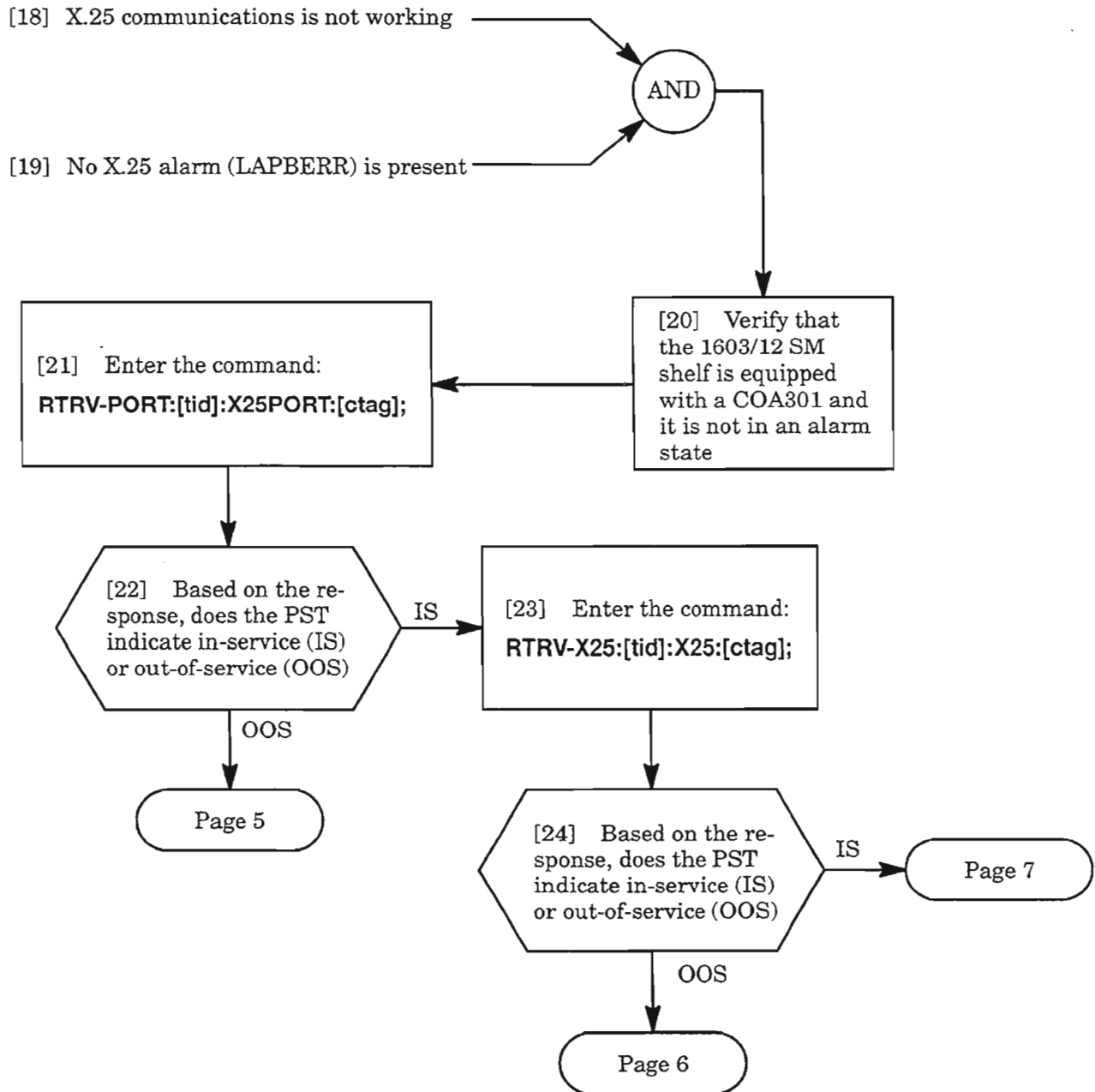




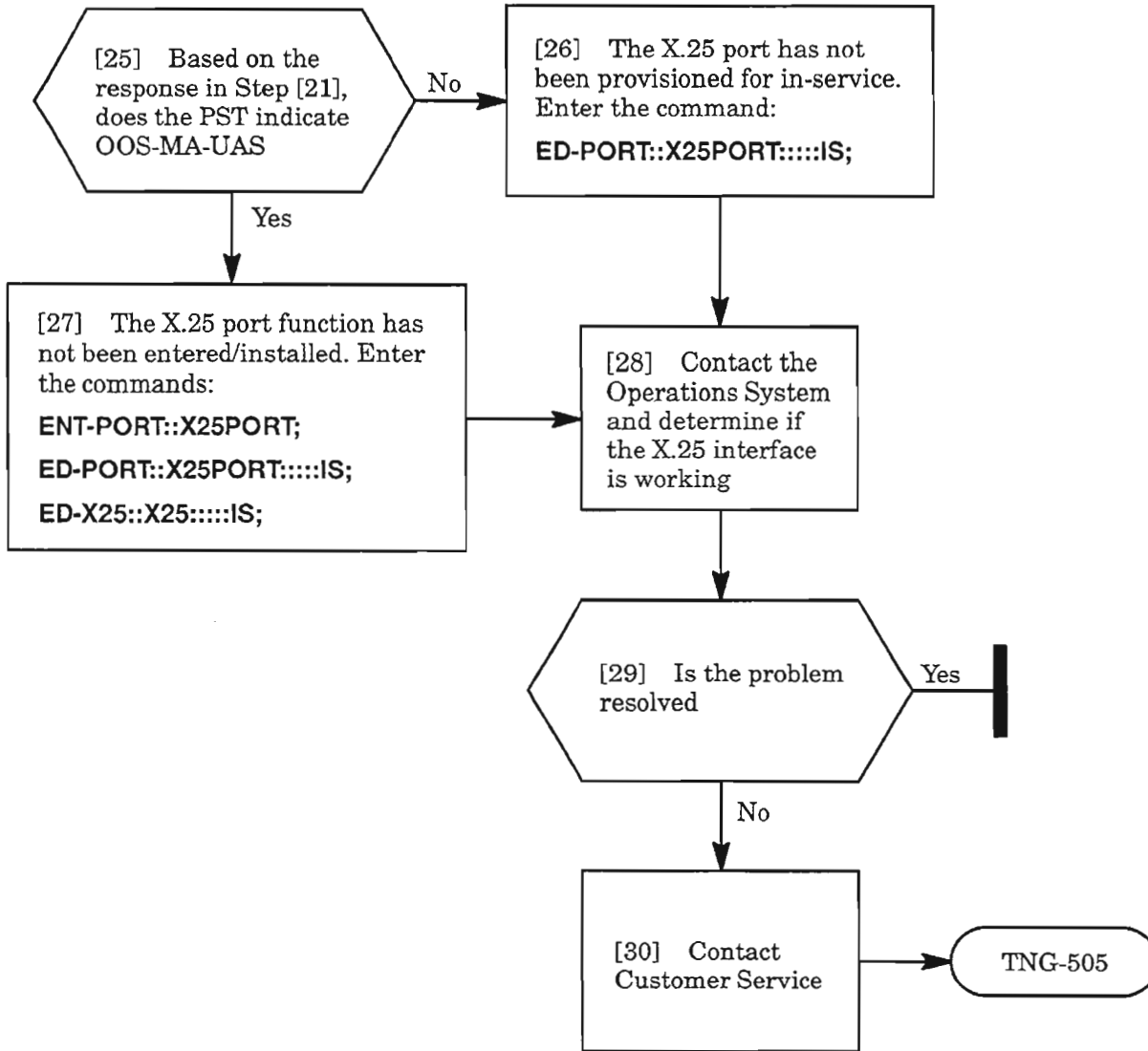
**NOTE:** 1. X.25 communications are not possible if the wrong COA is installed (must be COA301), or the port has been deleted, or the X.25 stack is provisioned out-of-service. However, LAPBERR refers to a Link Access Protocol Balanced (LAPB) error which is synonymous with the physical layer of the X.25 interface.

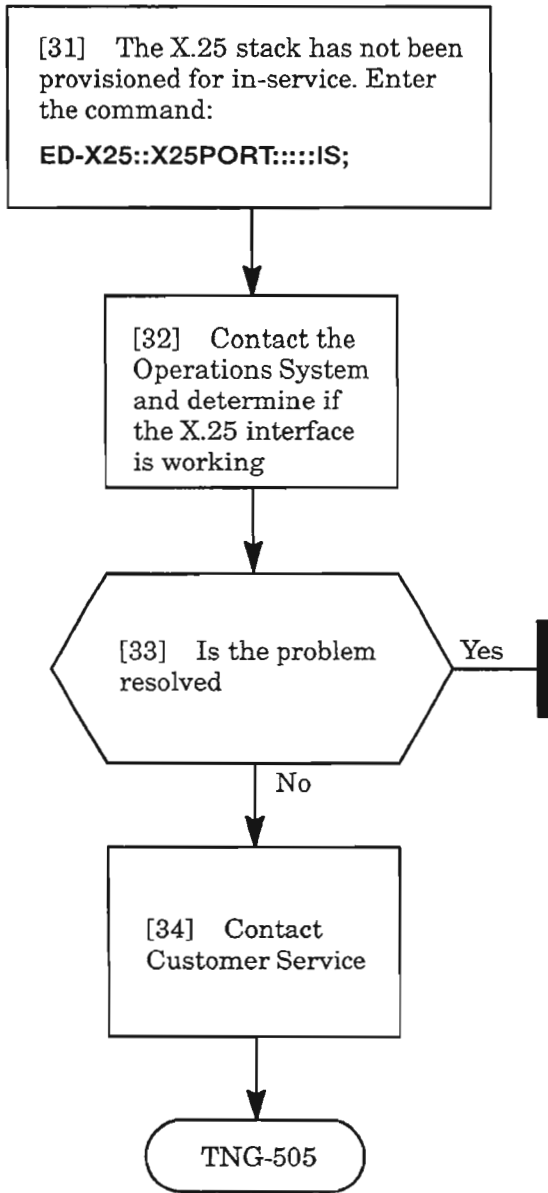






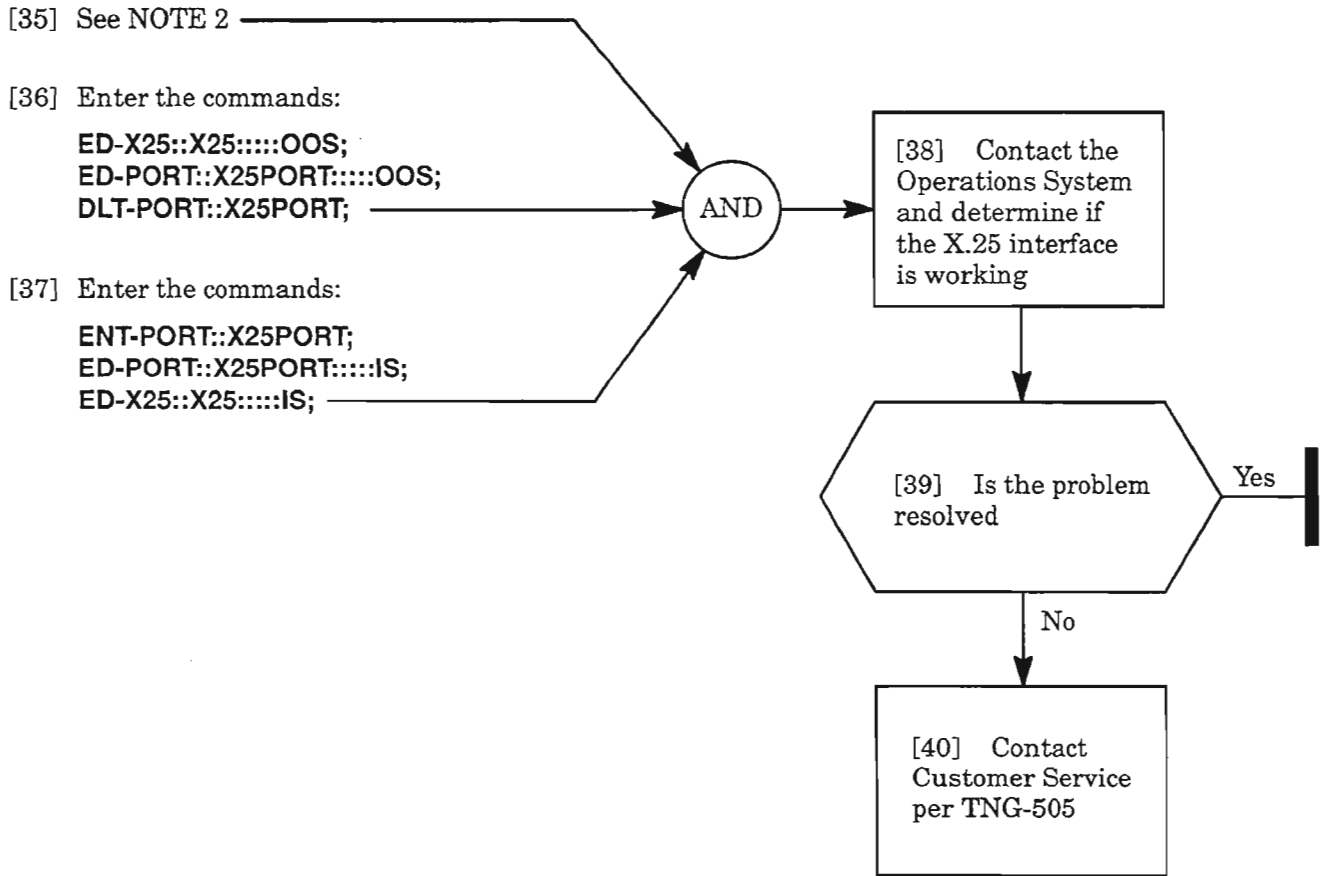
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 7	023



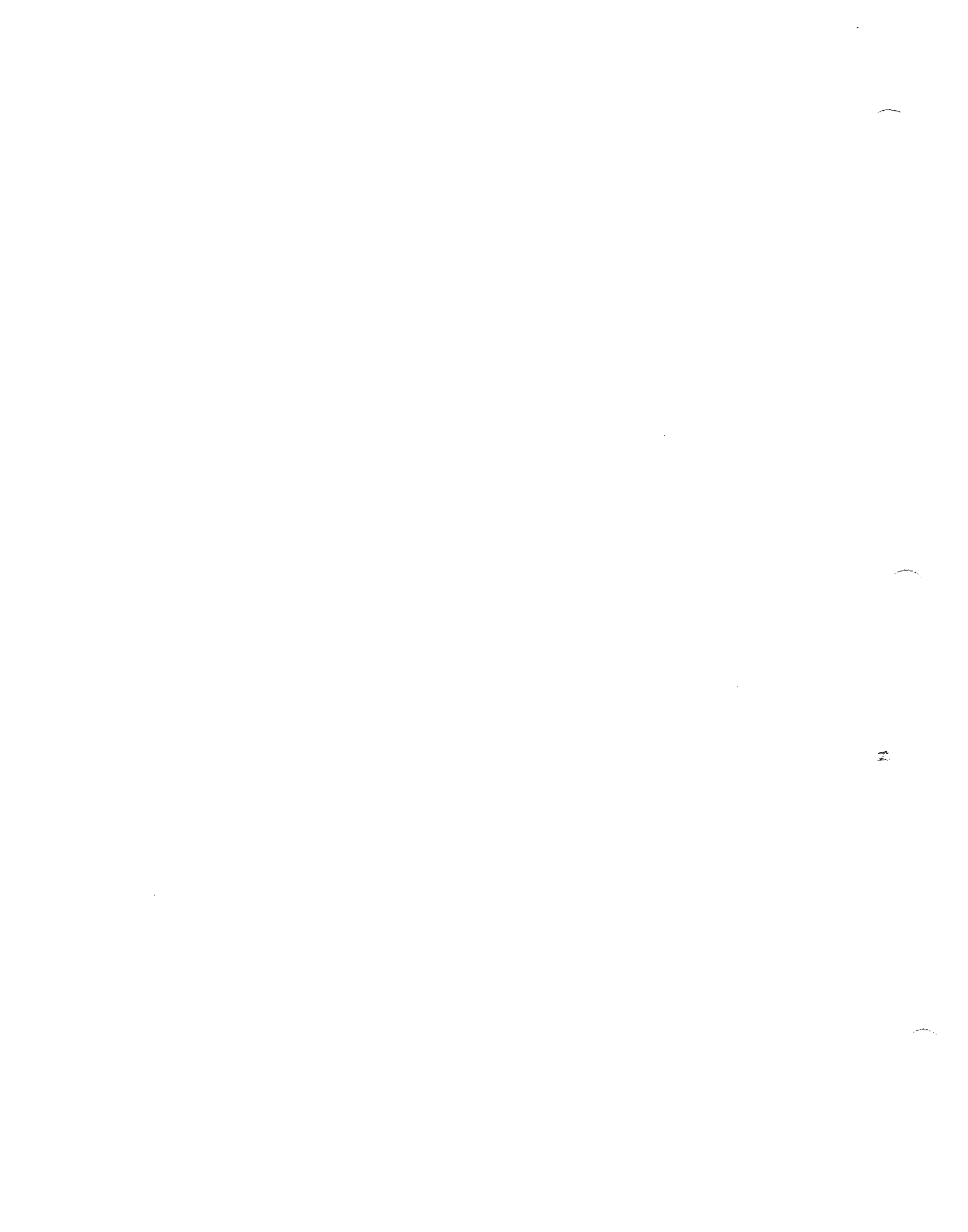


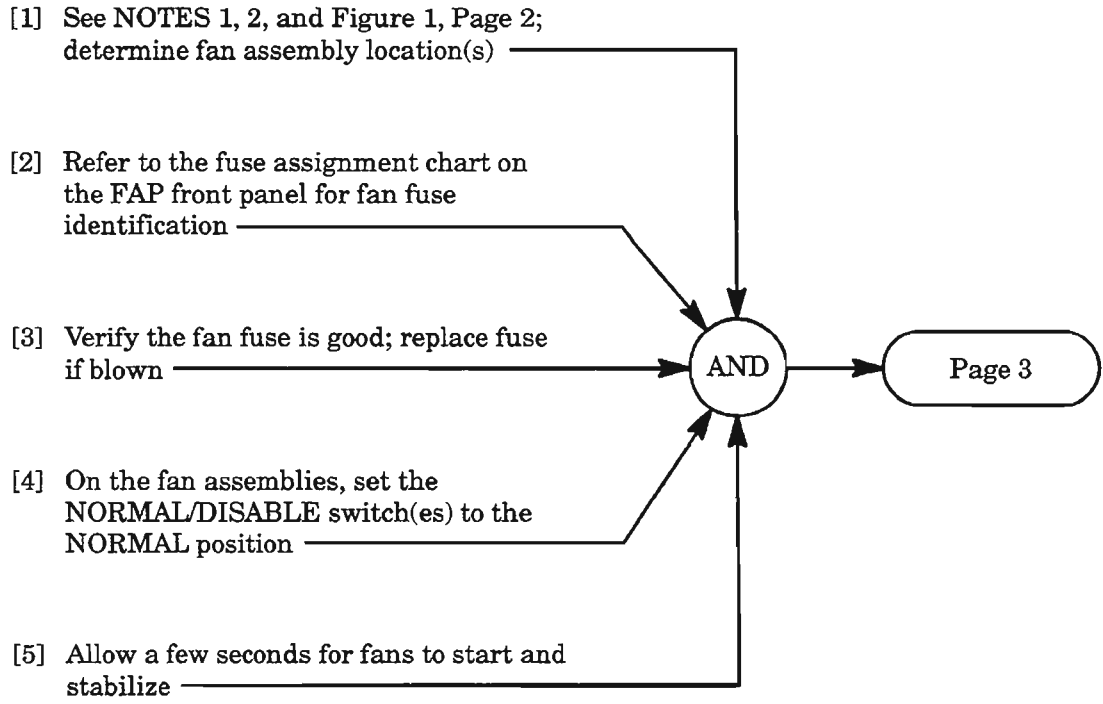
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 7	023



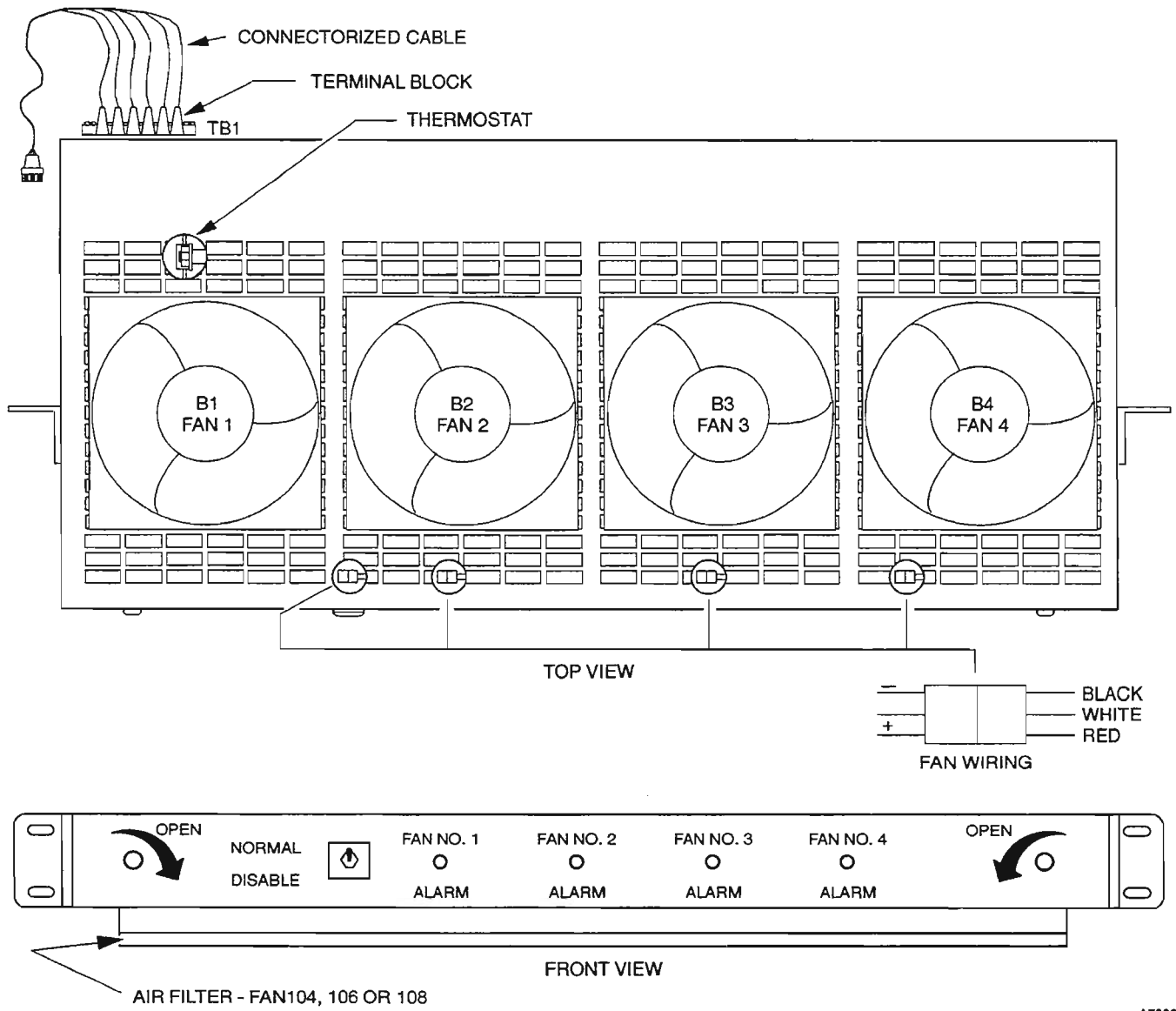


**NOTE: 2.** *Since the X.25 port function is installed and provisioned in-service, and the X.25 stack is in-service, and no X.25 port alarm is present, then the only remaining possibility is corrupted virtual circuits (one or both). To clear this problem, the user must remove the stack from service then place the stack back in-service.*





**NOTES:** 1. *Equipment required: Non-flammable heat source; Digital Volt Meter (DVM).*  
 2. *Fans are optionally equipped as needed per site requirements.*

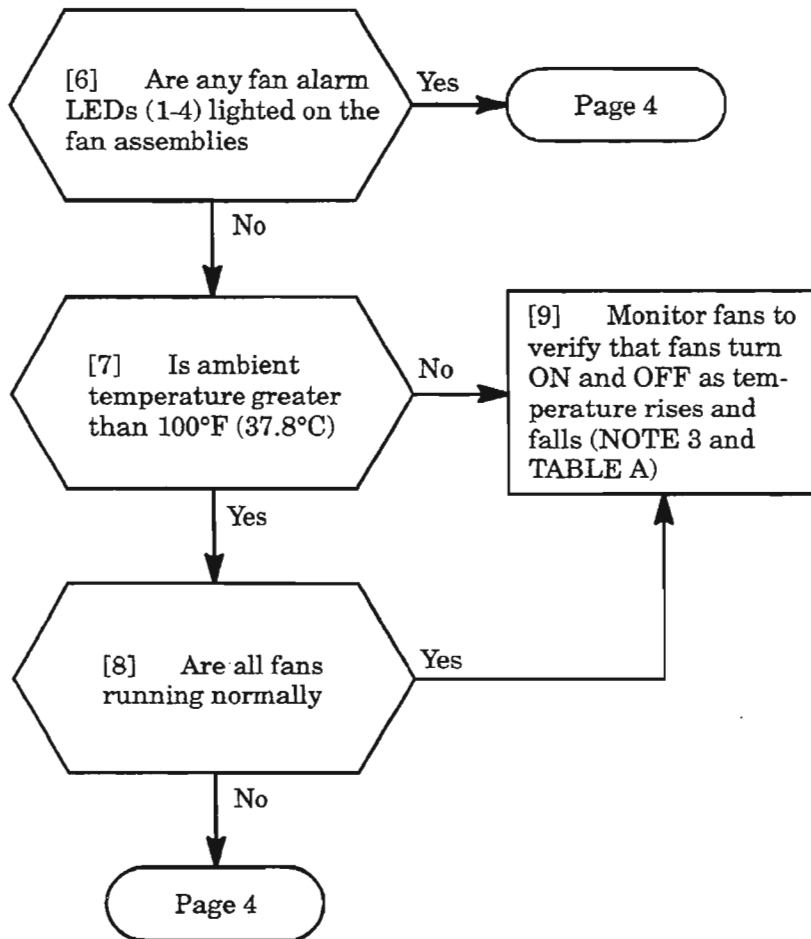


A7332

Figure 1. Fan Assembly Typical Layout

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	024

CLEAR FAN FAULTS

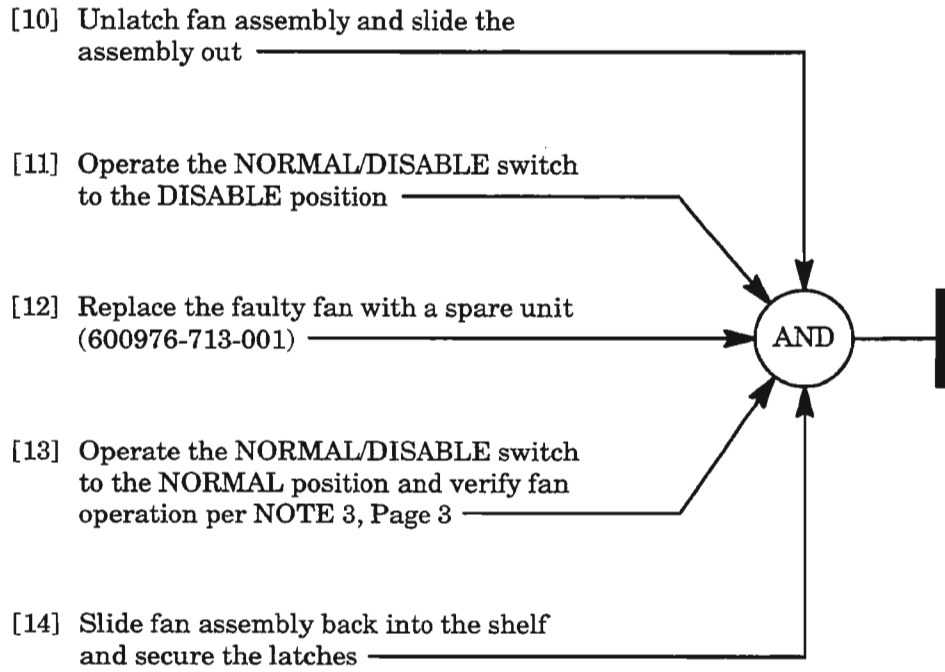


**Table A.**

MNEMONIC	GROUP	ON	OFF
FAN102	-002	38°C	29°C
FAN104	-004	38°C	29°C

**NOTE: 3.** Fans are thermostatically controlled to turn ON (see Table A). If two fan assemblies are equipped, power is supplied to both assemblies through the thermostat in the top assembly. The fans can be forced ON by applying heat to the top thermostat.

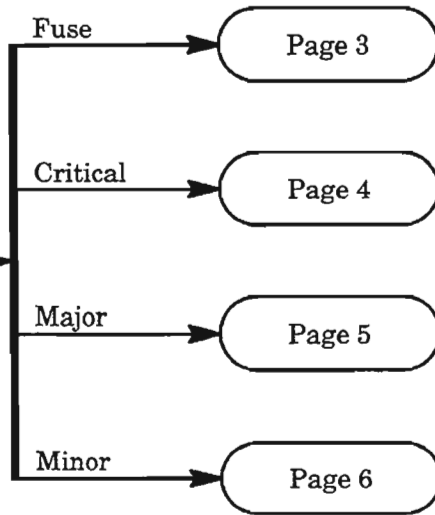
ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 3 of 4	024



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 4 of 4	024

**CLEAR FAN FAULTS**

[1] Identify the alarm (see Figure 1, Page 2)



**CLEAR FAP ALARM**

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 1 of 6	025

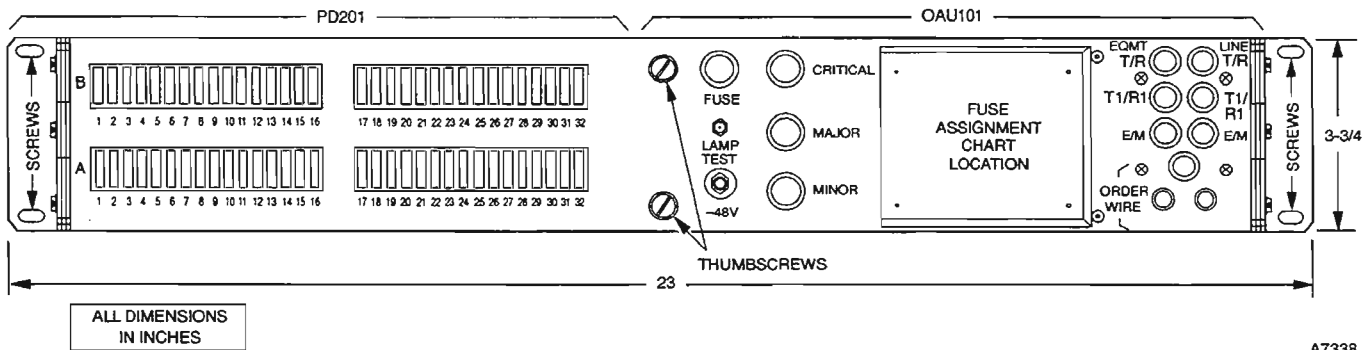
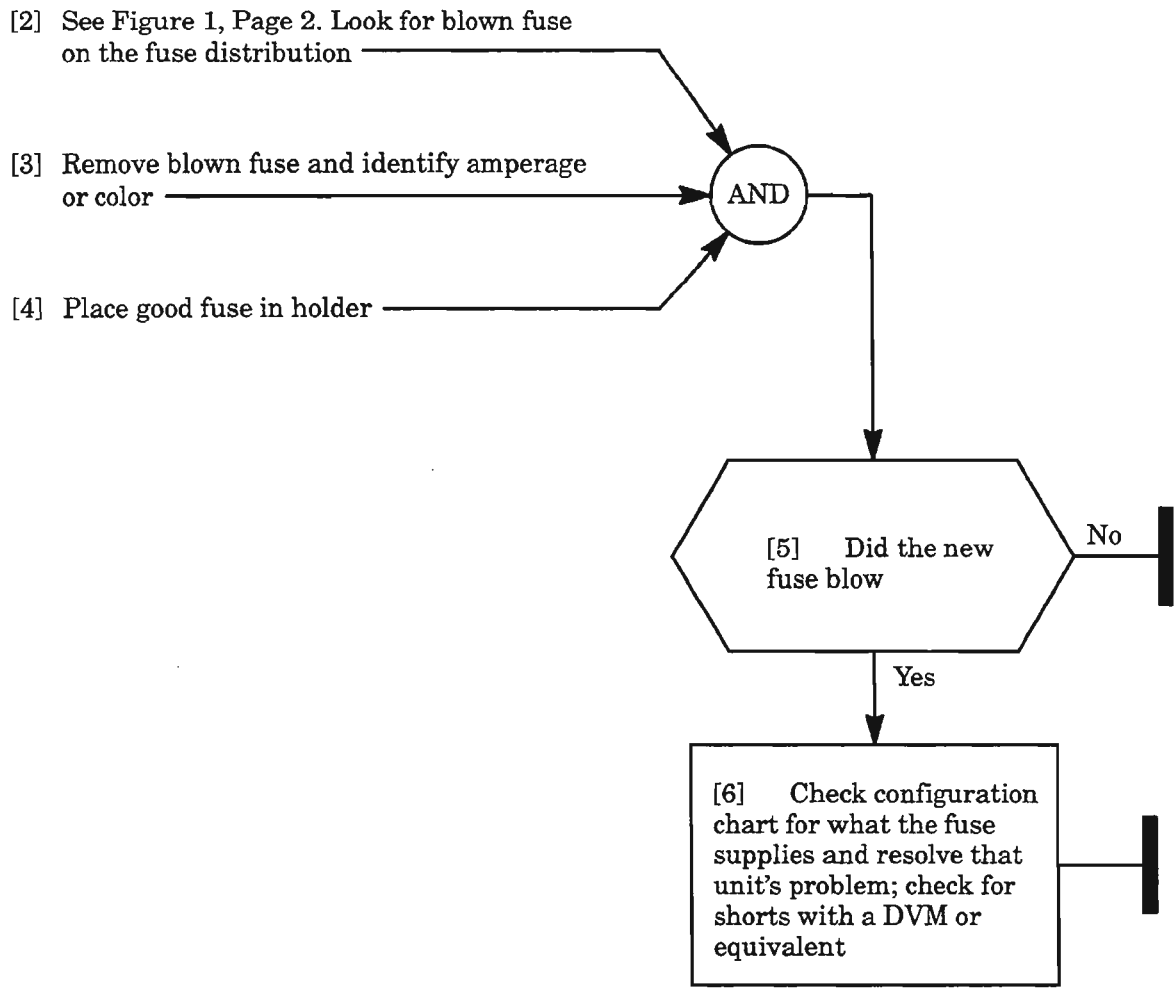


Figure 1. FAP Fuse Panel

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 6	025

**CLEAR FAP ALARM**





[7] Look at the modules being served by the fuse panel (see configuration chart attached to front of fuse panel, Figure 1, Page 2)

[8] Look for the COA unit on each module for a critical alarm

[9] With a craft terminal connected to the COA, enter command:

**RTRV-ALM-ALL:[tid]:ALL:[ctag]::CR;**

[10] From the response, identify unit and clear alarm; see IXL-001



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 4 of 6	025

**CLEAR FAP ALARM**

[11] Look at the modules being served by the fuse panel (see configuration chart attached to front of fuse panel, Figure 1, Page 2)

[12] Look for the COA unit on each module for a major alarm

[13] With a craft terminal connected to the COA, enter command:

**RTRV-ALM-ALL:[tid]:ALL:[ctag]::MJ;**

[14] From the response, identify unit and clear alarm; see IXL-001

```
graph LR; S1[11] --> AND((AND)); S2[12] --> AND; S3[13] --> AND; S4[14] --> AND; AND --- T[Terminal];
```

## CLEAR FAP ALARM

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 5 of 6	025

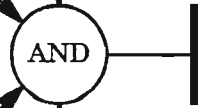
[15] Look at the modules being served by the fuse panel (see configuration chart attached to front of fuse panel, Figure 1, Page 2)

[16] Look for the COA unit on each module for a minor alarm

[17] With a craft terminal connected to the COA, enter command:

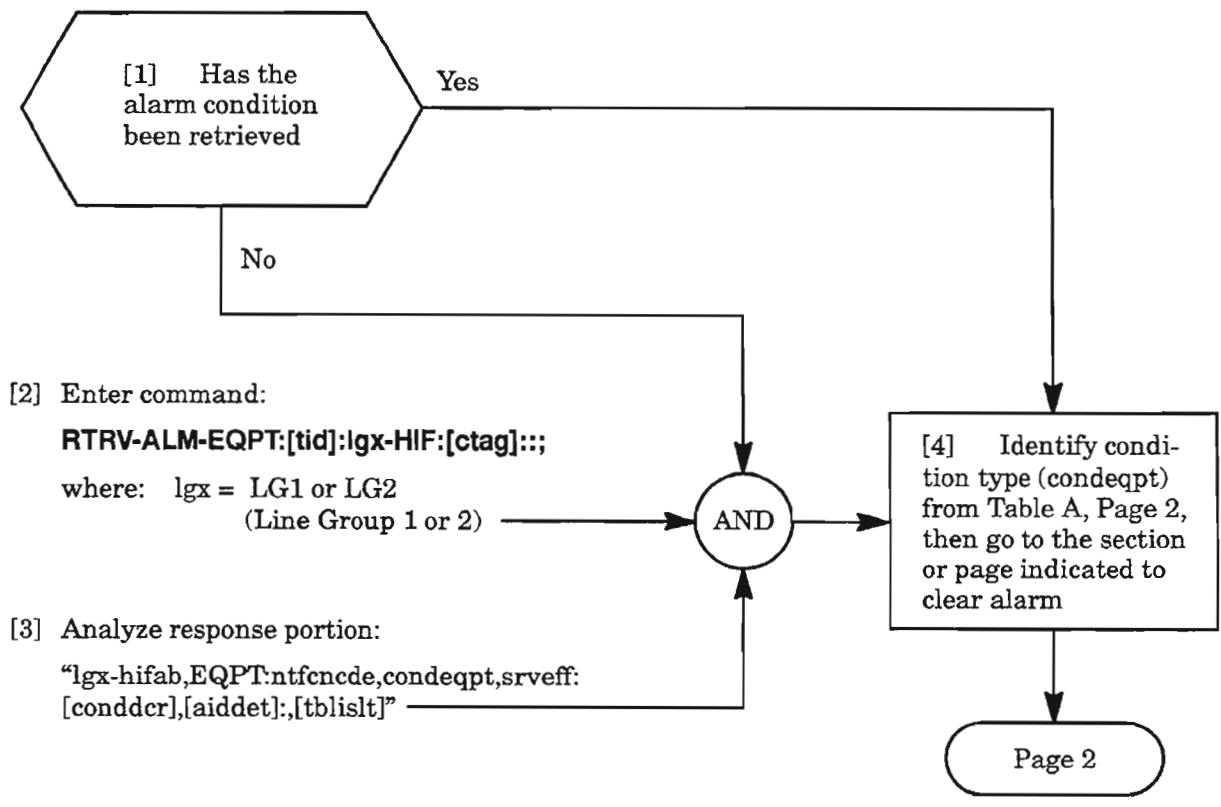
**RTRV-ALM-ALL:[tid]:ALL:[ctag]::MN;**

[18] From the response, identify unit and clear alarm; see IXL-001



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 6 of 6	025

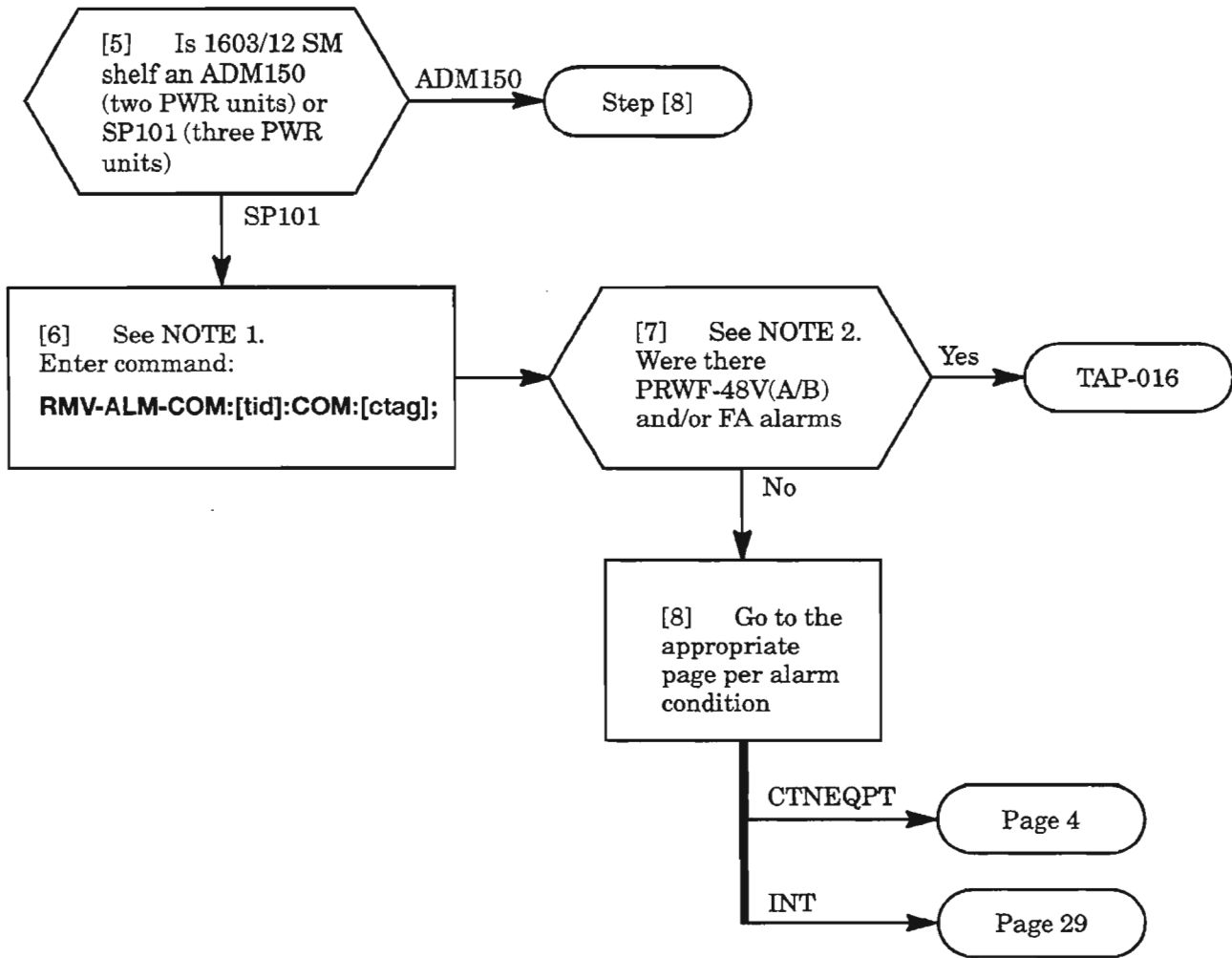
**CLEAR FAP ALARM**



**Table A. Conditions**

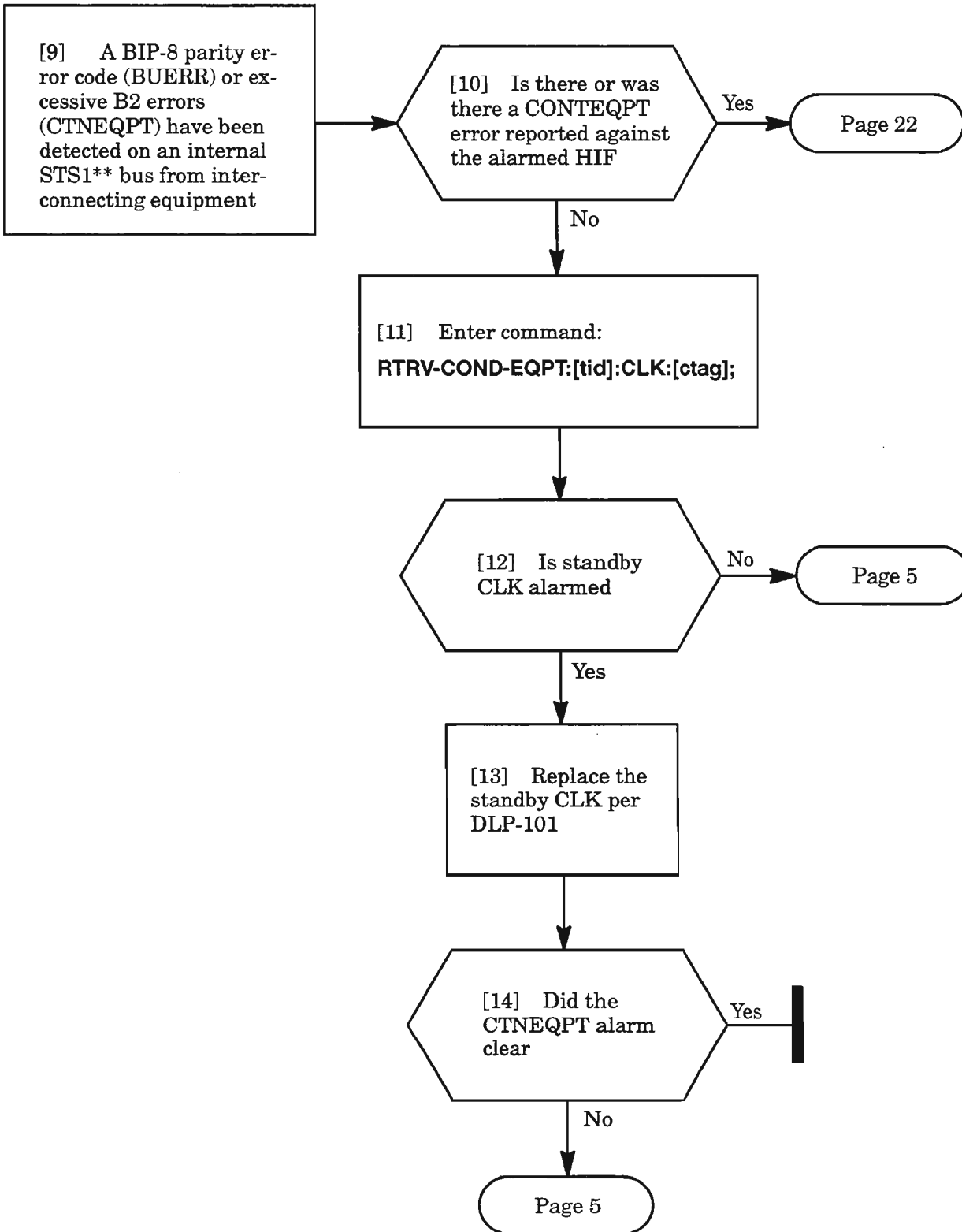
<b>CONDITION/ ALARM</b>	<b>DEFINITION</b>	<b>PAGE/ SECTION</b>
BOOT	Processor is running bootcode	DLP-116
BUERR	STS1** B2 excessive errors	4
CNTBUS	Standby NEP to HIF reflection test failure	12
CONTBUS	SBI out-of-frame	15
CONTCOM	NEP-HIF link down	18
CONTEQPT	Switch test fail	22
CONTRDUP	Active HIF to standby HIF link down	25
CTNEQPT	STS1** interconnection equipment failure	3
IMPROPRMVL	Improper removal	27
INHDBGN	Inhibit diagnostics	28
INT	Internal unit failure	3
INVERR	Inventory error	30
LBCL	High TX laser bias	32
LOM	Loss of modulation	33
MEA	Mismatch of unit and provisioning data	34
MTCE	Removed from service for maintenance	35
PROGVER	Program version error	36
SYNCCLK	Loss of clock for sync	38

# CTNEQPT/INT



- NOTES:**
1. The HIF-A units receive power directly from the -48VA fuse and, alarm in the SP101 shelf (ALM lamp lights with INT and CNTEQPT alarm conditions) if the -48V\_A input fails. Likewise, the HIF-B units receive power from the -48VB fuse, and alarm in the SP101 shelf if the -48V\_B input fails. Because of this, first consider failure of -48V input power.
  2. If the COA30X is equipped instead of COA40X or later versions, the PWRF-48V(A/B) alarm condition is not reported and must be visually verified. If necessary, check for -48V at the shelf backplane (DLP-004).

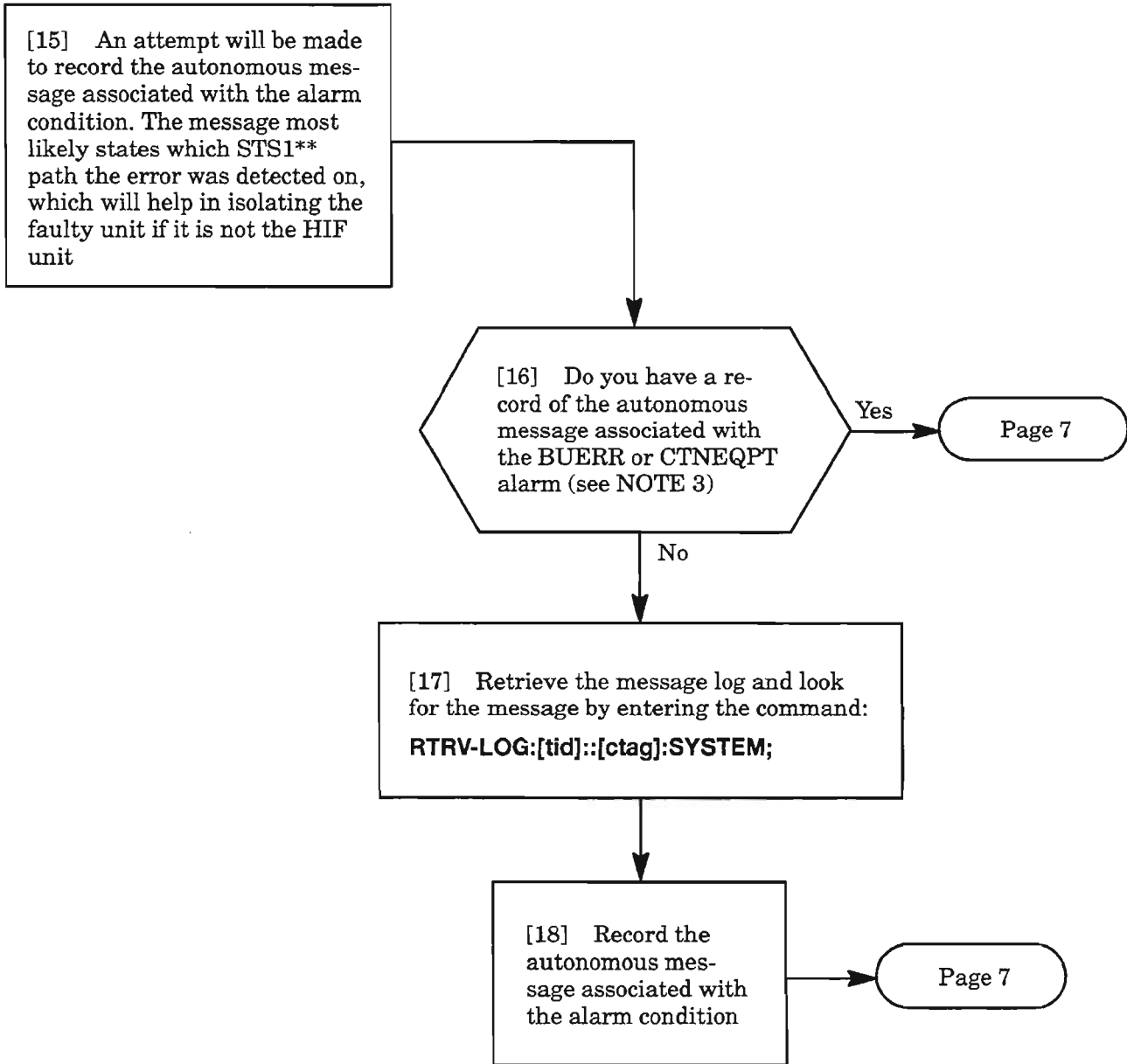
# BUERR/CTNEQPT



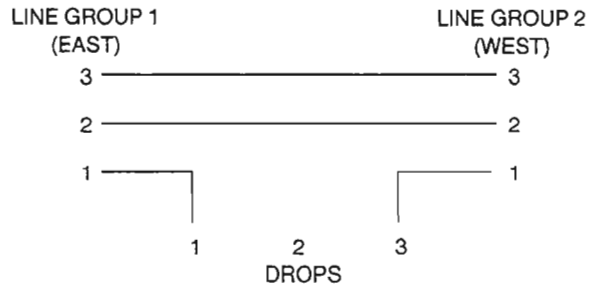
ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 4 of 39	026



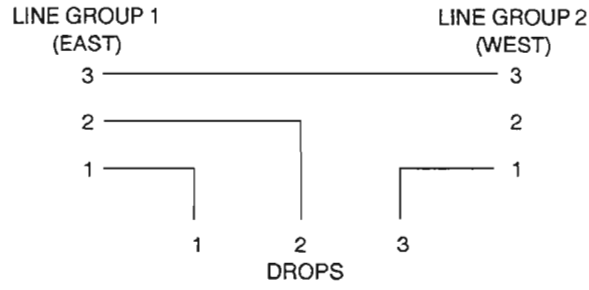
**BUERR/CTNEQPT (cont)**



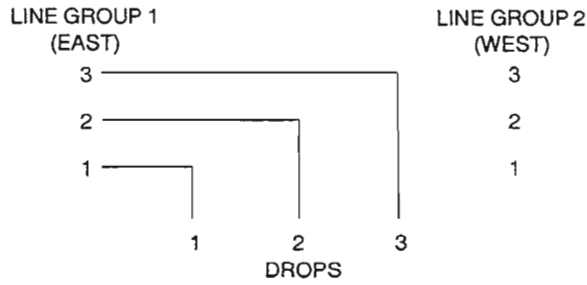
**NOTE: 3.** The autonomous message will be of the type REPT-ALM-EQPT with the aid format of LGx-HIFy (where x = 1 or 2 and y = A or B). If BUERR alarm, the conddescr parameter contains B2ER-ROR(A or B)\_P(1, 2 or 3). If CTNEQPT alarm, the conddescr parameter contains STS1(A or B)FAIL\_P(1, 2 or 3) or STS(A or B)INERX\_P(1, 2 or 3). The highlighted A or B in the conddescr indicates which side (A or B) of the STS\*\* bus the error was detected on. The highlighted (1, 2 or 3) indicates the internal STS-1 path to interconnected equipment. If VSCC20X is used, its cross-connection configuration determines what equipment the path (1, 2 or 3) goes to. See Figure 1, Page 6.



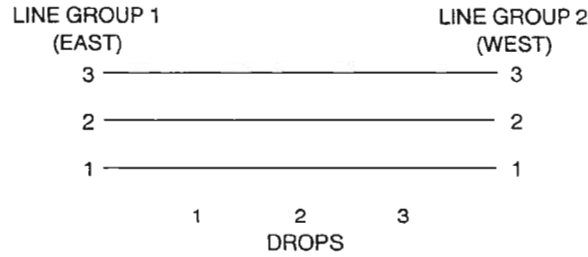
**Detail A - VSCC201, Routing Diagram**



**Detail B - VSCC202, Routing Diagram**



**Detail C - VSCC203, Routing Diagram**



**Detail D - VSCC204, Routing Diagram**

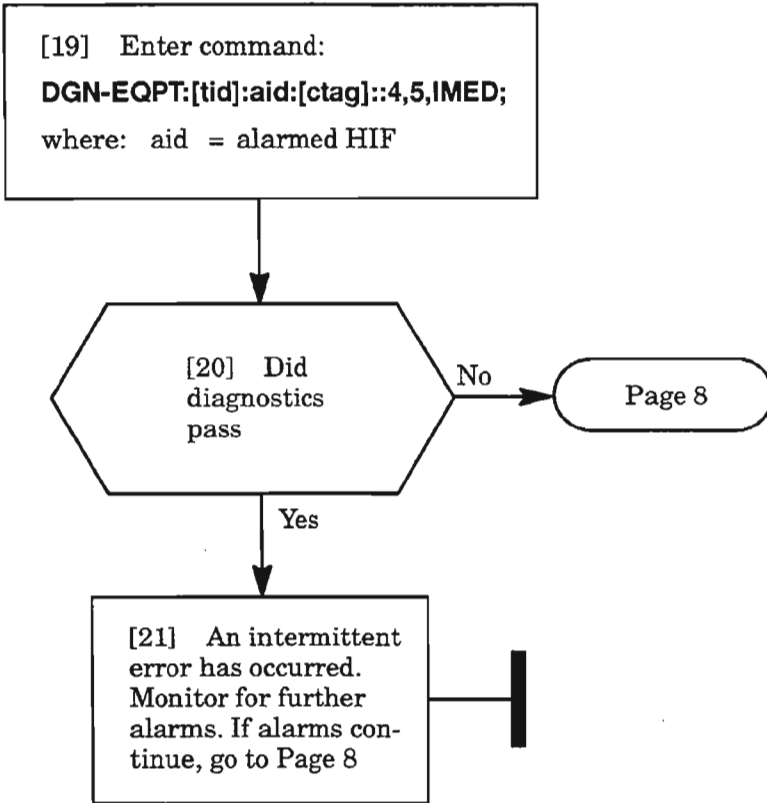
A7395

**Figure 1. VSCC20X, 625618-000-00X, Traffic Routing Diagrams**

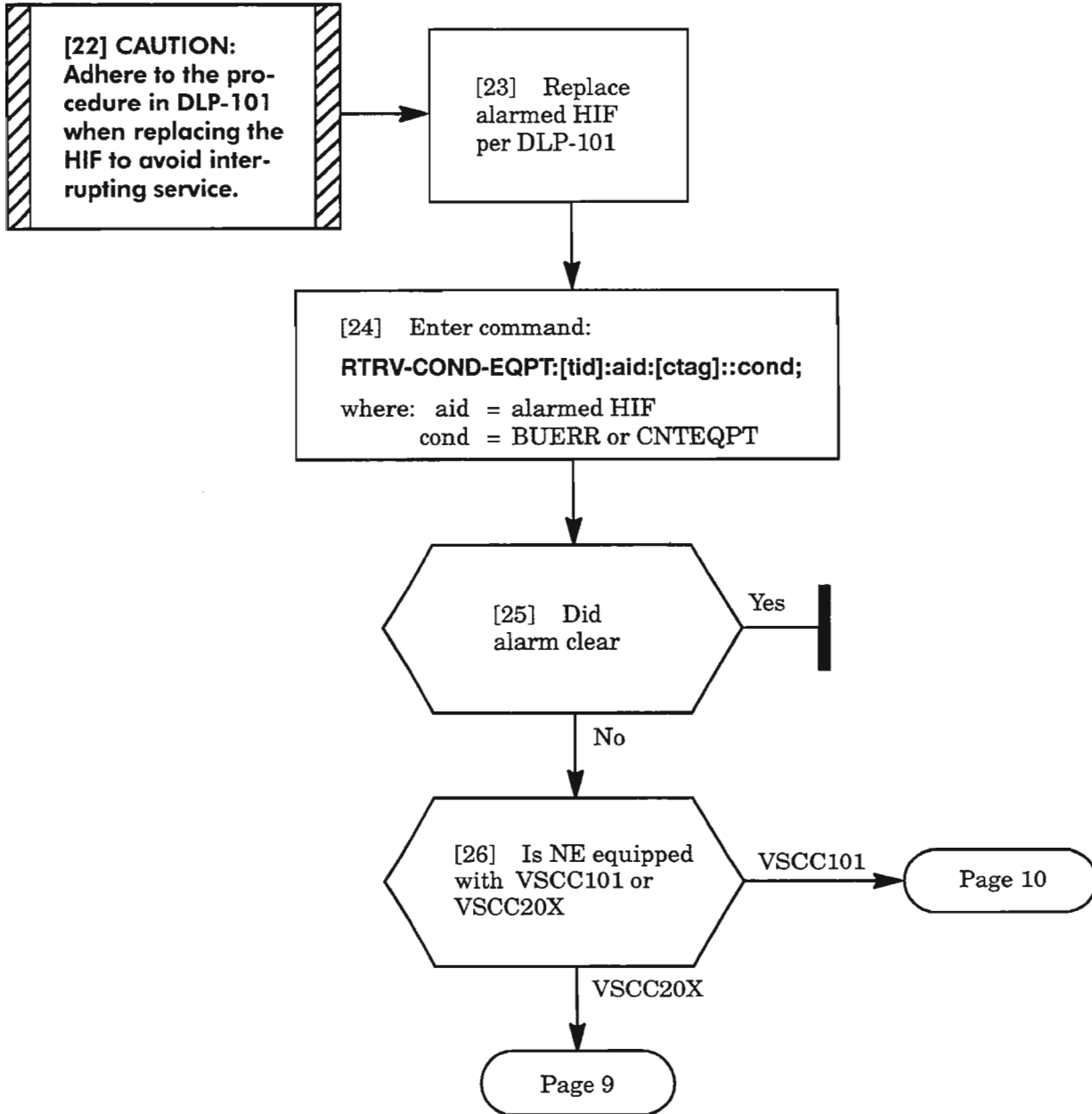
ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 6 of 39	026

**CLEAR HIF UNIT ALARM**

**BUERR/CTNEQPT (cont)**

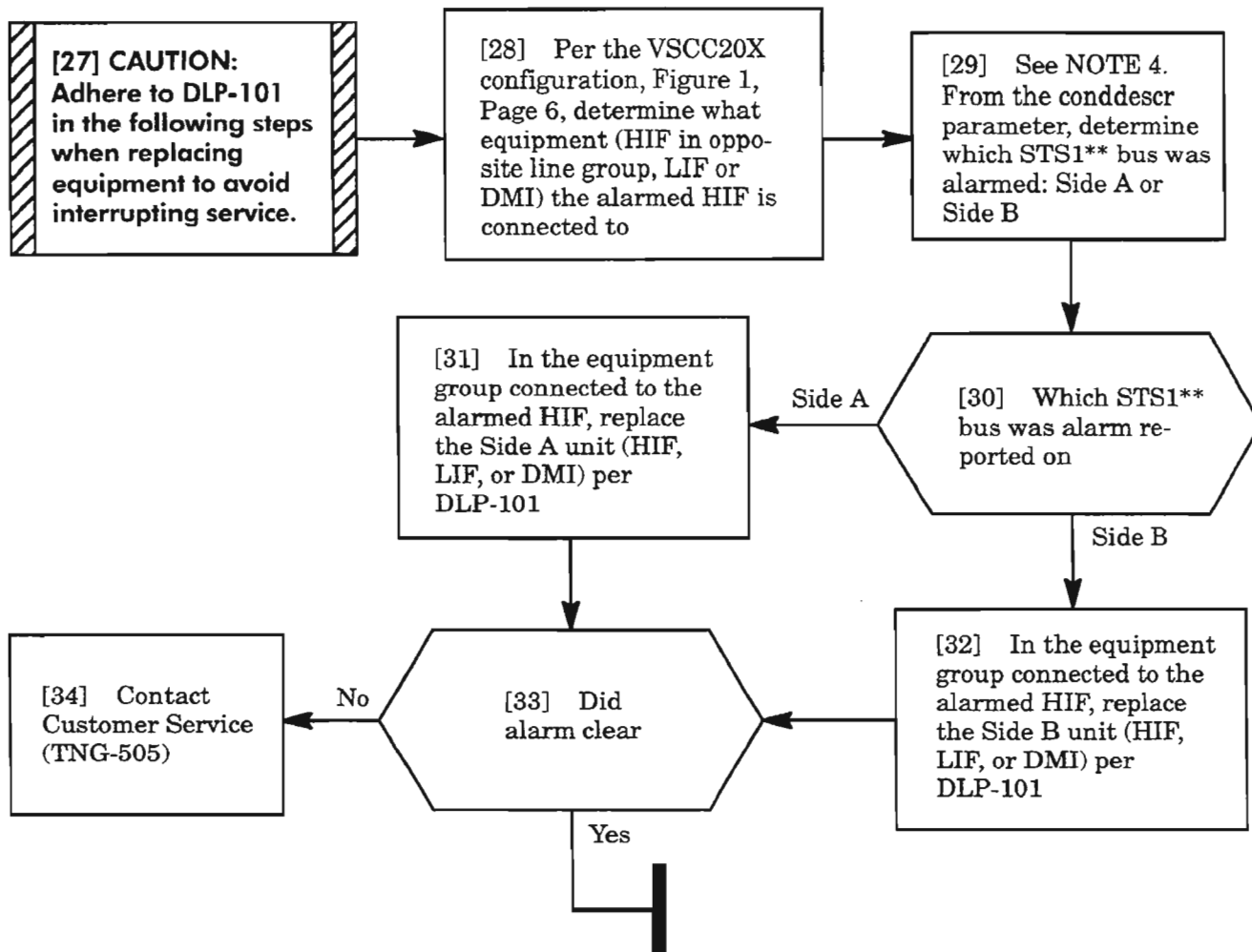


**BUERR/CTNEQPT (cont)**



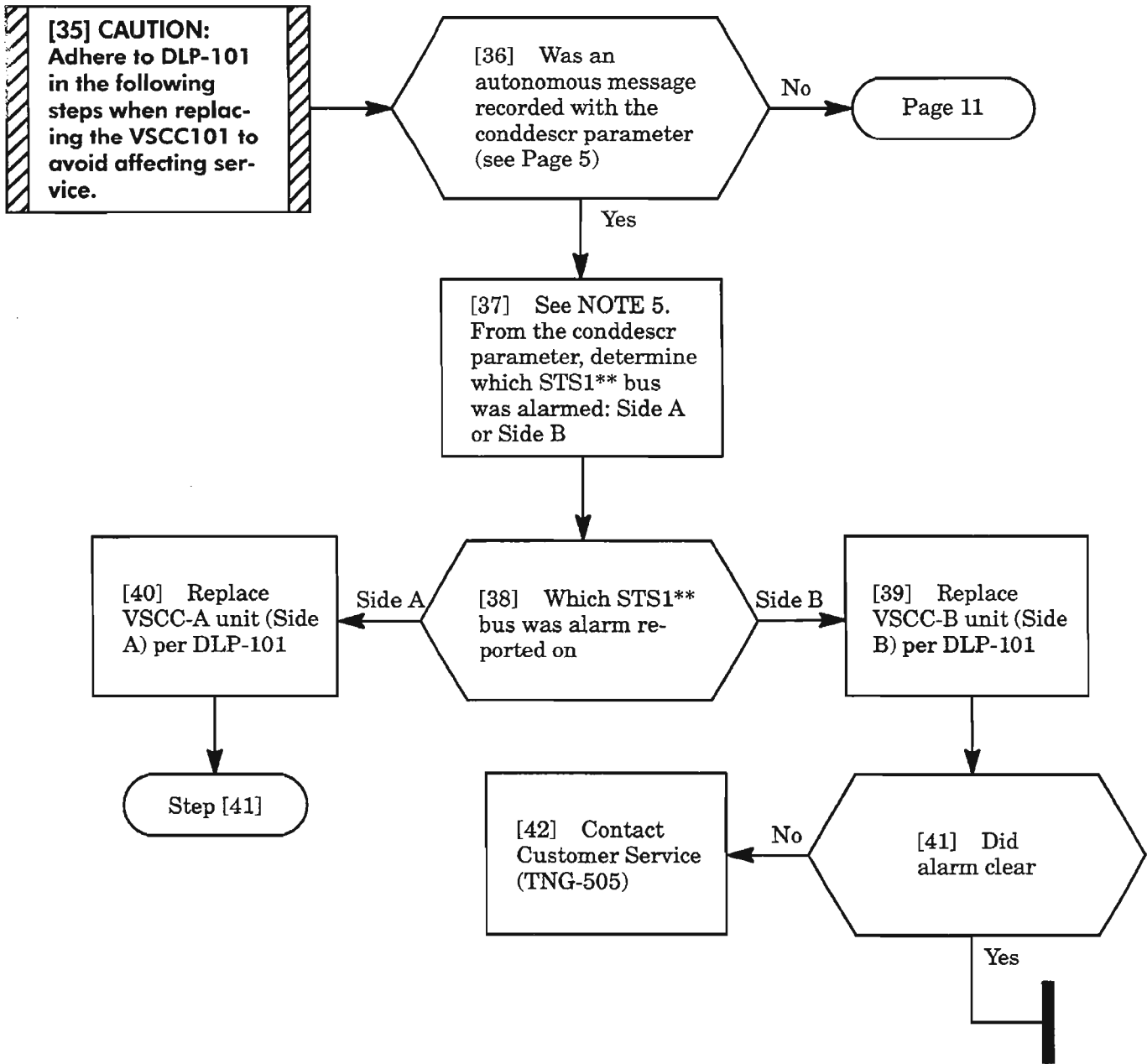
ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 8 of 39	026

**BUERR/CTNEQPT (cont)**



**NOTE: 4.** If BUERR alarm, the conddescr parameter contains B2ERROR(A or B)\_P(1, 2 or 3). If CTNEQPT alarm, the conddescr parameter contains STS1(A or B)FAIL\_P(1, 2 or 3) or STS(A or B)INERX\_P(1, 2 or 3). The highlighted A or B in the conddescr indicates which side (A or B) of the STS\*\* bus the error was detected on. The highlighted (1, 2 or 3) indicates the internal STS-1 path to interconnected equipment. If VSCC20X is used, its cross-connection configuration determines what equipment the path (1, 2 or 3) goes to. See Figure 1, Page 6.

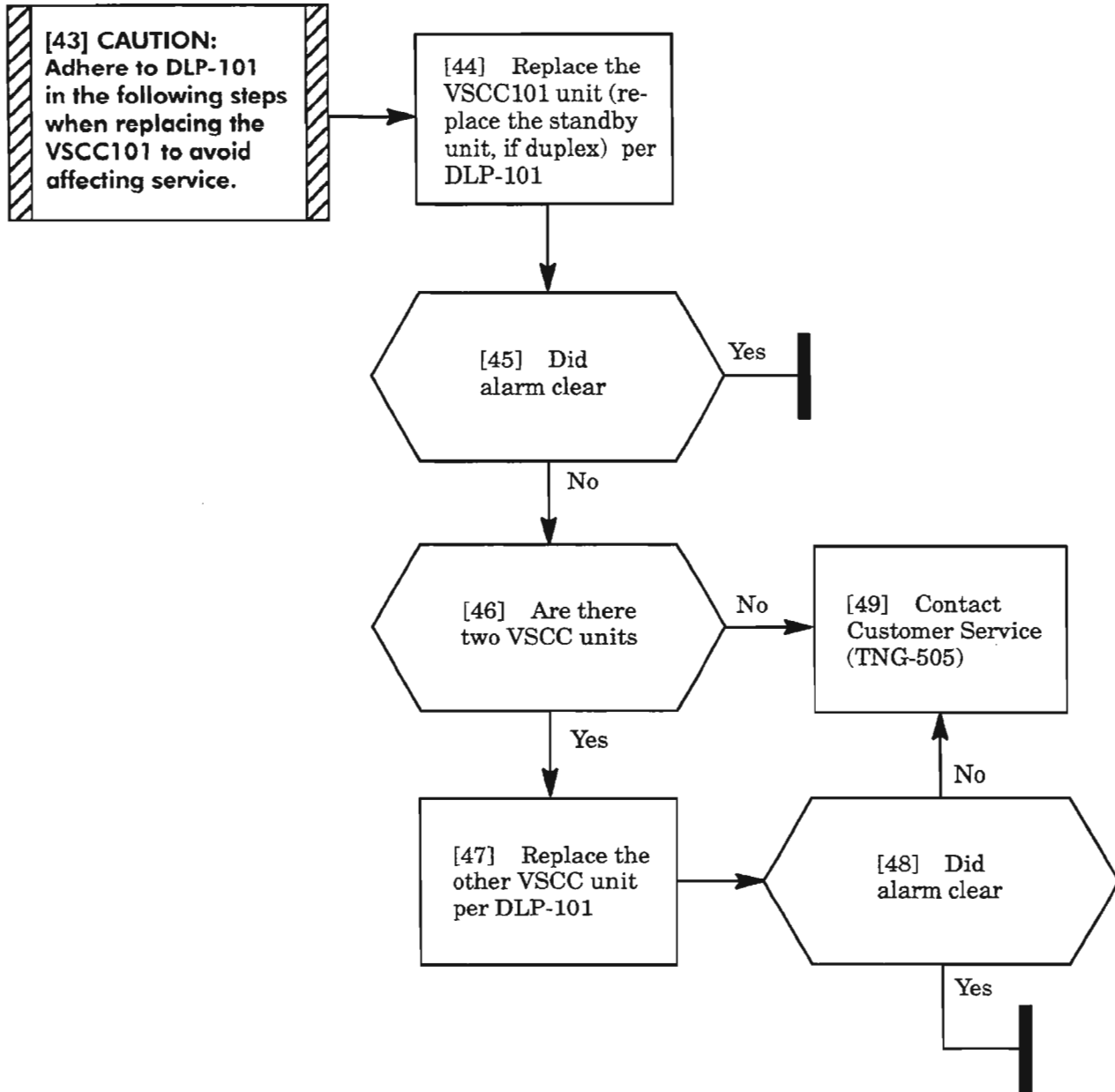
**BUERR/CTNEQPT (cont)**



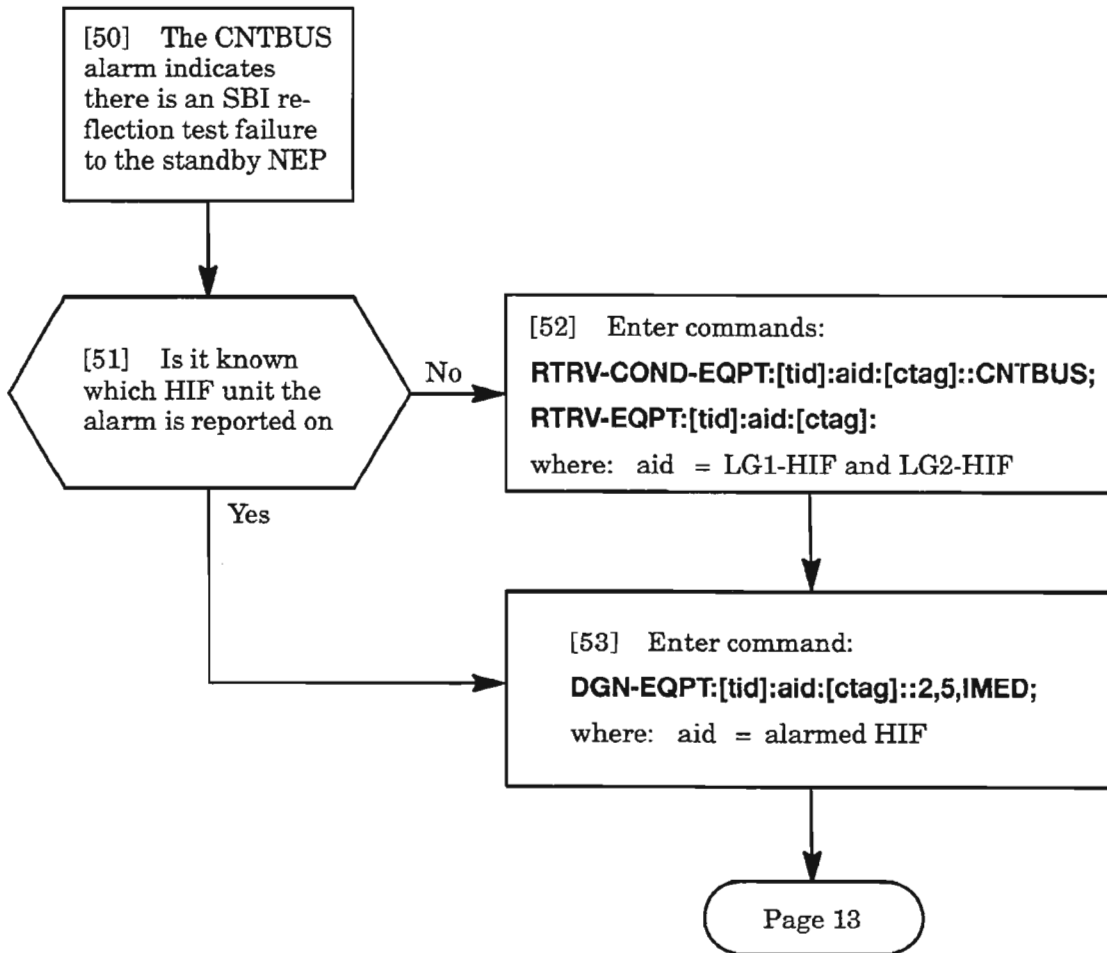
**NOTE: 5.** If BUERR alarm, the conddescr parameter contains B2ERROR(A or B)\_P(1, 2 or 3). If CTNEQPT alarm, the conddescr parameter contains STS1(A or B)FAIL\_P(1, 2 or 3) or STS(A or B)INERX\_P(1, 2 or 3). The highlighted A or B in the conddescr indicates which side (A or B) of the STS\*\* bus the error was detected on. The highlighted (1, 2 or 3) indicates the internal STS-1 path to interconnected equipment.

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 10 of 39	026

**BUERR/CTNEQPT (cont)**



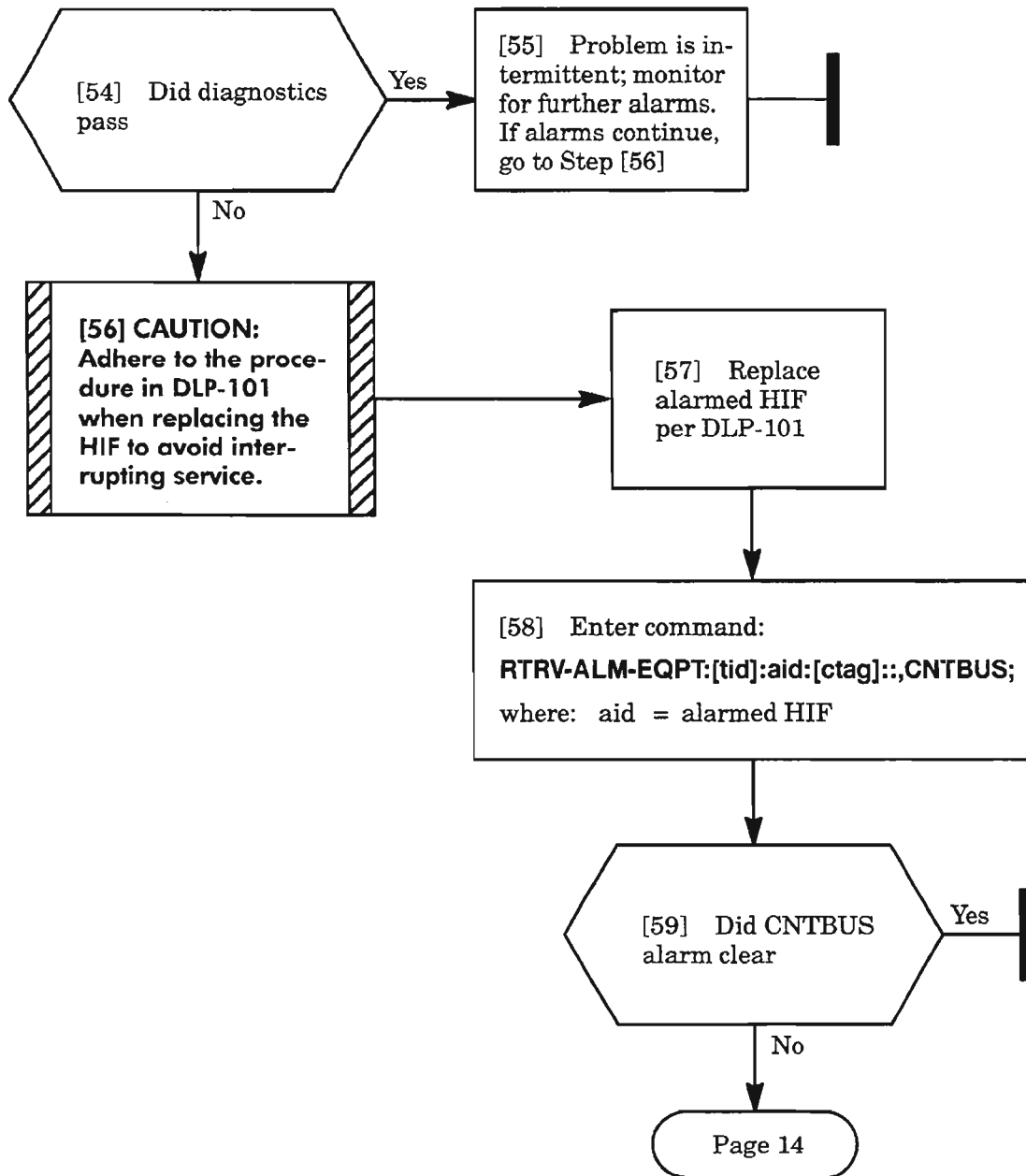
# CNTBUS



ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 12 of 39	026



**CNTBUS (cont)**



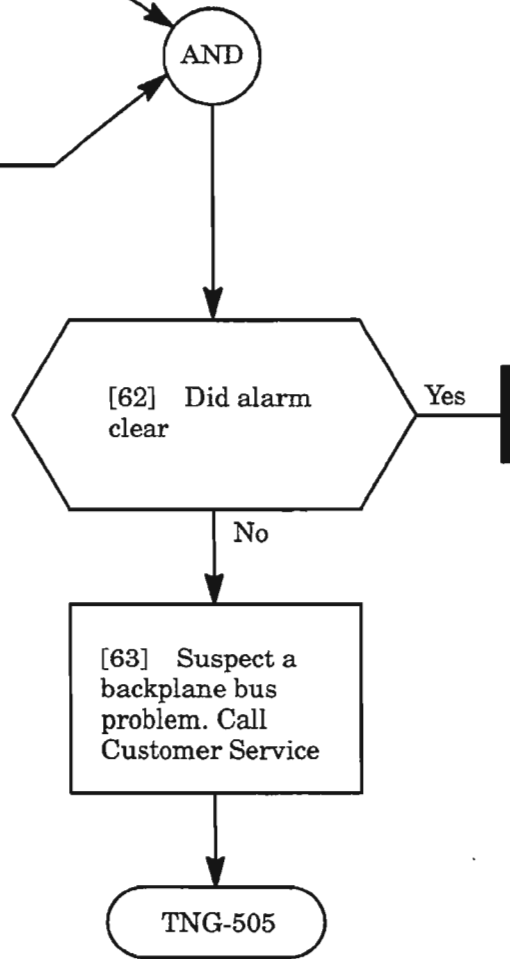
# CNTBUS (cont)

[60] Replace the standby NEP per DLP-101

[61] Enter command:

RTRV-ALM-EQPT:[tid]:aid:[ctag]::,CNTBUS;

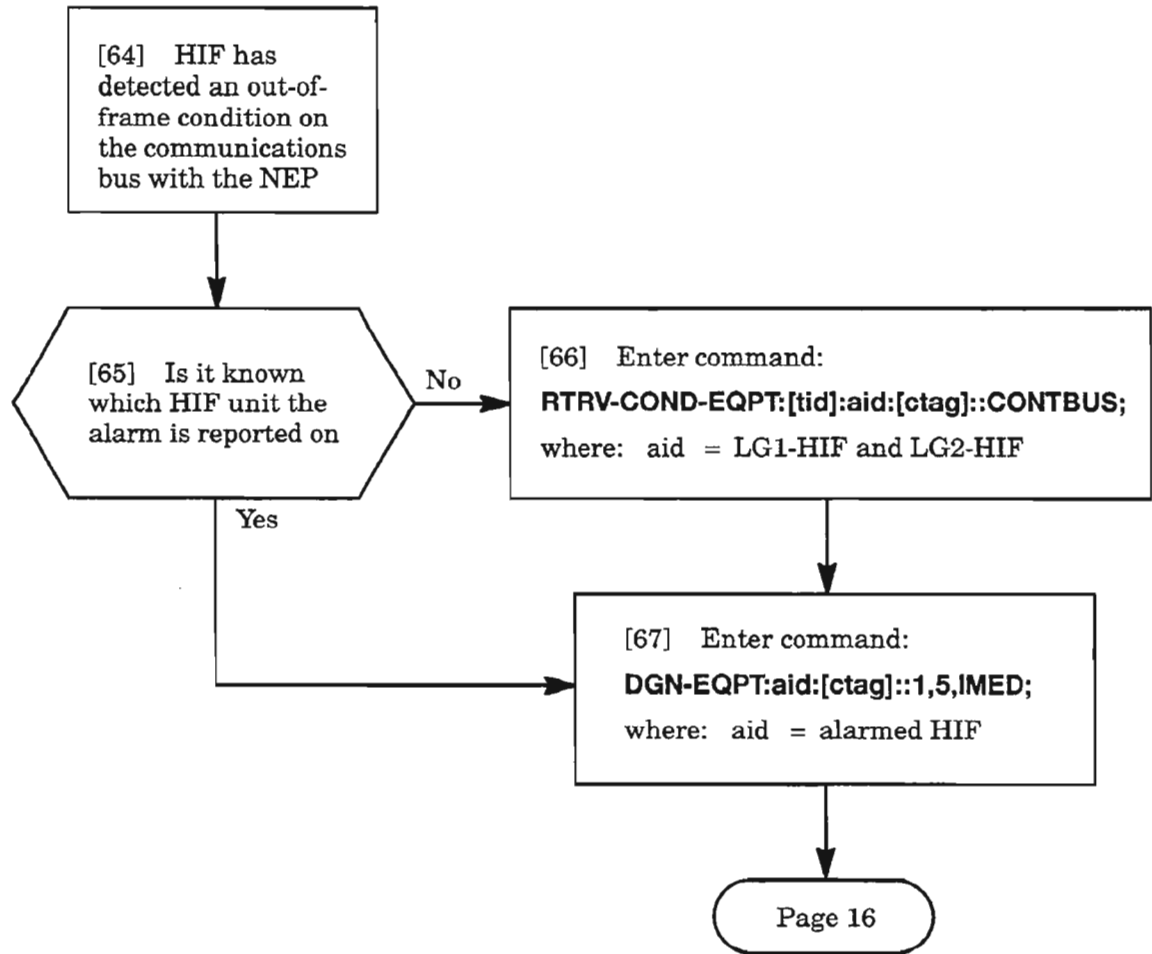
where: aid = alarmed HIF



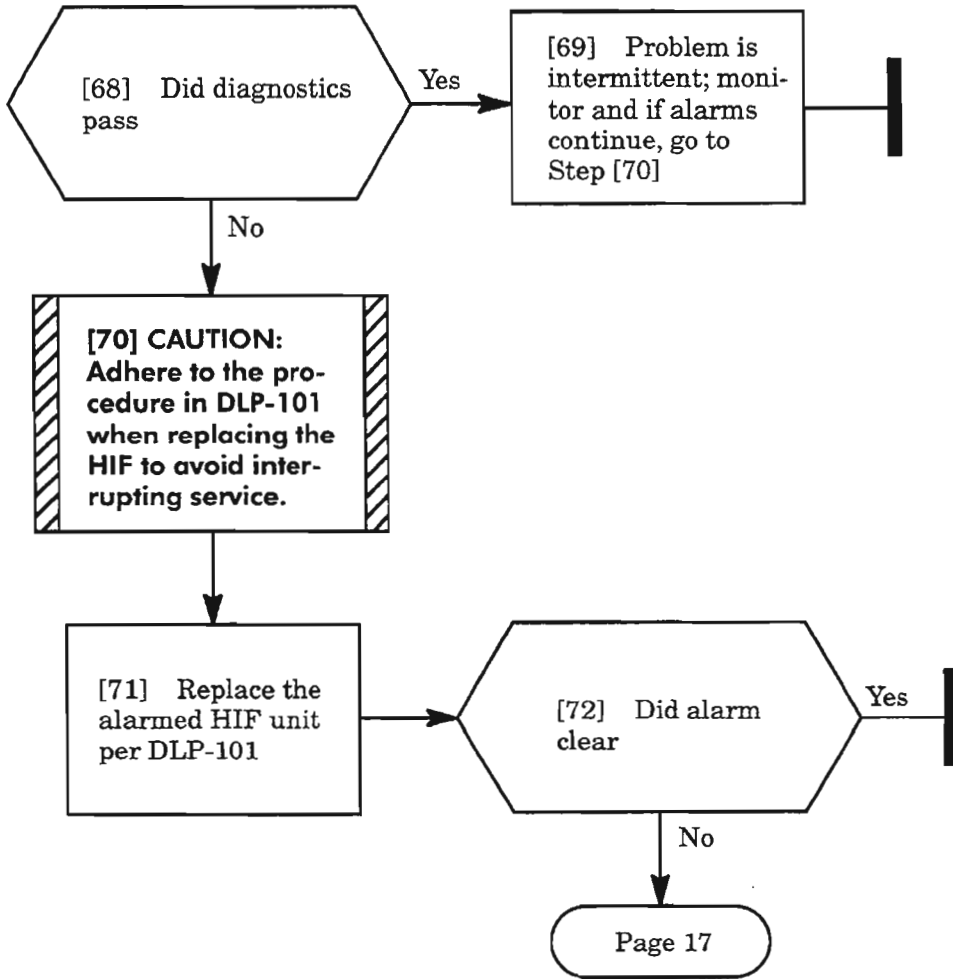
ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 14 of 39	026

CLEAR HIF UNIT ALARM

# CONTBUS



**CONTBUS (cont)**



ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 16 of 39	026

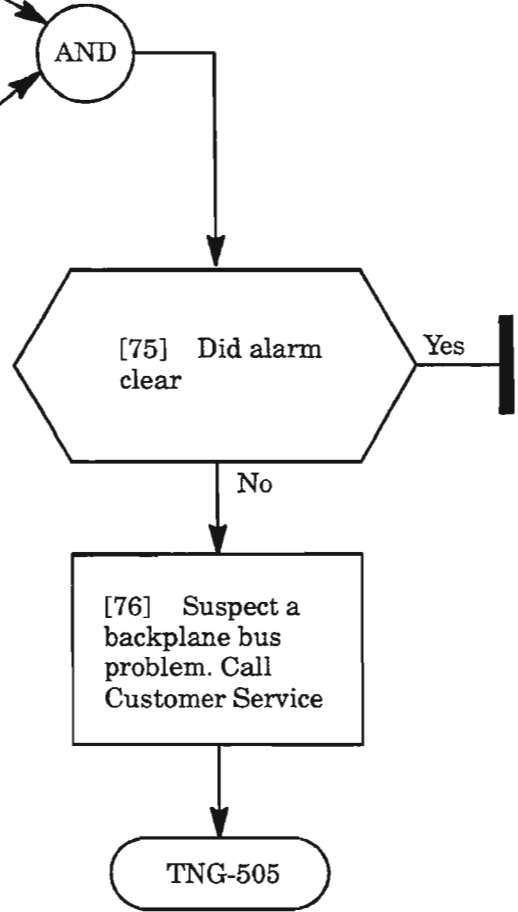
# CONTBUS (cont)

[73] Replace the NEP per DLP-101

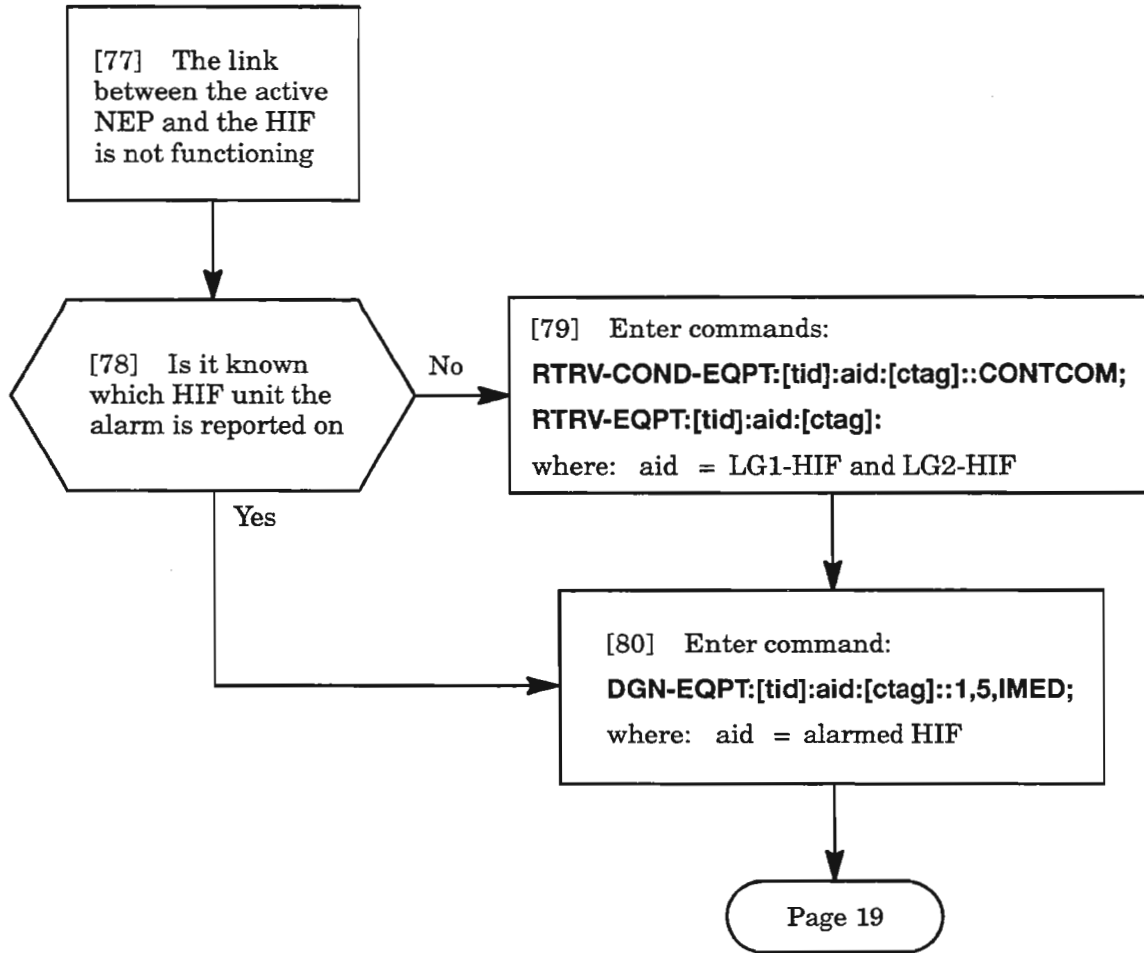
[74] Enter command:

**RTRV-ALM-EQPT:[tid]:aid:[ctag]::,CONTBUS;**

where: aid = alarmed HIF

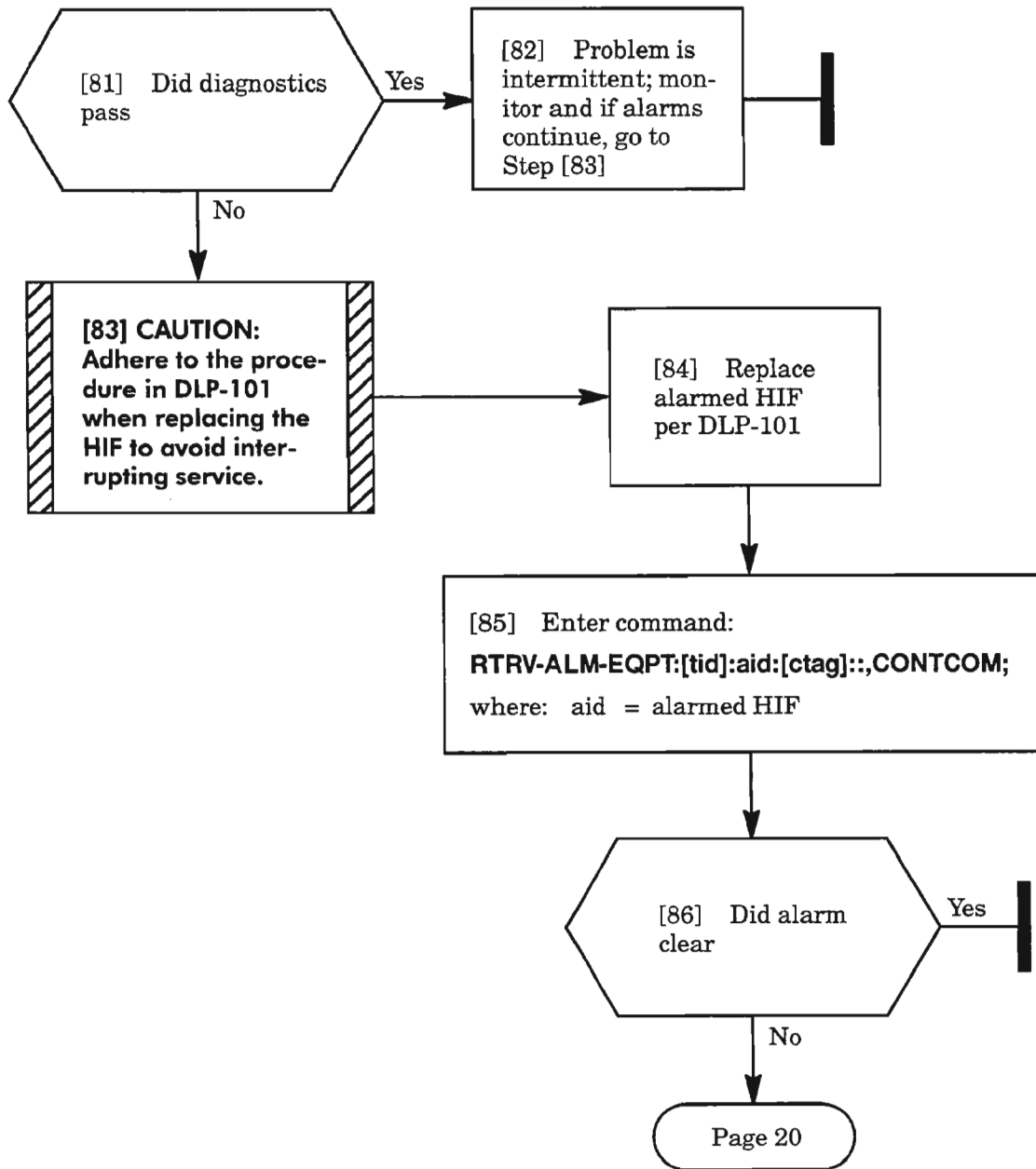


# CONTCOM



ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 18 of 39	026

# CONTCOM (cont)



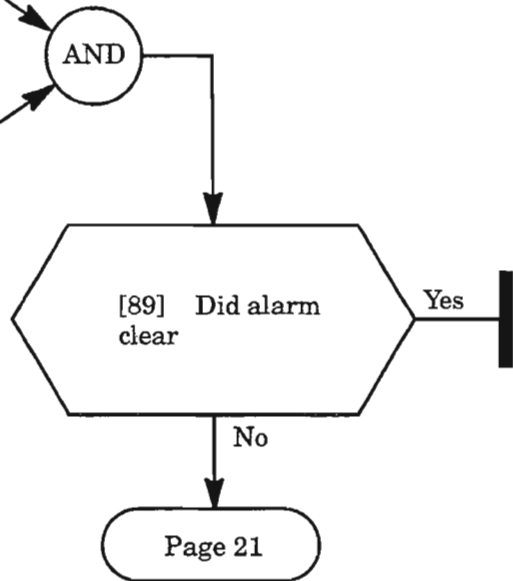
# CONTCOM (cont)

[87] Replace the NEP per DLP-101

[88] Enter command:

**RTRV-ALM-EQPT:[tid]:aid:[ctag]::,CONTCOM;**

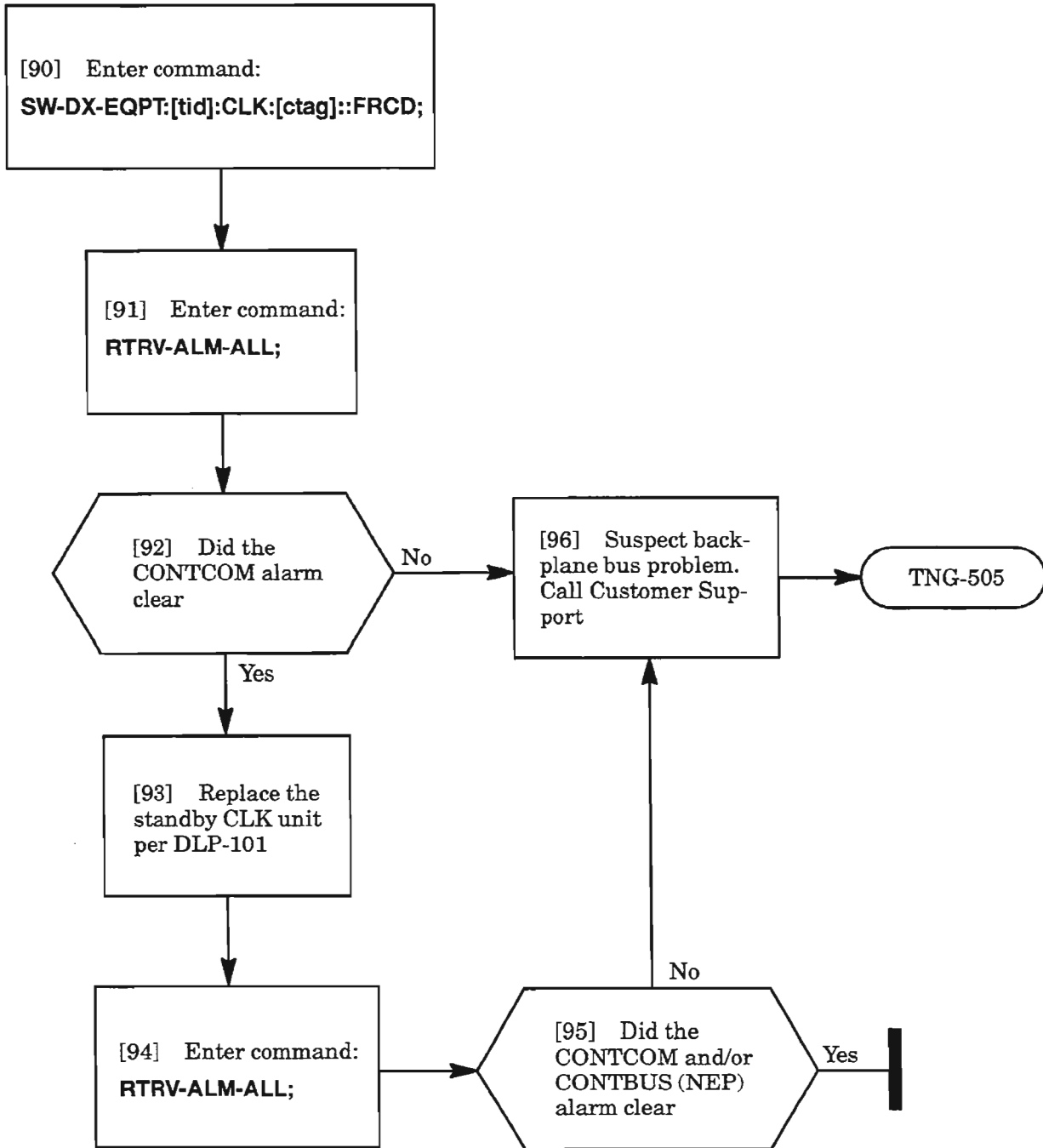
where: aid = alarmed HIF



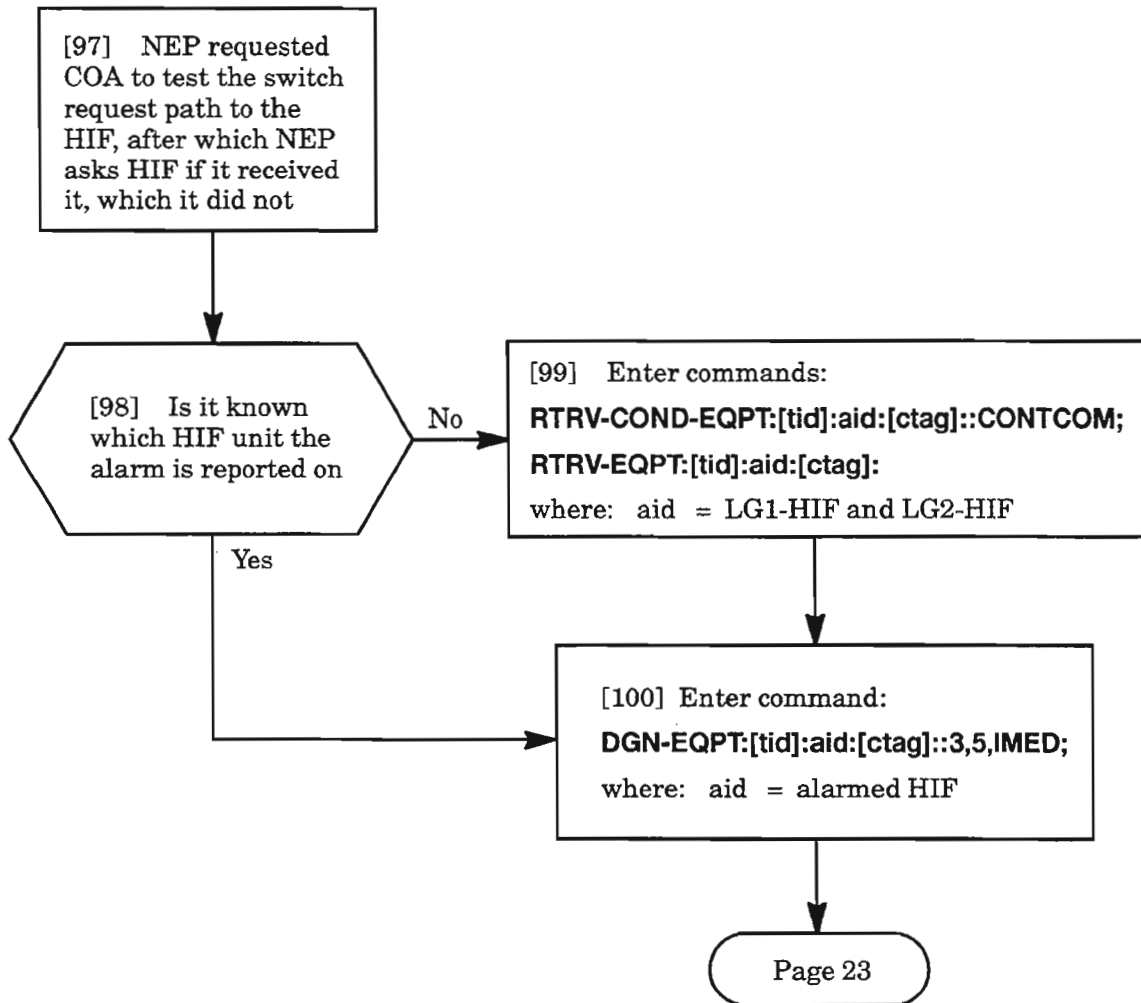
ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 20 of 39	026



**CONTCOM (cont)**

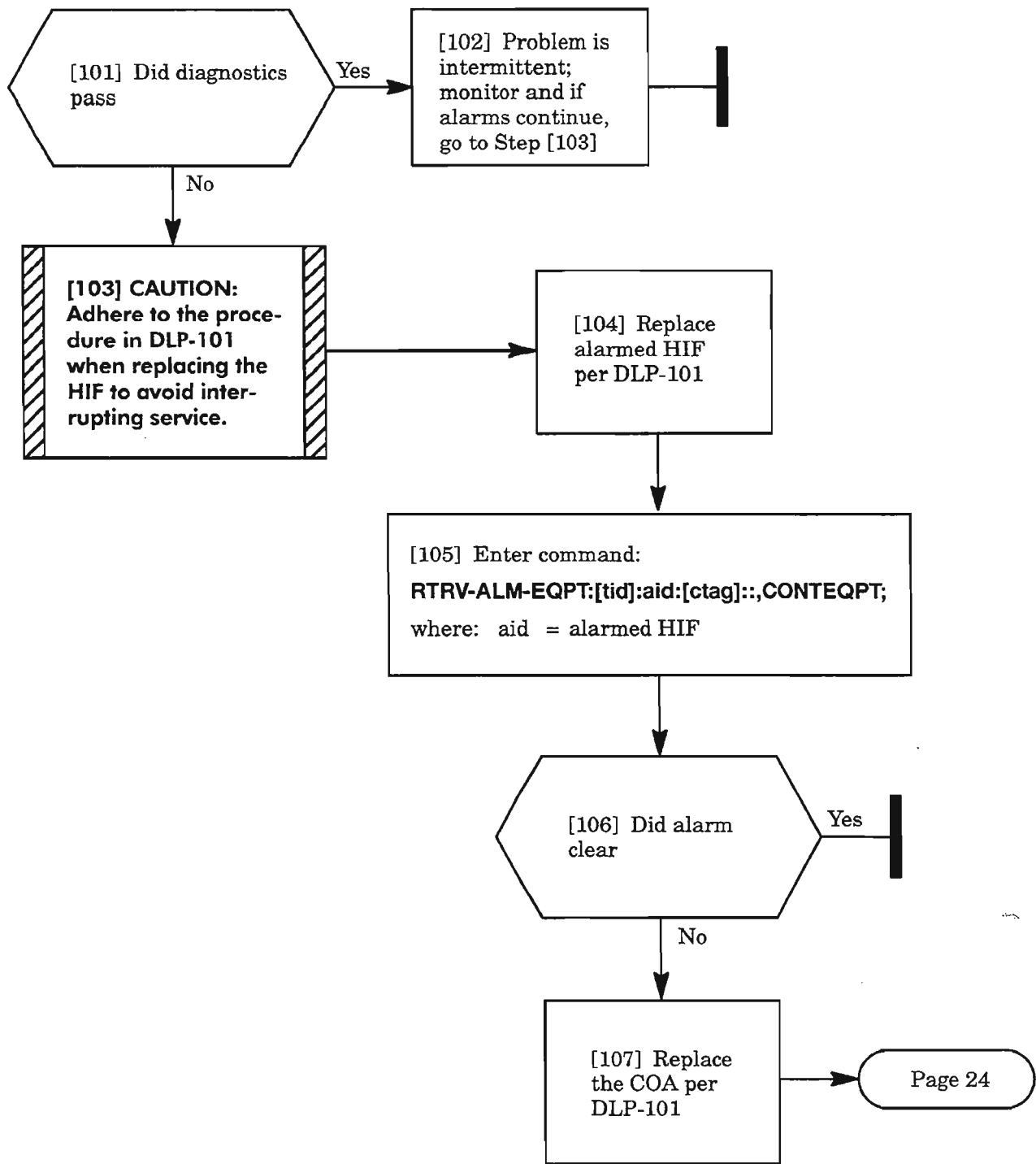


# CONTEQPT

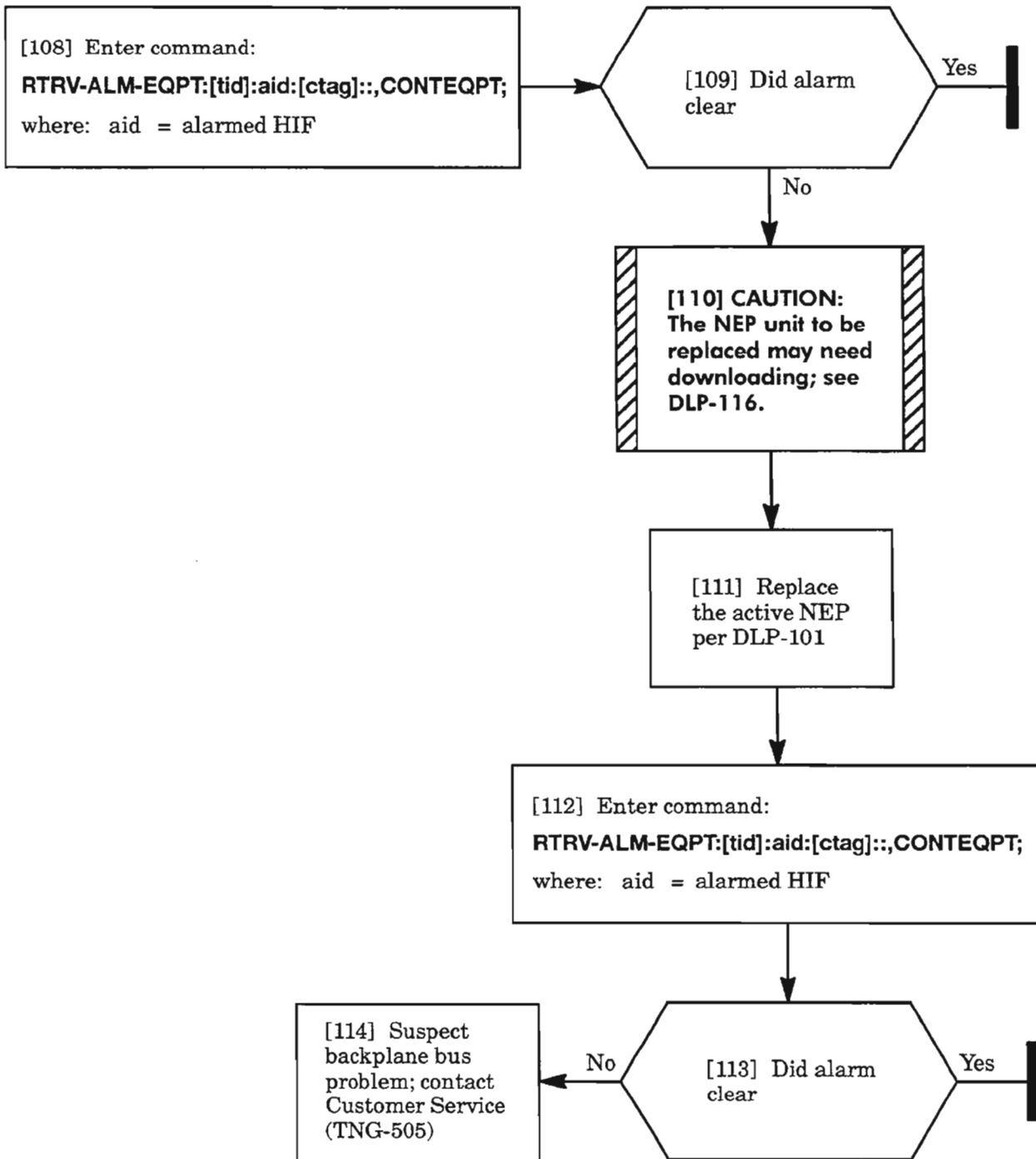


ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 22 of 39	026

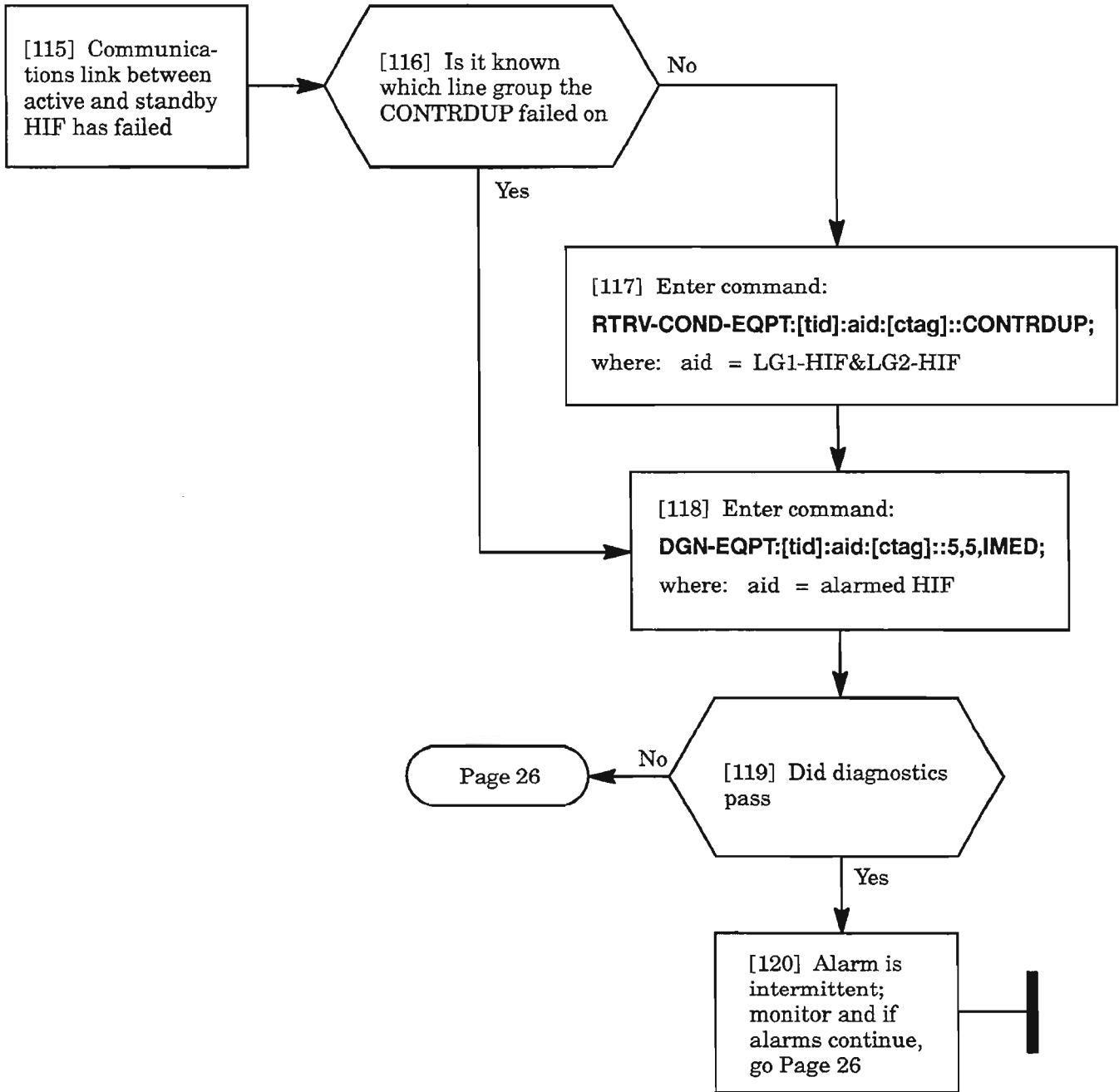
**CONTEQPT (cont)**



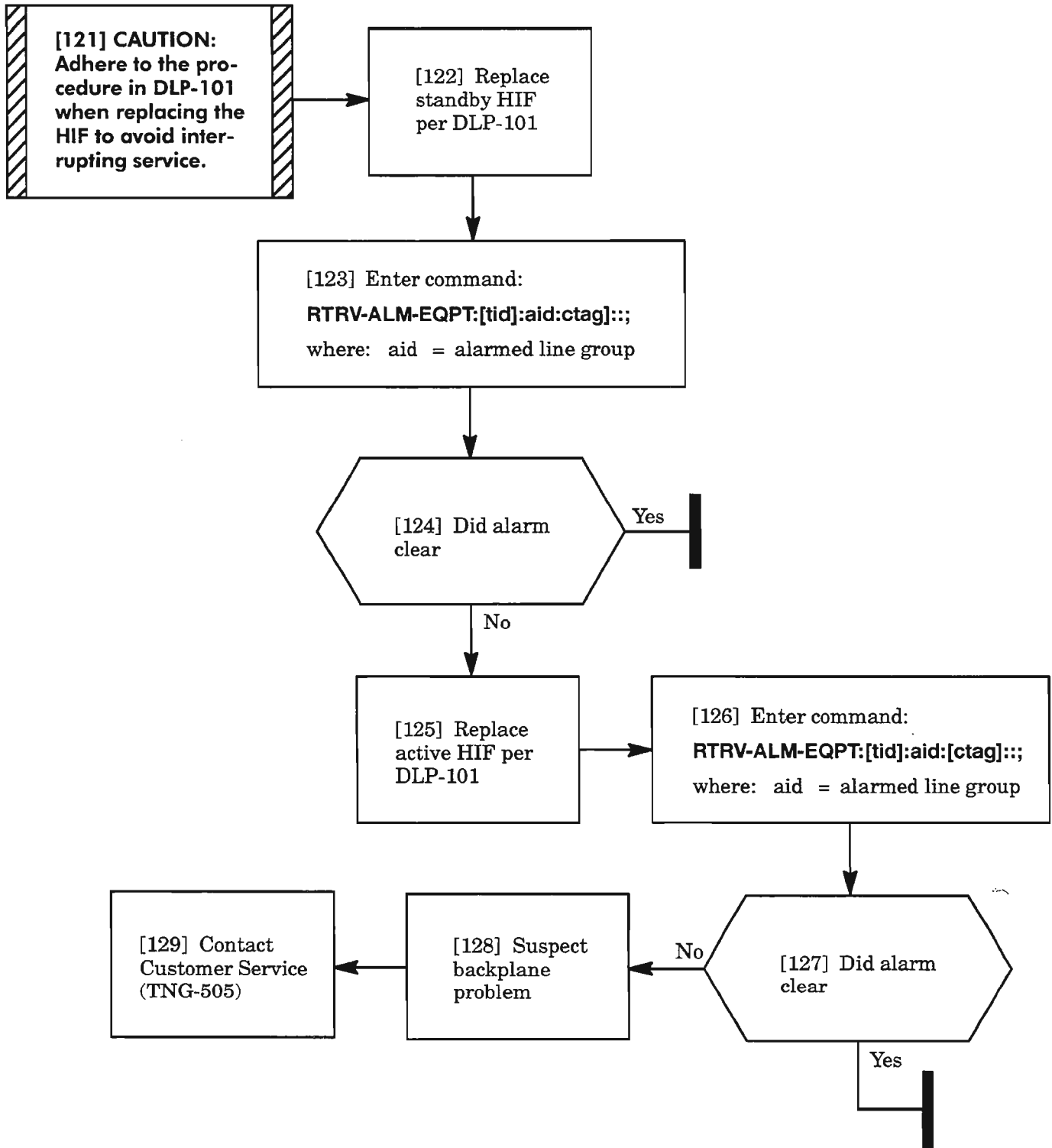
**CONTEQPT (cont)**



# CONTRDUP

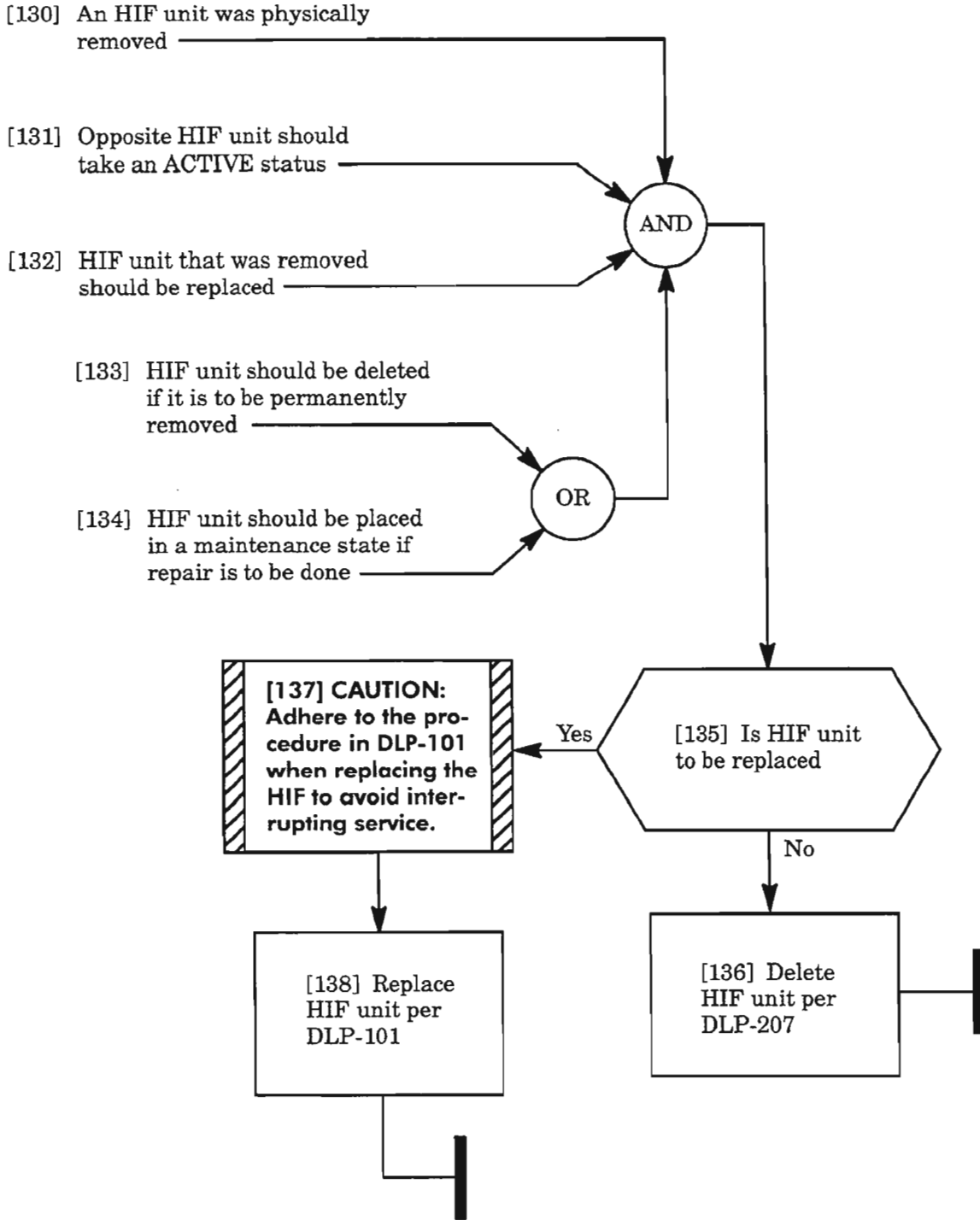


**CONTRDUP (cont)**

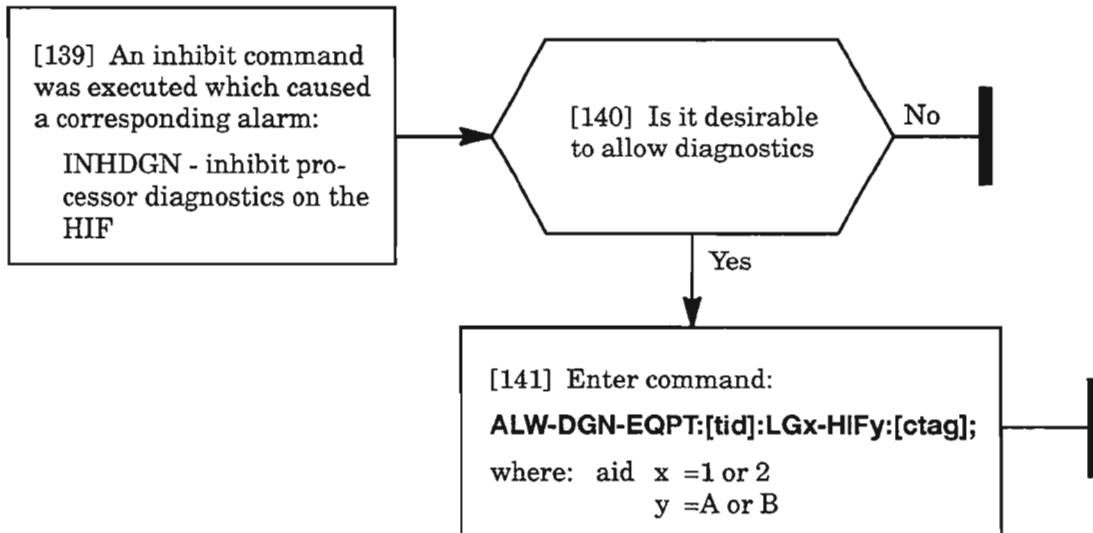


ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 26 of 39	026

# IMPROPRMVL



# INH DGN

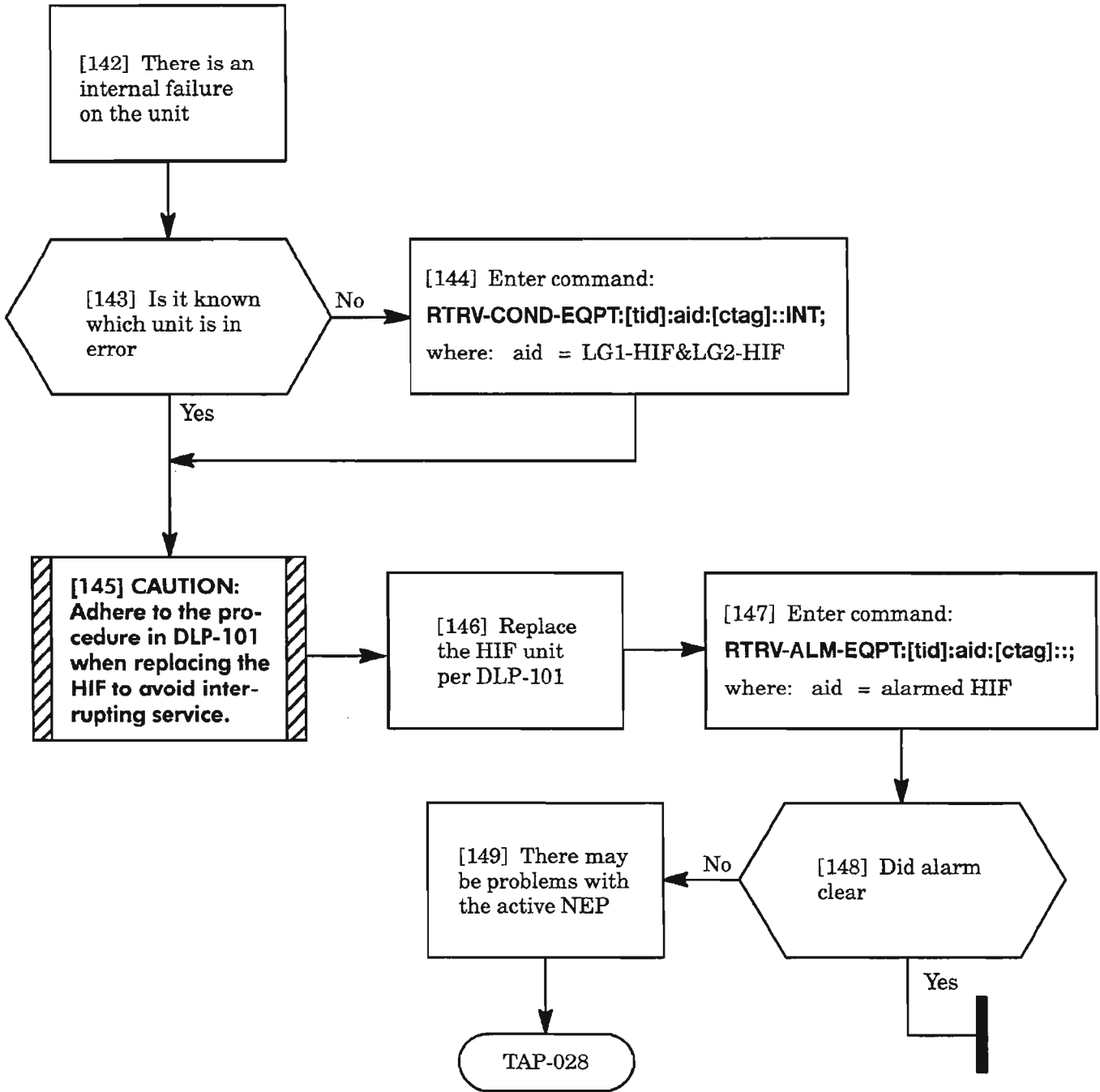


ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 28 of 39	026

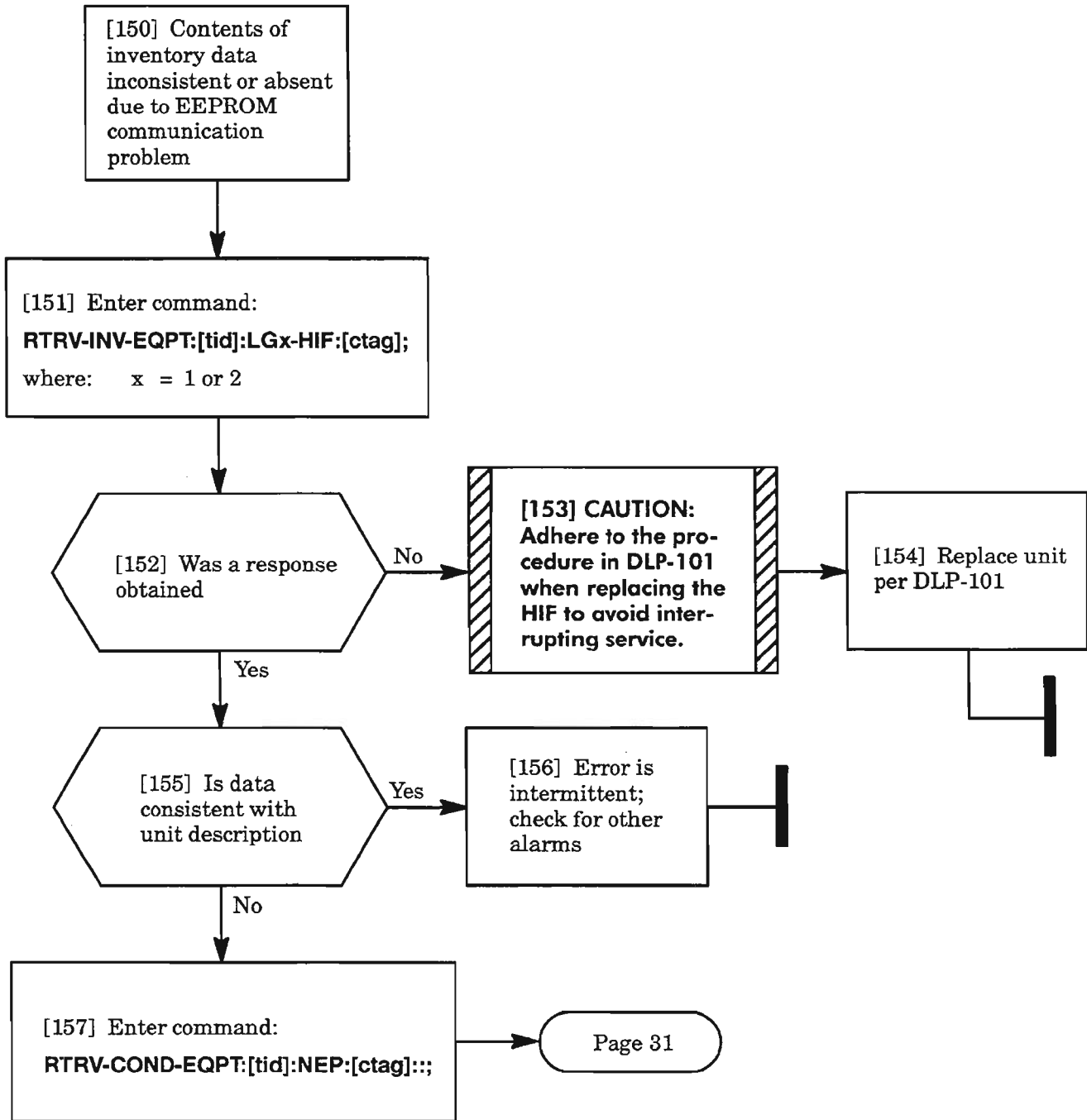
CLEAR HIF UNIT ALARM



**INT**

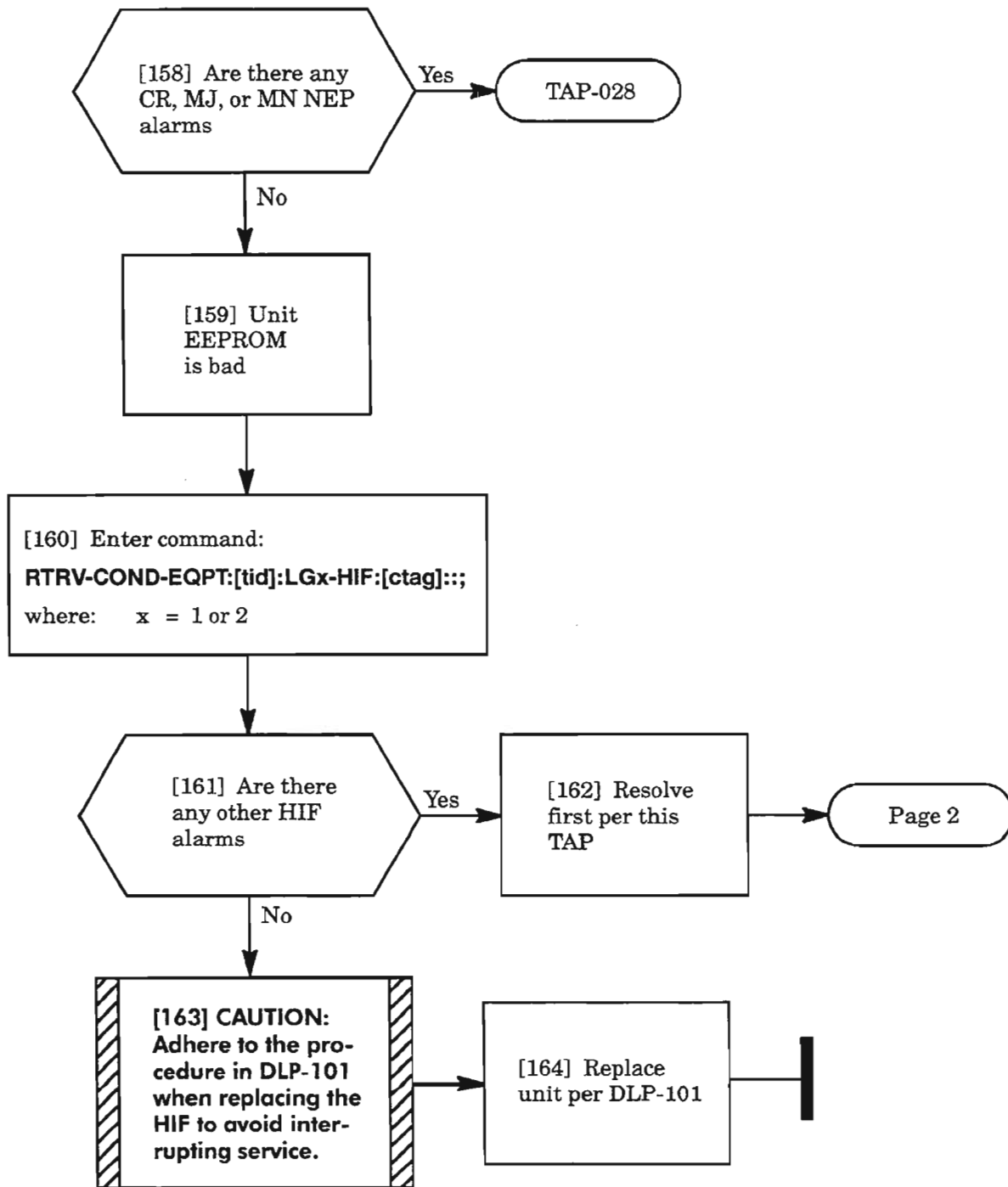


# INVERR

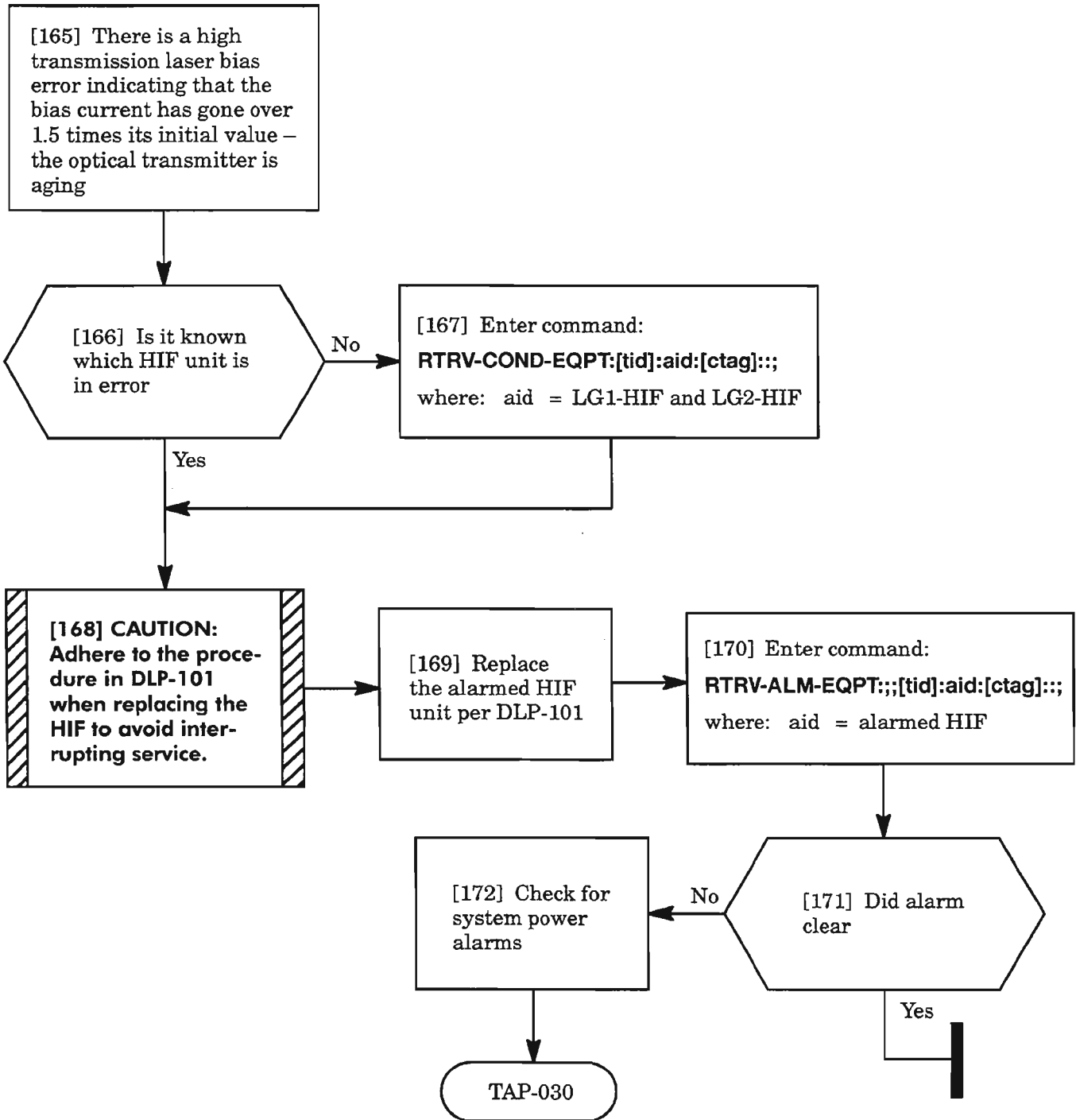


ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 30 of 39	026

**INVERR (cont)**

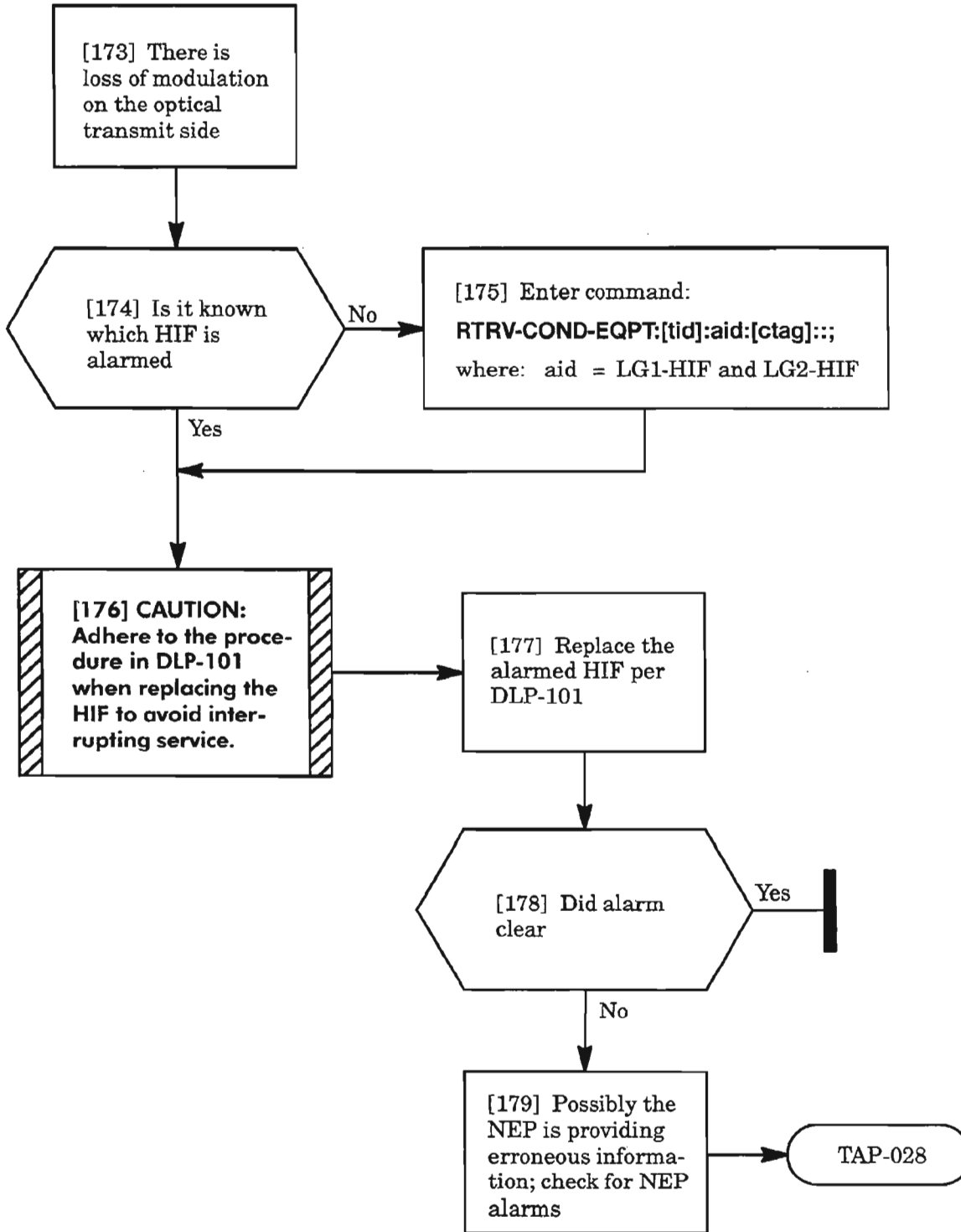


**LBCL**



ISSUE 3	OCT 1994
ALCL 363-203-502	TAP 026
PAGE 32 of 39	

LOM



**MEA**

[180] The data base entry for the alarmed unit does not match equipment type parameter on unit EEPROM

[181] Enter the following command:

**RTRV-INV-EQPT:[tid]:LGx-HIF:[ctag];;**

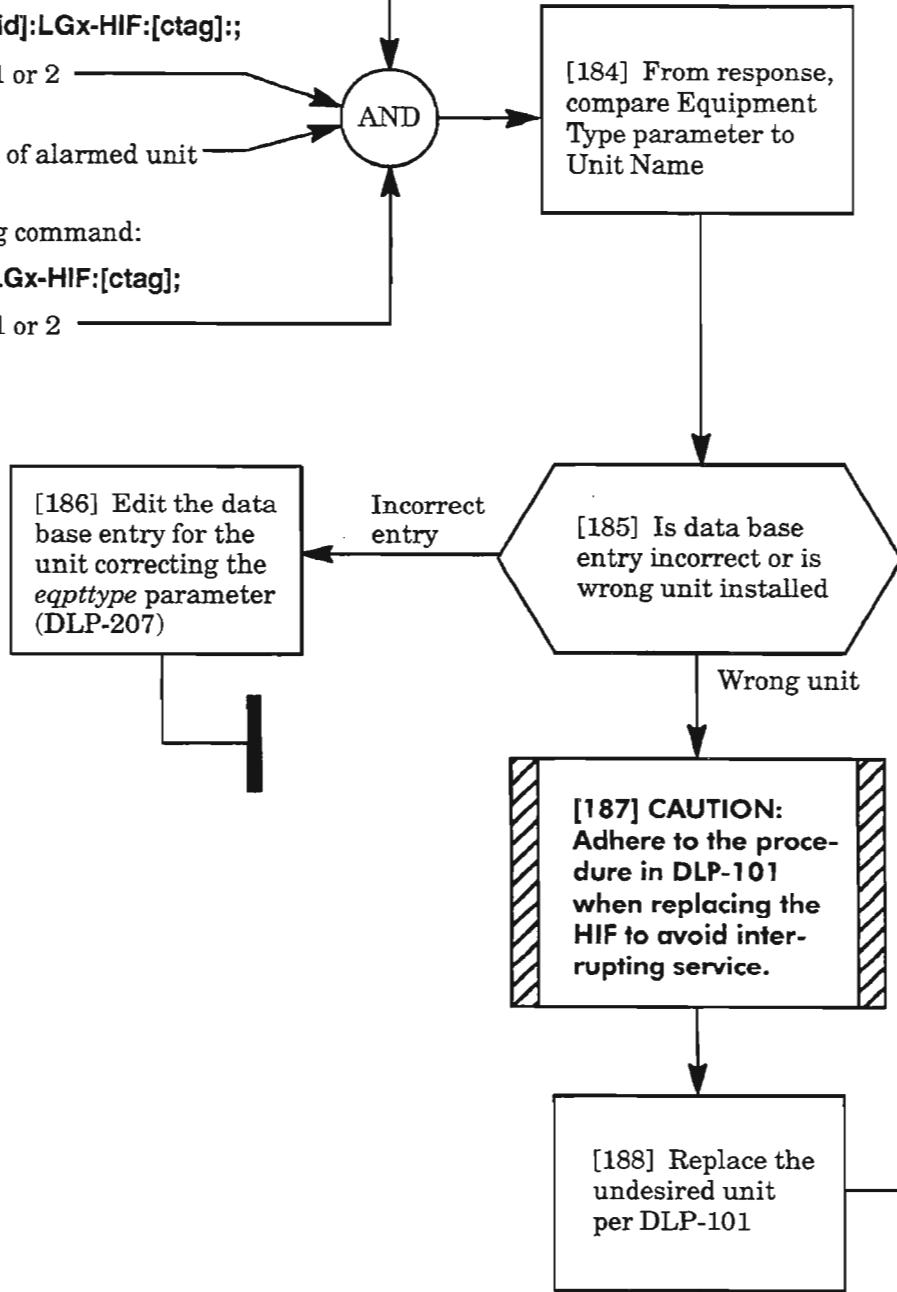
where: x = 1 or 2

[182] Record Unit Name of alarmed unit

[183] Enter the following command:

**RTRV-EQPT:[tid]:LGx-HIF:[ctag];**

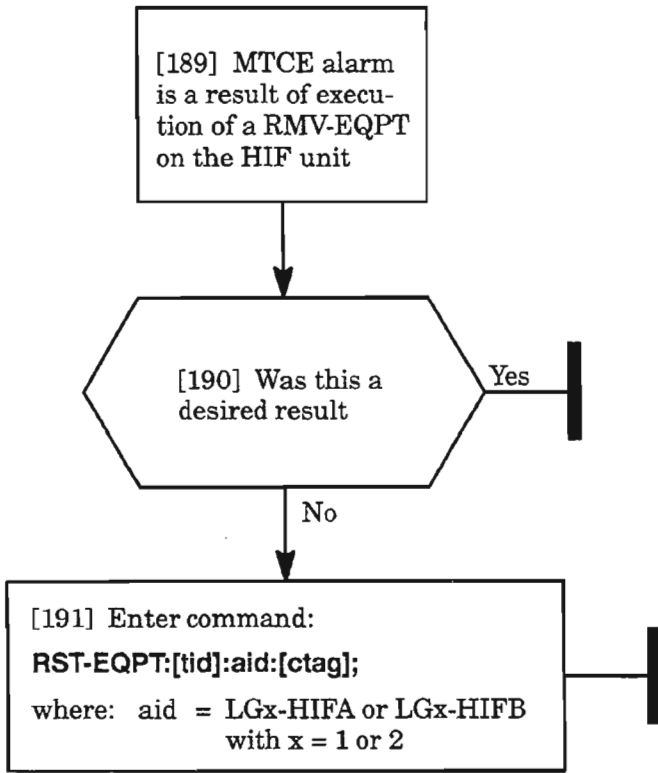
where: x = 1 or 2



ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 34 of 39	026

**CLEAR HIF UNIT ALARM**

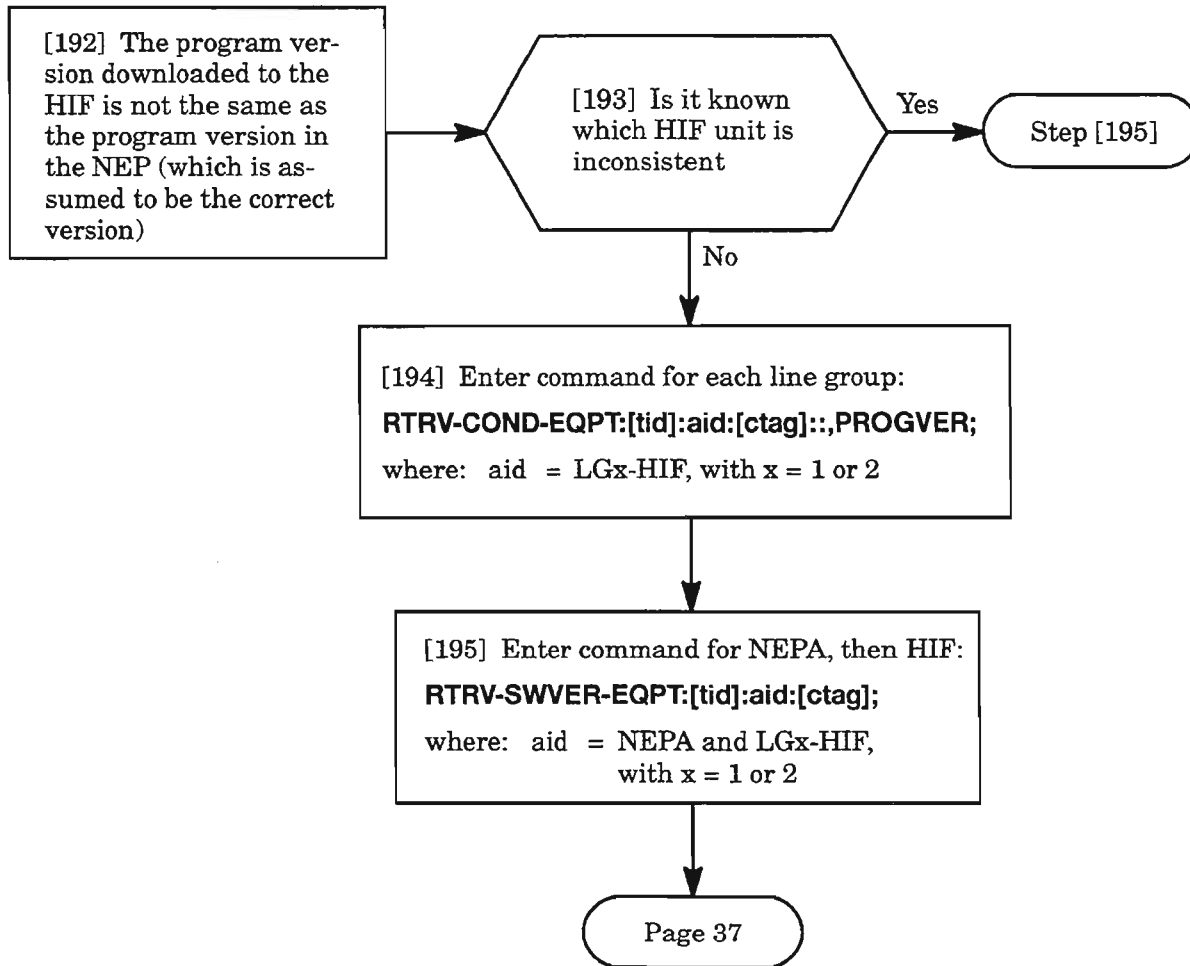
# MTCE



**CLEAR HIF UNIT ALARM**

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 35 of 39	026

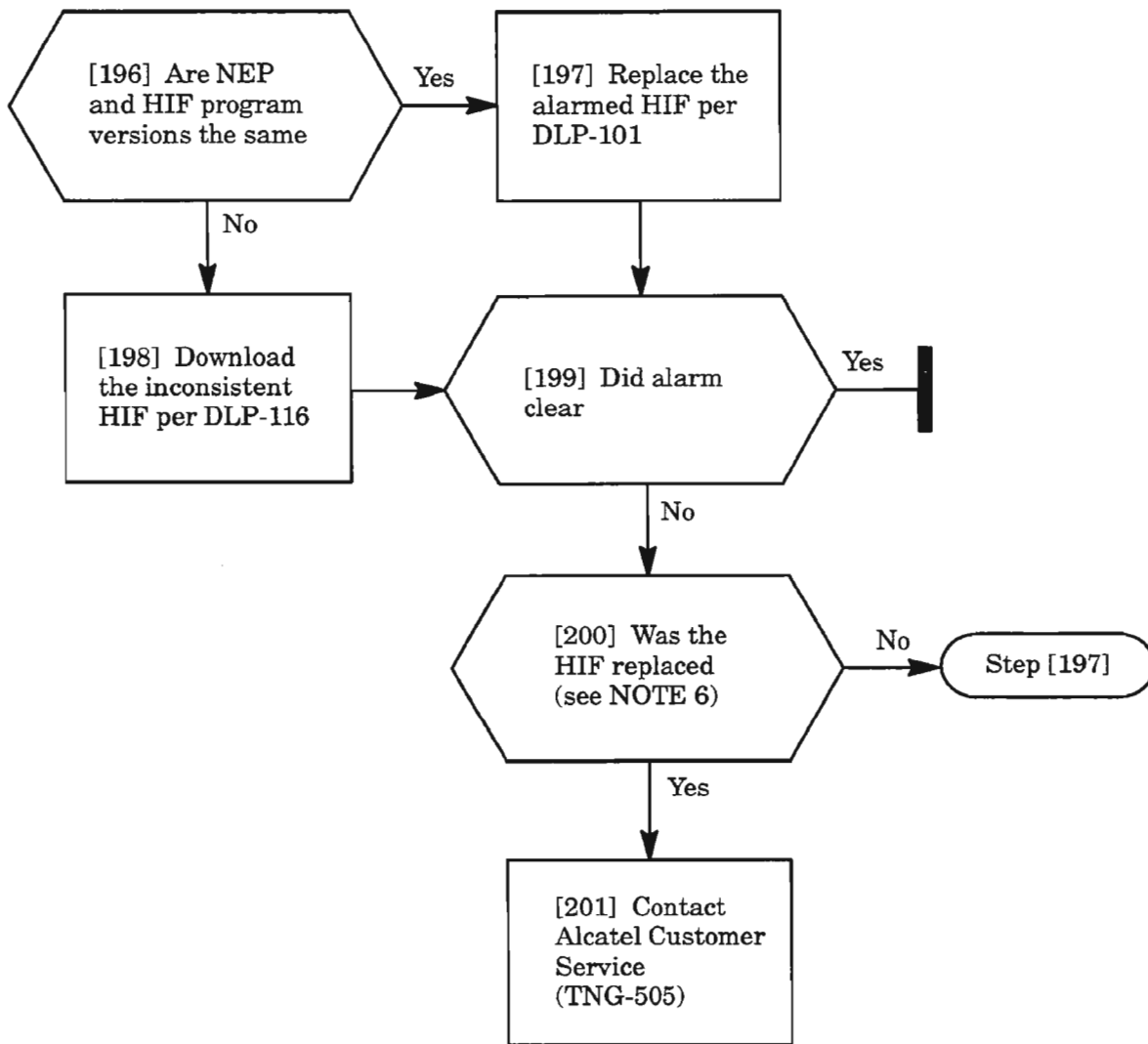
# PROGVER



ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 36 of 39	026

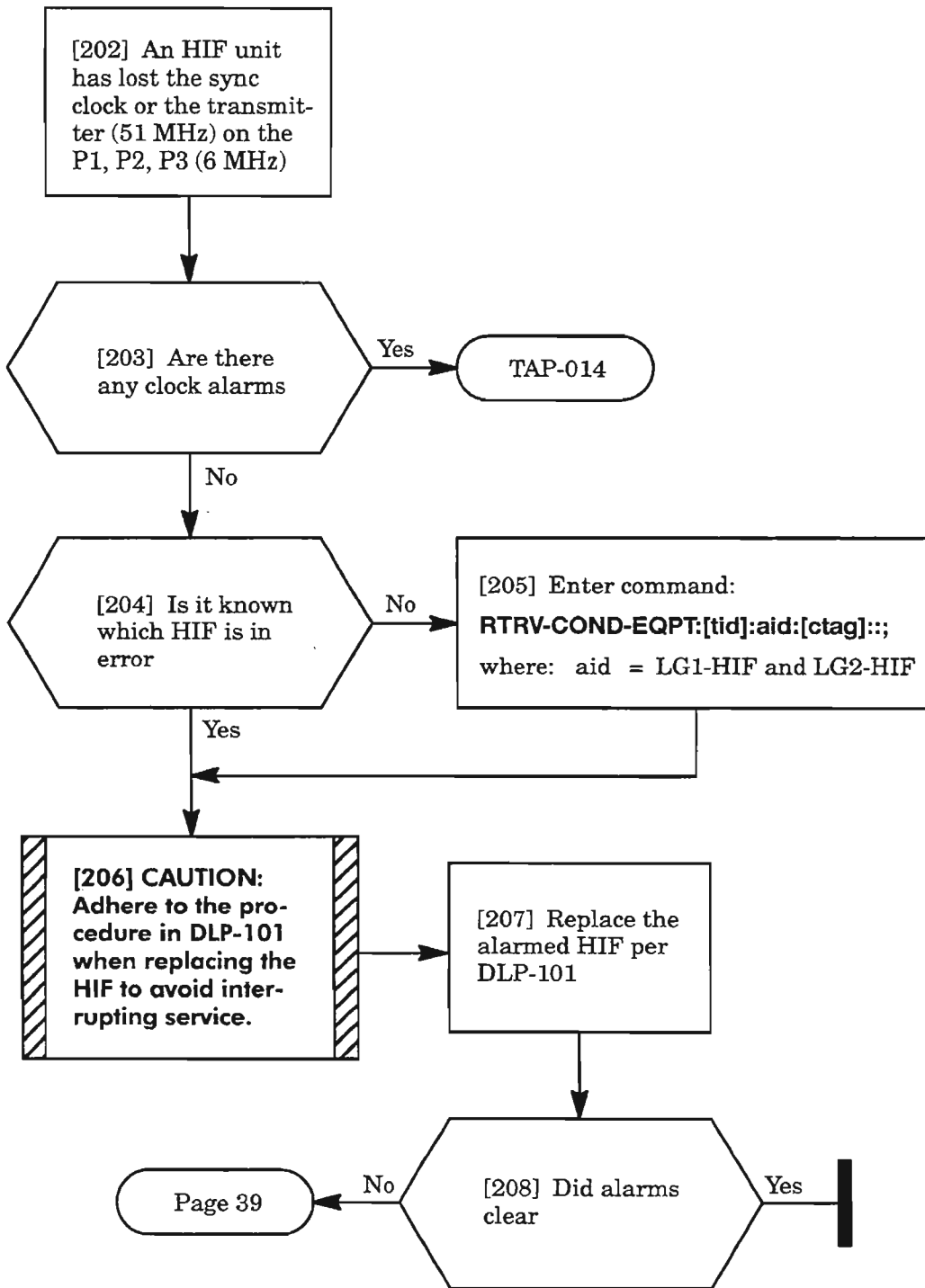


**PROGVER (cont)**

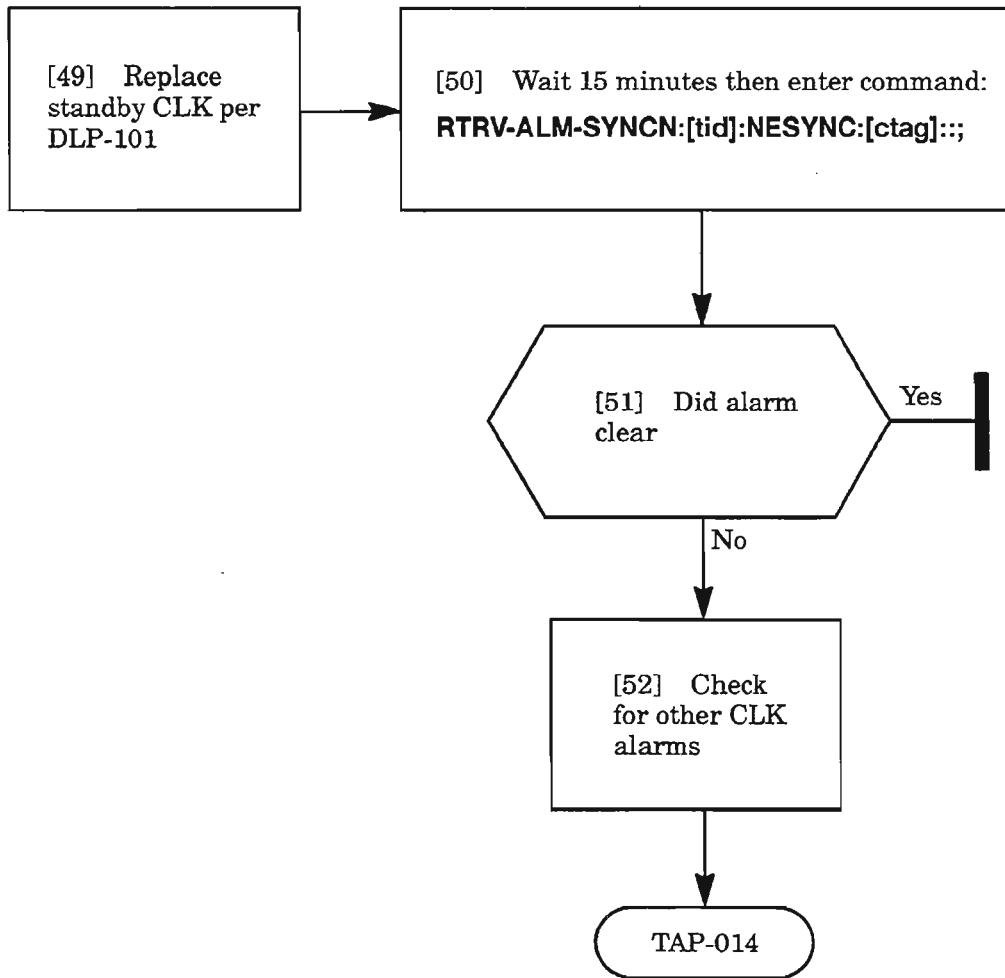


**NOTE: 6.** *If HIF was replaced and downloaded with the correct version, then the NEP may be the wrong version. Verify records.*

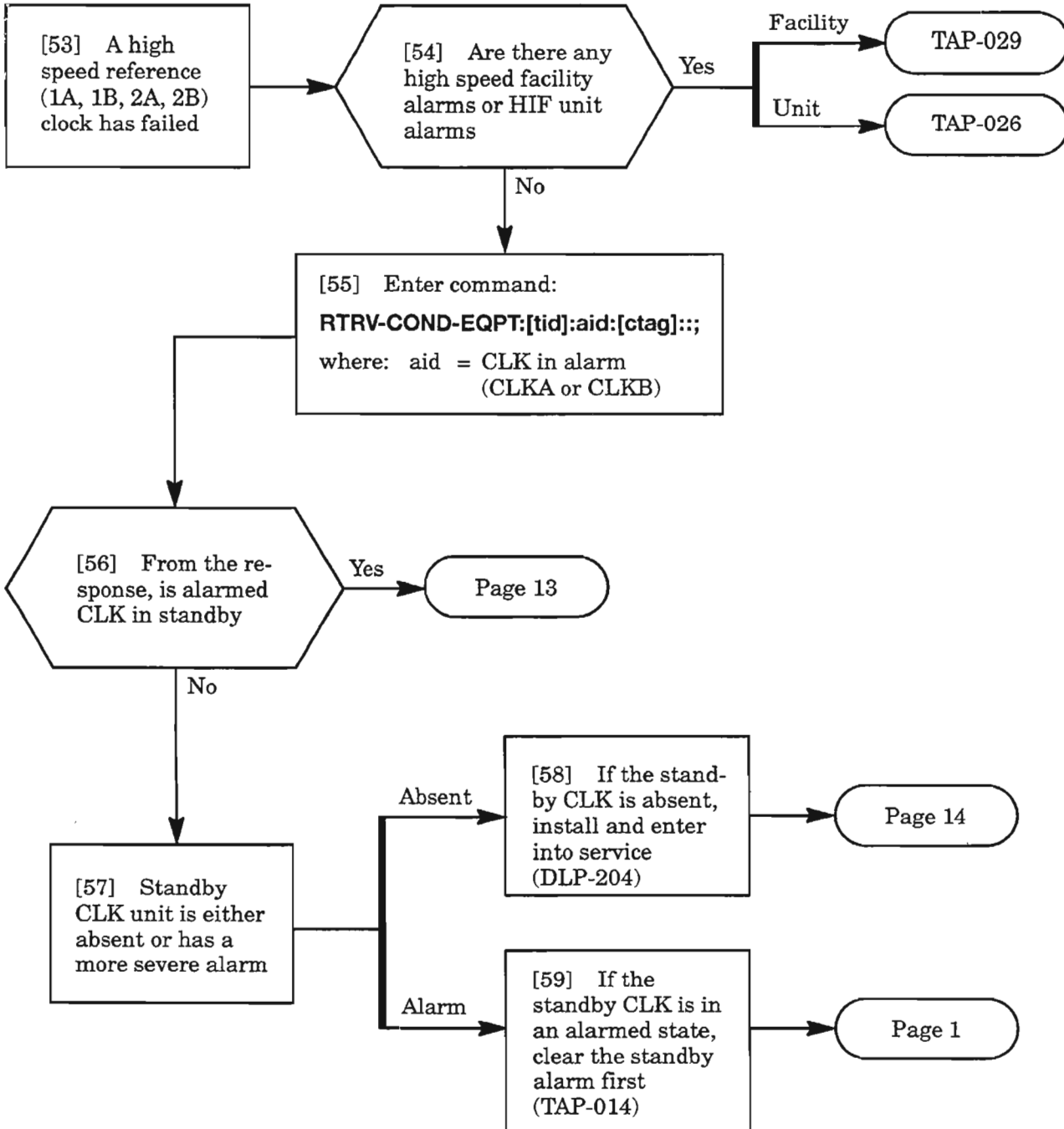
# SYNCCLK



**FST (cont)**

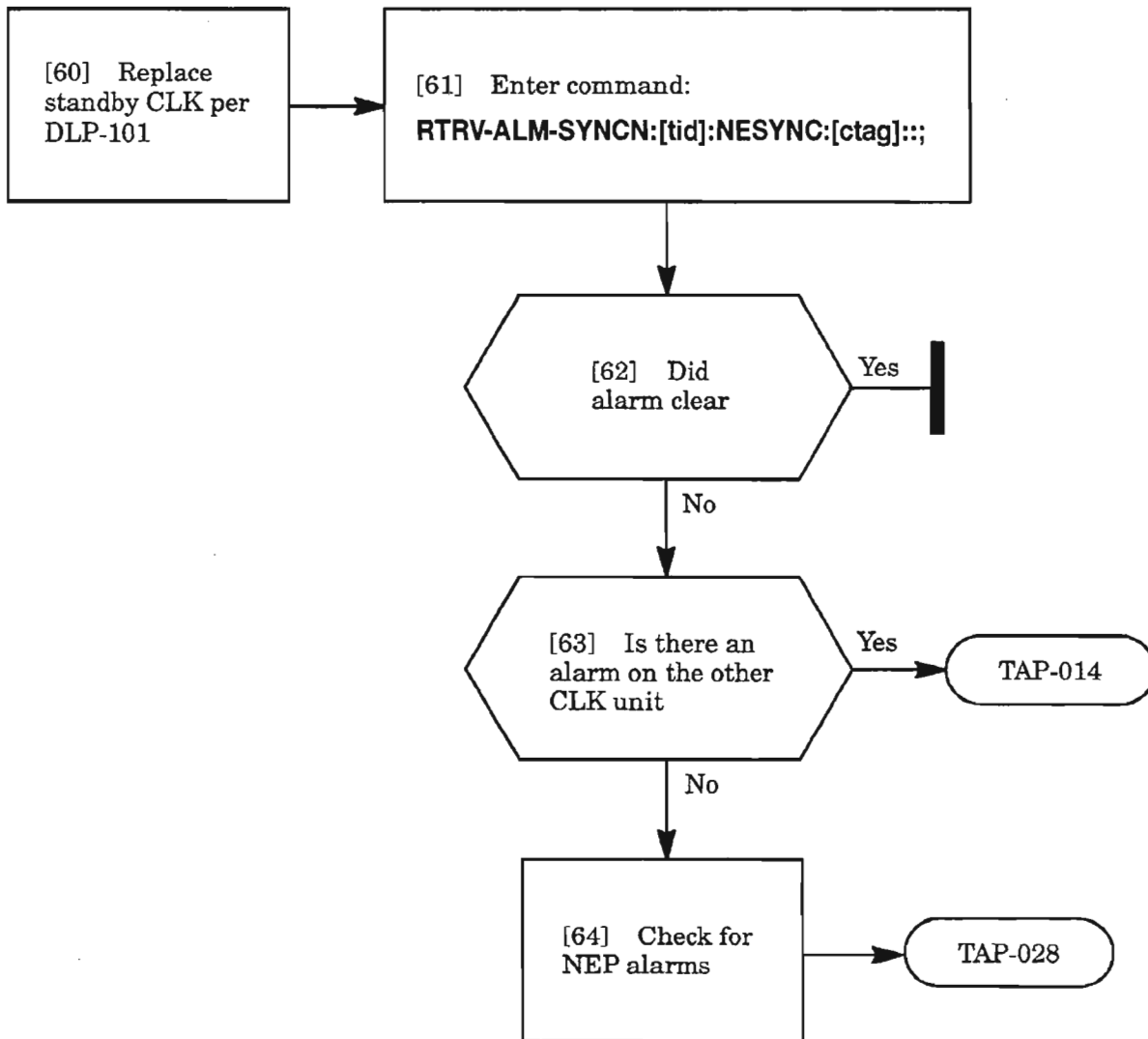


**HIFXXX**

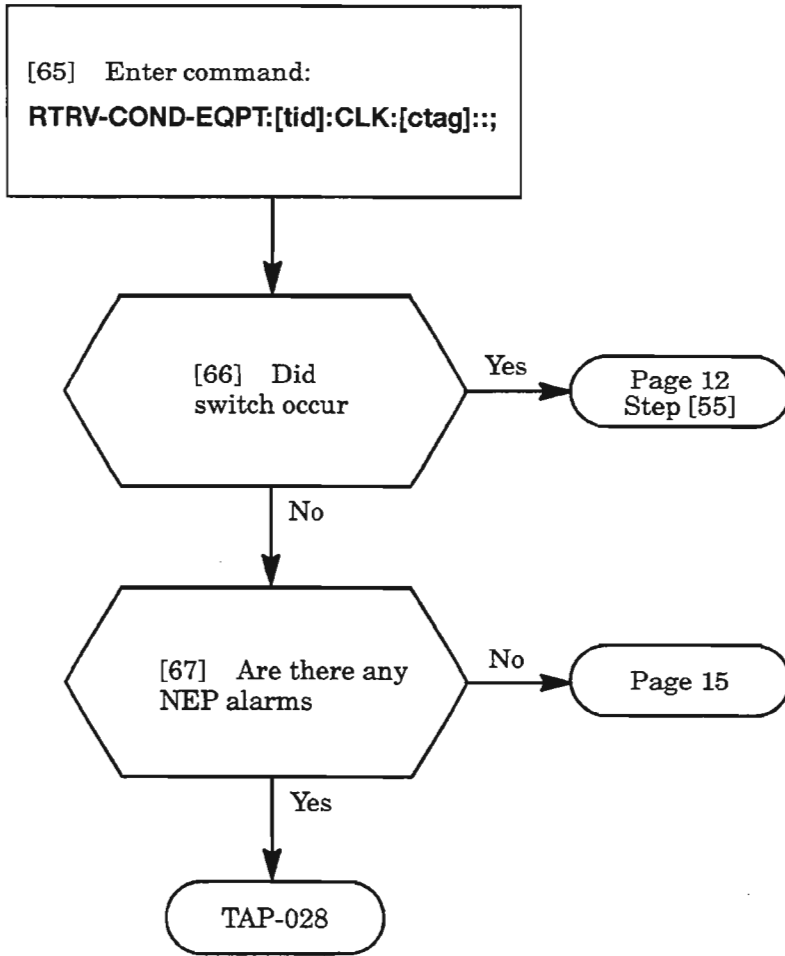


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 26	027

**HIFXXX (cont)**

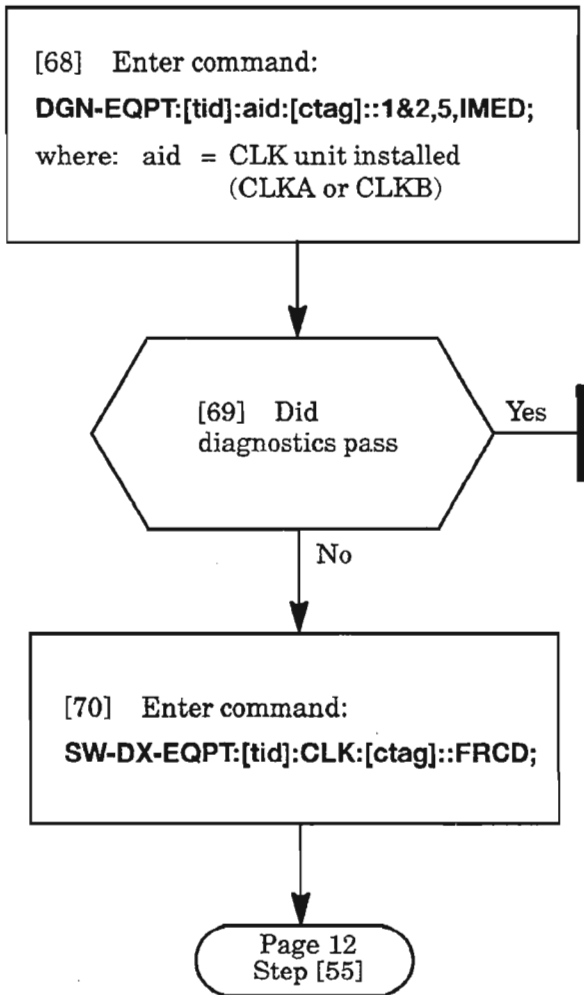


**HIFXXX (cont)**

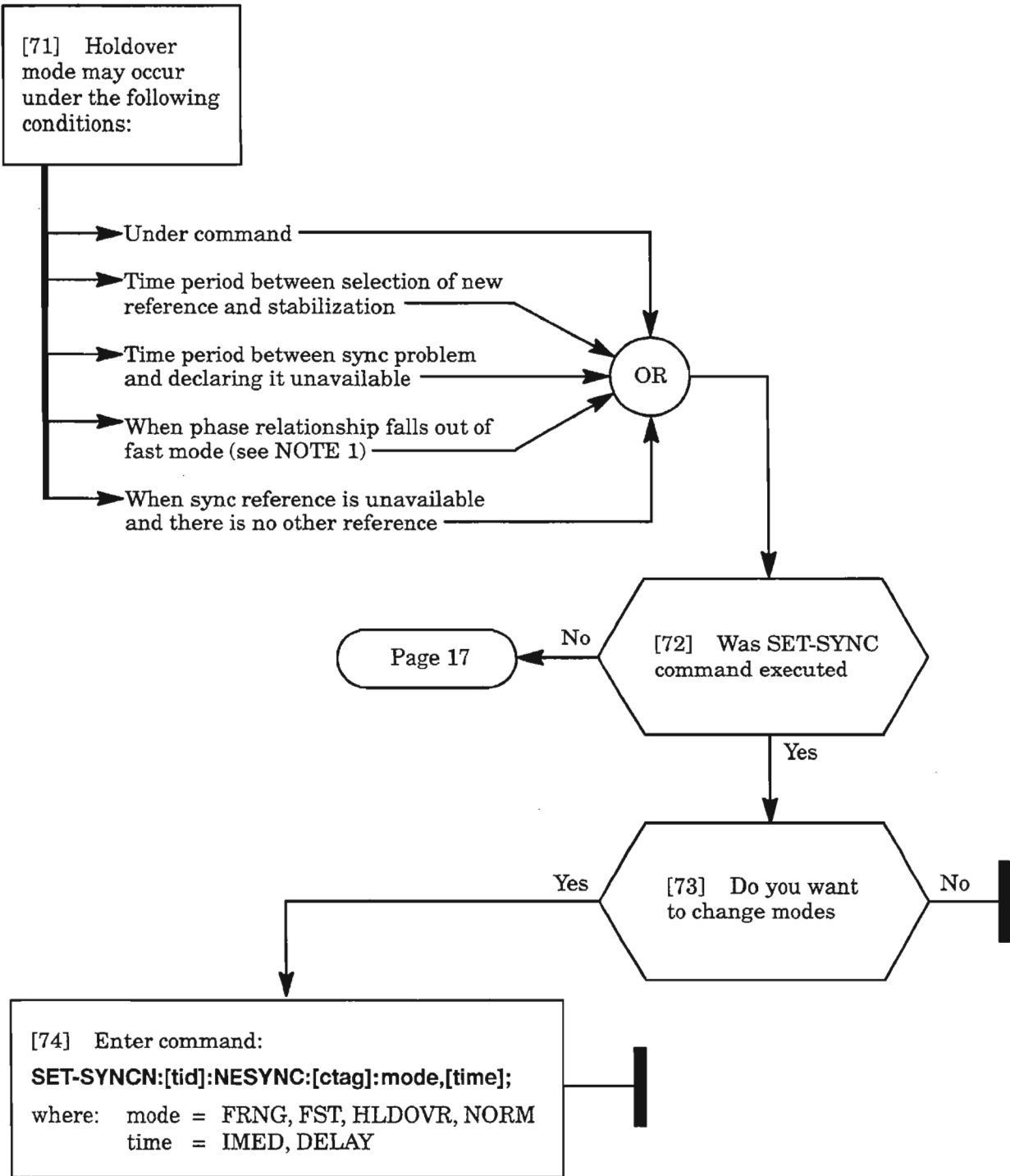


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 14 of 26	027

**HIFXXX (cont)**



# HLDOVR

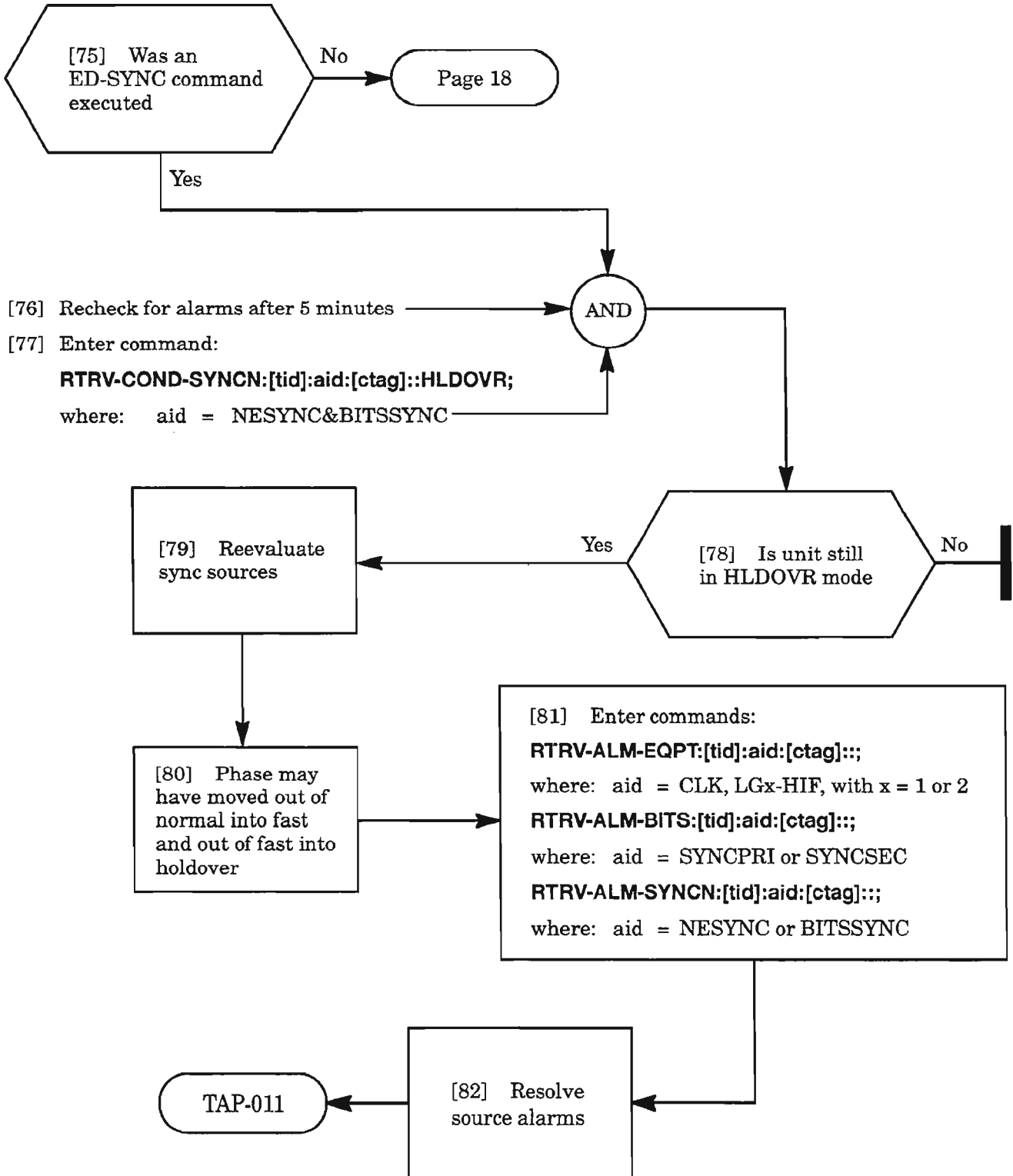


**NOTE:** 1. If mode was set to FST, circuit may not be stable enough to keep it in FST window and is failing, causing it to go into HLDOVR; go to Page 9.

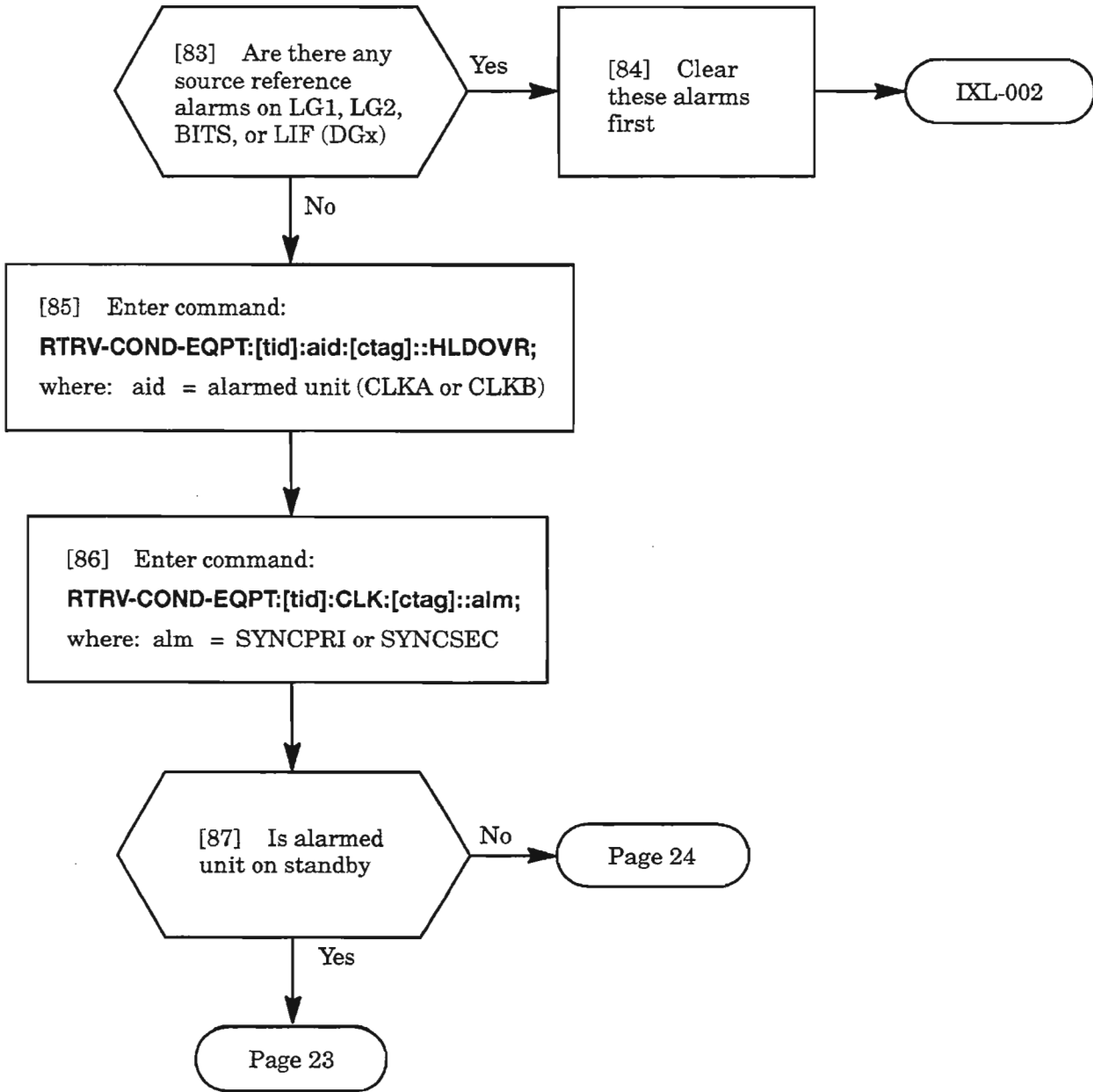
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 16 of 26	027



**HLDOVR (cont)**

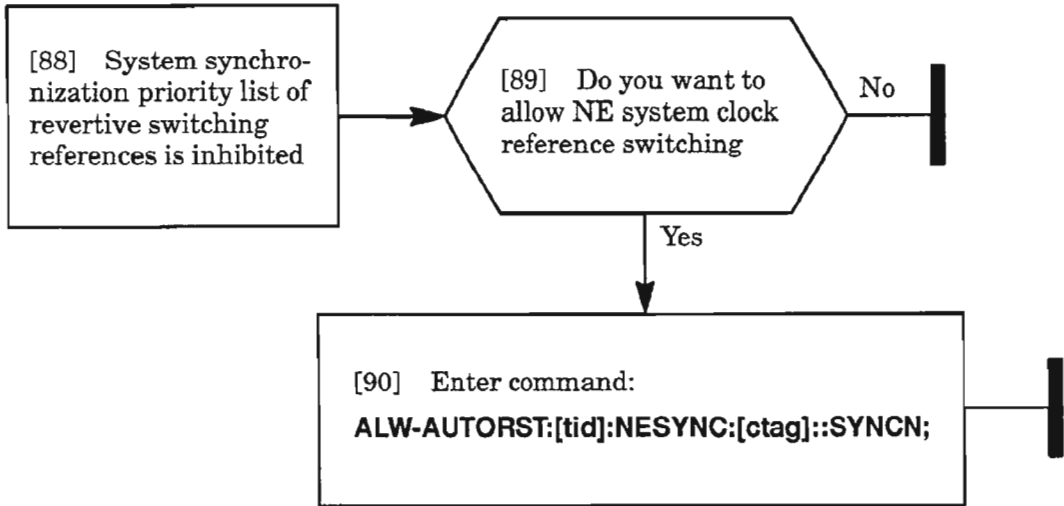


# HLDOVR (cont)



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 18 of 26	027

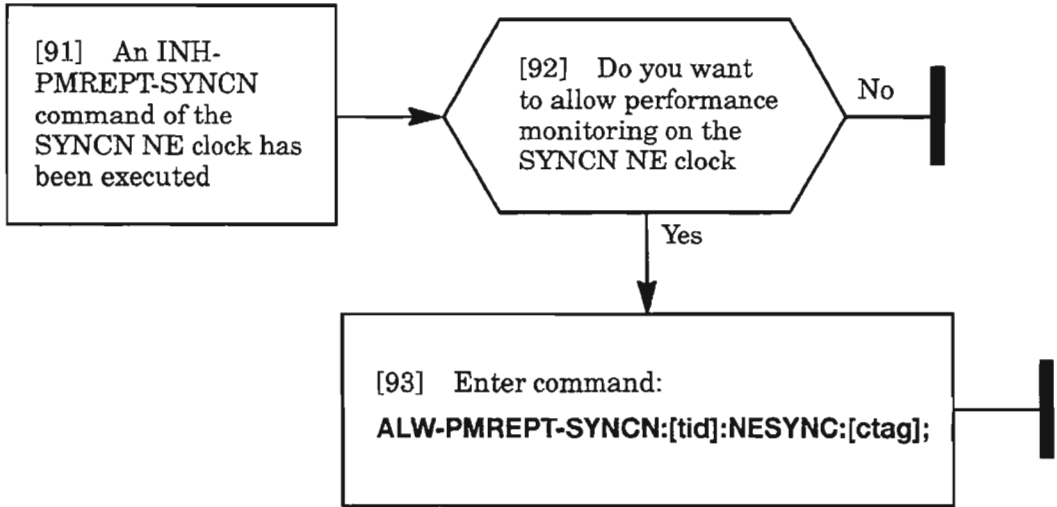
# INHAUTOMODESW



CLEAR NESYNC ALARMS

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 19 of 26	027

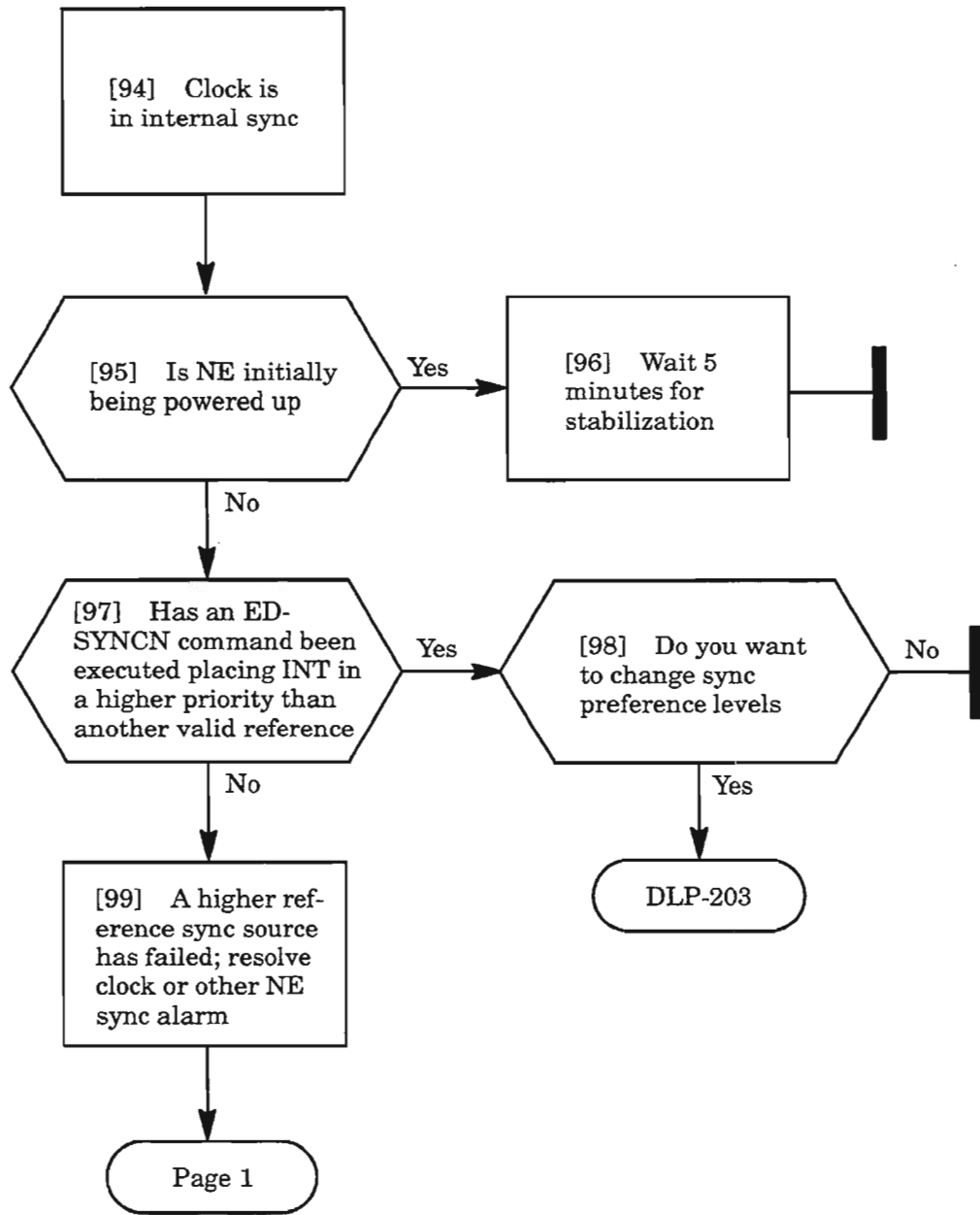
# INH-PMREPT



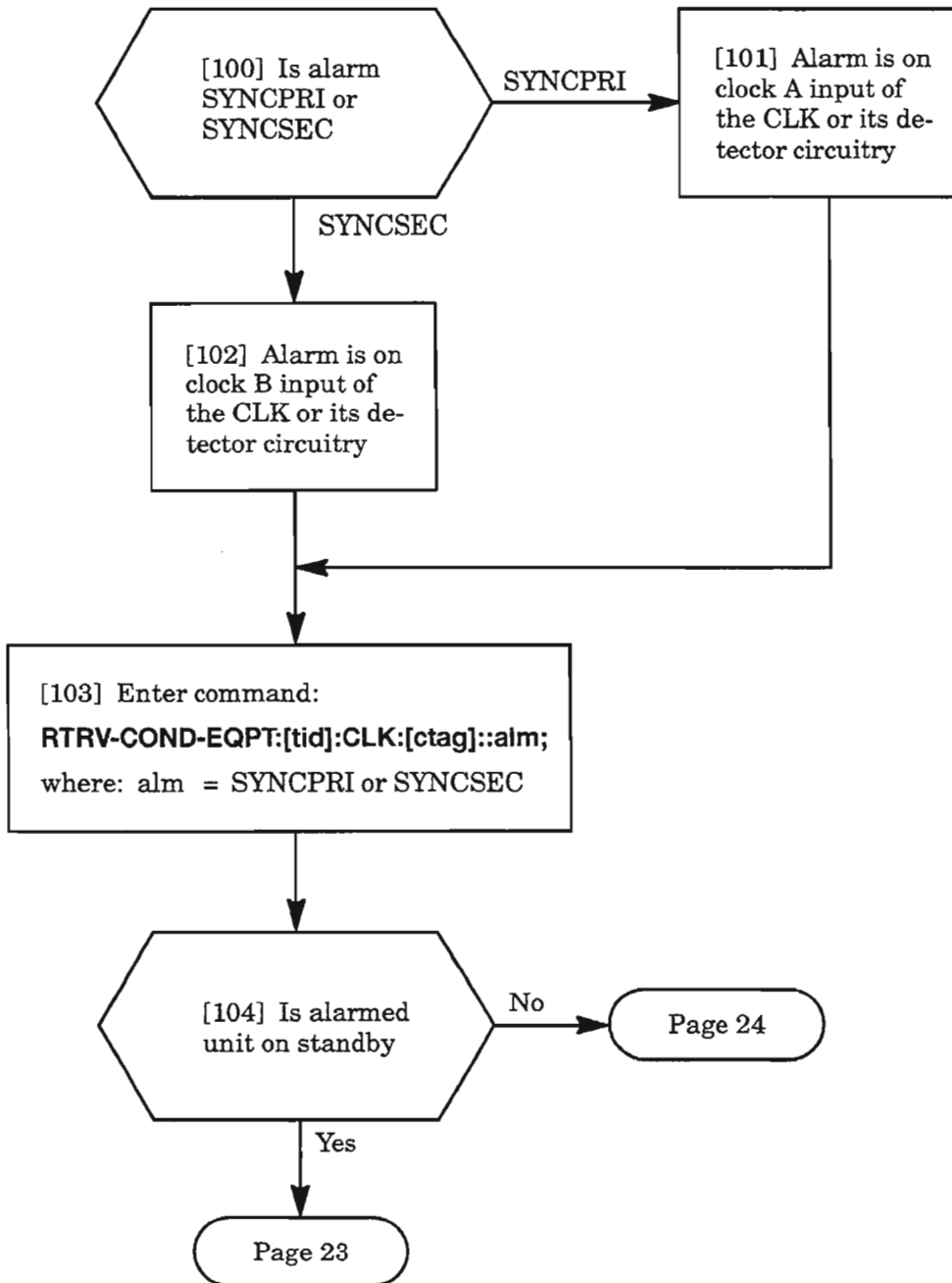
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 20 of 26	027

**CLEAR NESYNC ALARMS**

# SYNC

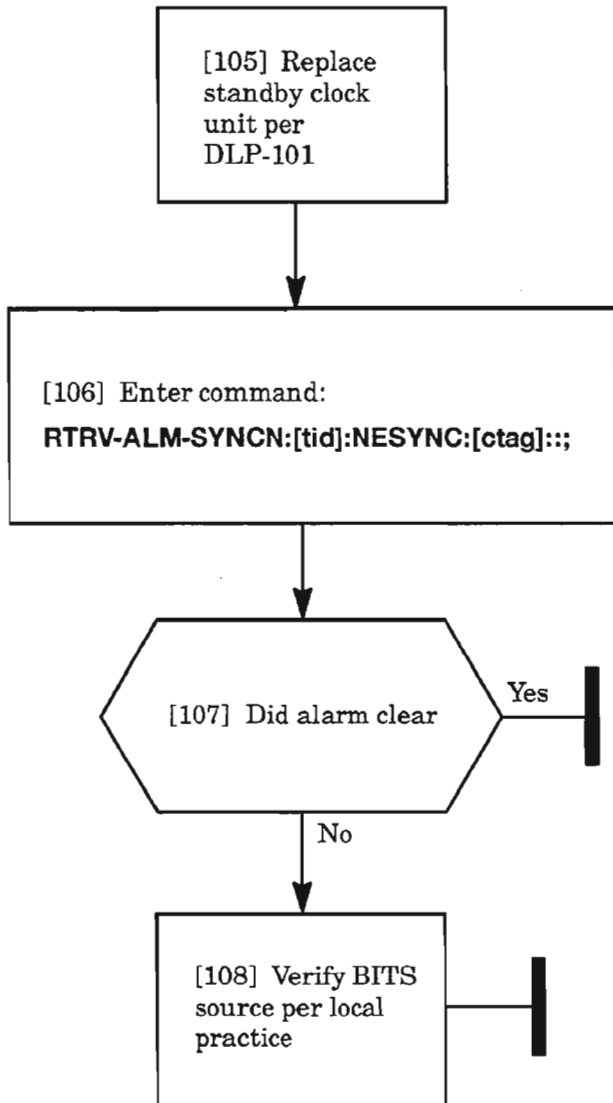


# SYNC (PRI, SEC)

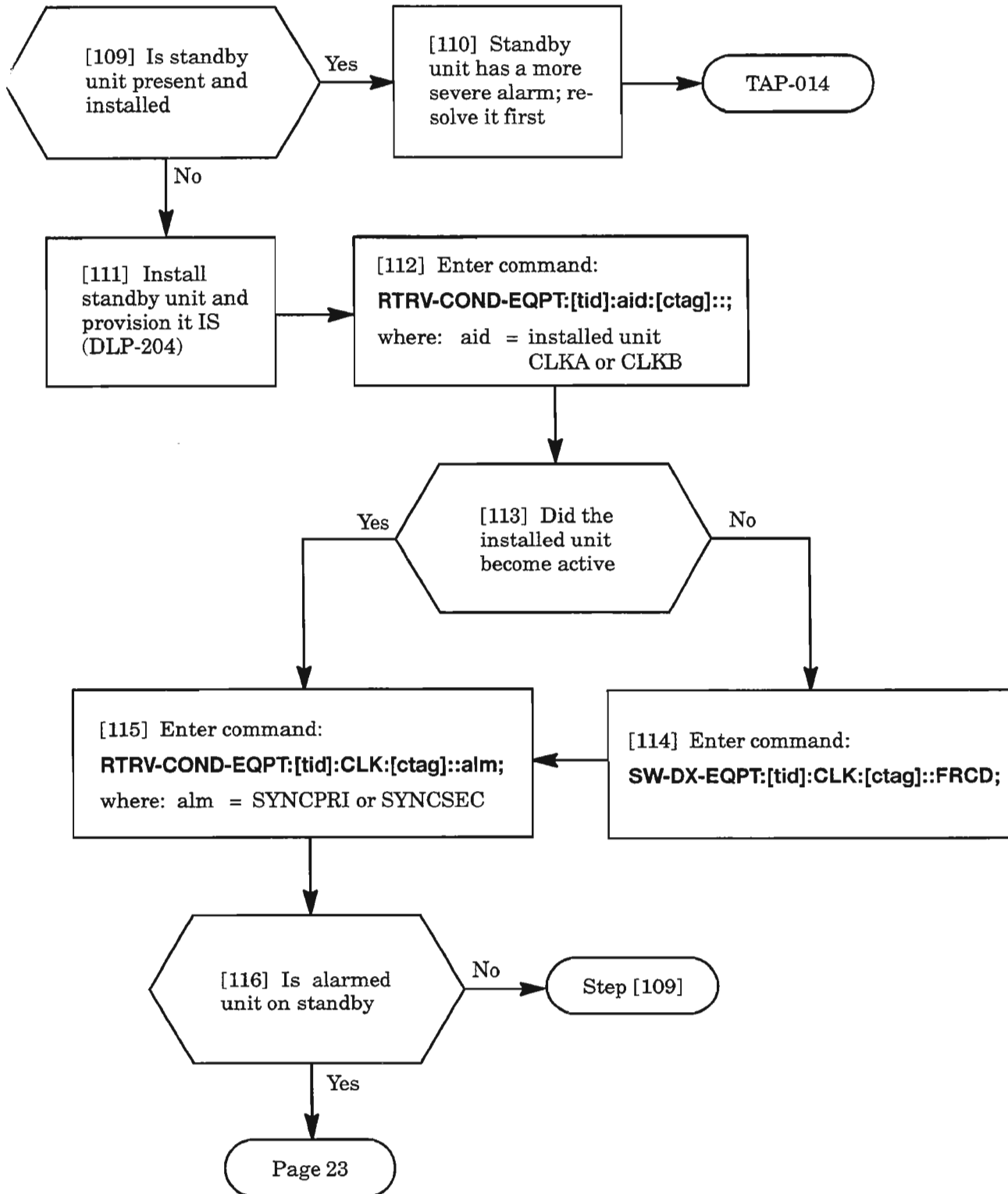


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 22 of 26	027

**SYNC (PRI, SEC) (cont)**



**SYNC (PRI, SEC) (cont)**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP 027
PAGE 24 of 26	



# LOCKOUTOFSYNC

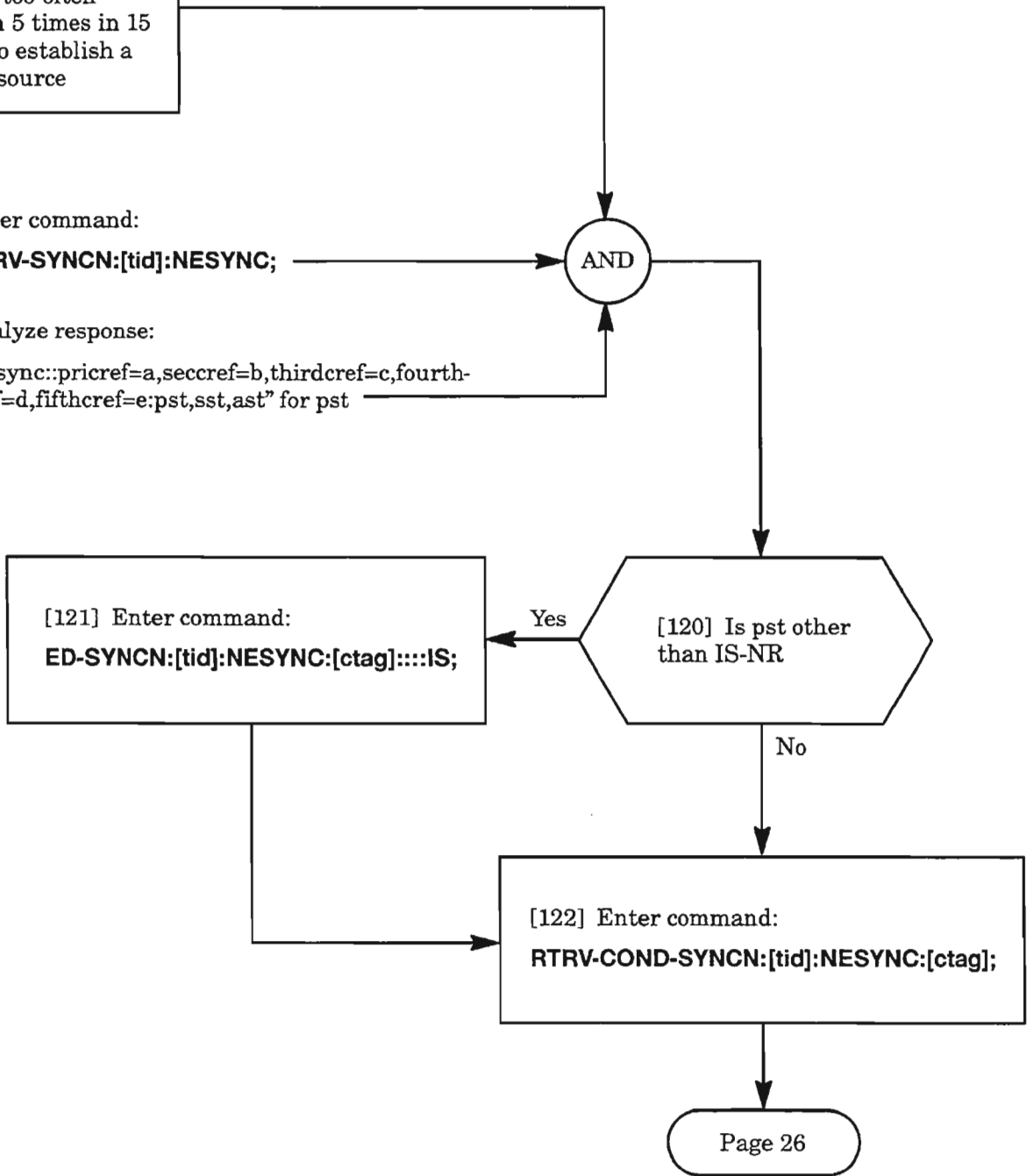
[117] Indicates that the sync source has toggled in and out too often (more than 5 times in 15 minutes) to establish a good sync source

[118] Enter command:

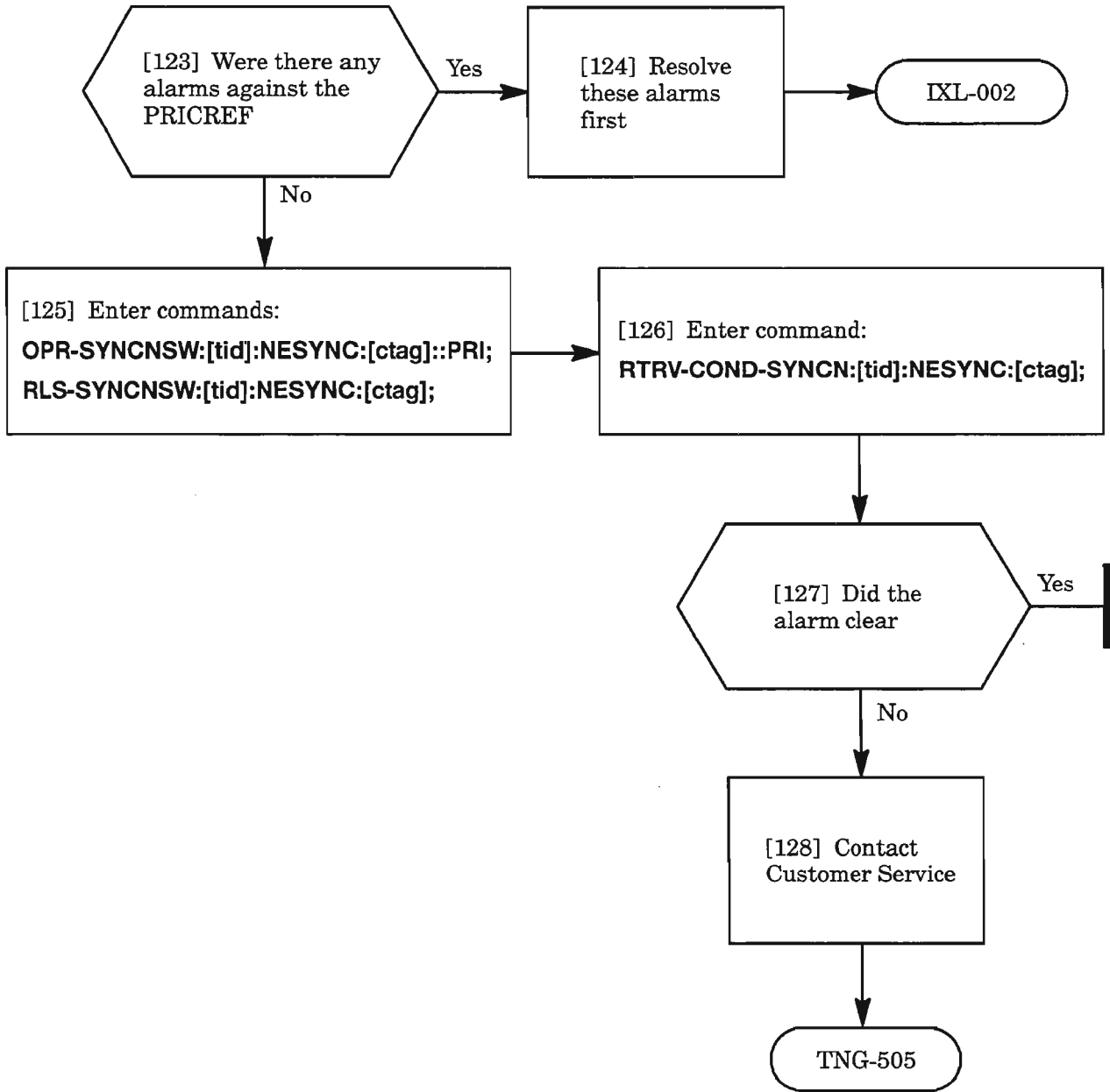
**RTRV-SYCN:[tid]:NESYNC;**

[119] Analyze response:

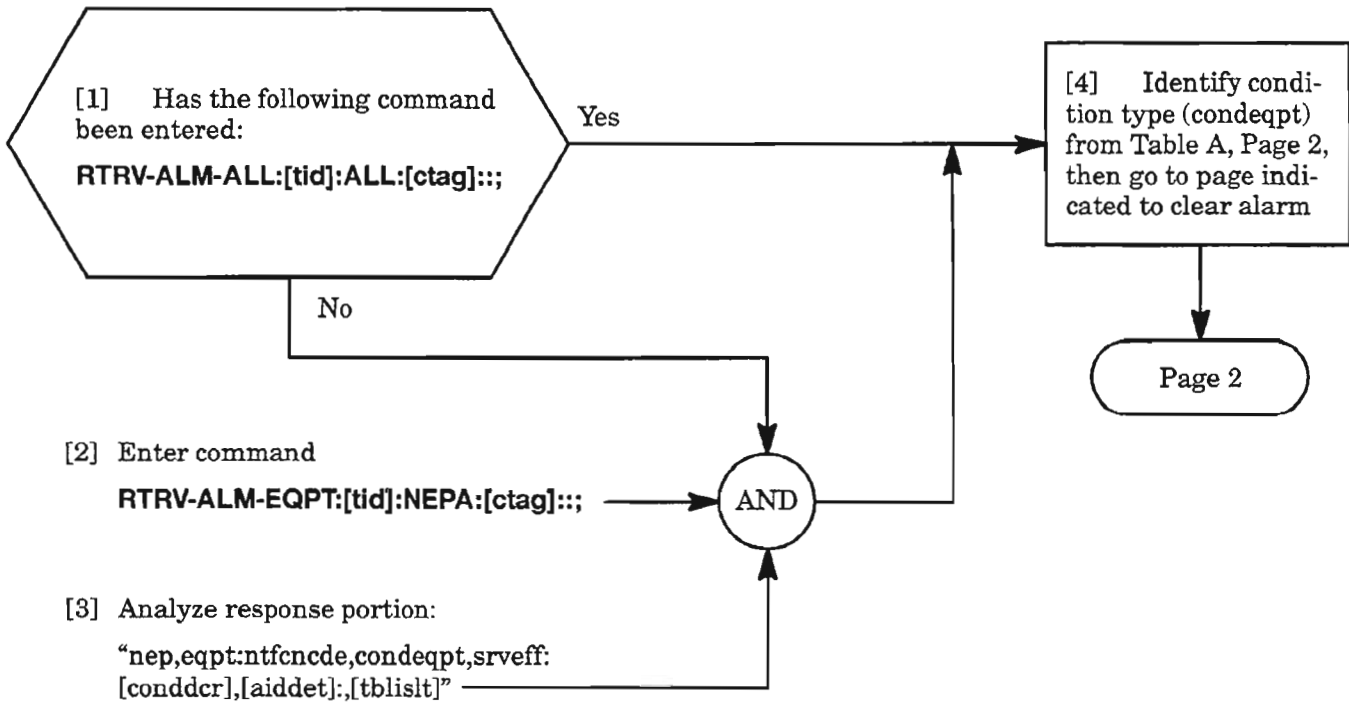
“nesync::pricref=a,secrcf=b,thirdcref=c,fourthcref=d,fifthcref=e:pst,sst,ast” for pst



**LOCKOUTOFSYNC (cont)**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 26 of 26	027



**Table A. Conditions**

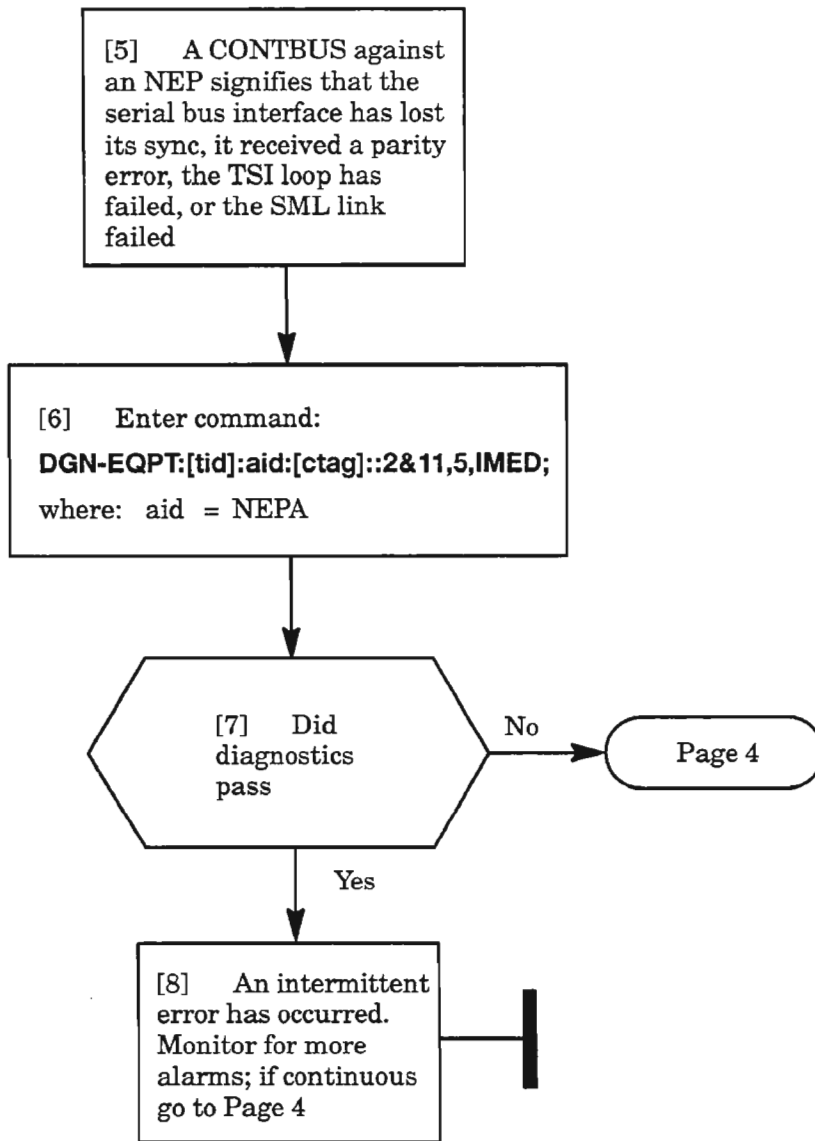
<b>CONDITION/ALARM</b>	<b>DEFINITION</b>	<b>PAGE</b>
BOOT*	Processor is running bootcode	–
CONTBUS	SBI failure (sync, parity, TSI loop, SML)	3
CONTEQPT	SML: A/B Select fail	5
CONTRDUP*	NEP – NEP link down	–
FAILTOSW*	Fail to switch	–
IMPROPRMVL	Improper removal	6
INHDBGN	Inhibit diagnostics	7
INHMPREPT	Inhibit PM report	7
INHSDWX	Inhibit switch duplex	7
INT	Internal equipment failure	8
INVERR	Inventory error	9
MEA	Mismatch of equipment and attributes	11
MTCE	Removed from service for maintenance	12
PROGVER*	Program version error	–
SYNCCLK	Clock fail (A/B, 6.17 MHz or 21.61 MHz fail)	13

*\* These alarm conditions are possible only when two NEPs are equipped. Existing software does not support two NEPs.*

<b>ISSUE 2</b>	<b>JULY 1994</b>
<b>ALCL 363-203-502</b>	<b>TAP</b>
<b>PAGE 2 of 14</b>	<b>028</b>

**CLEAR NEP UNIT ALARM**

# CONTBUS

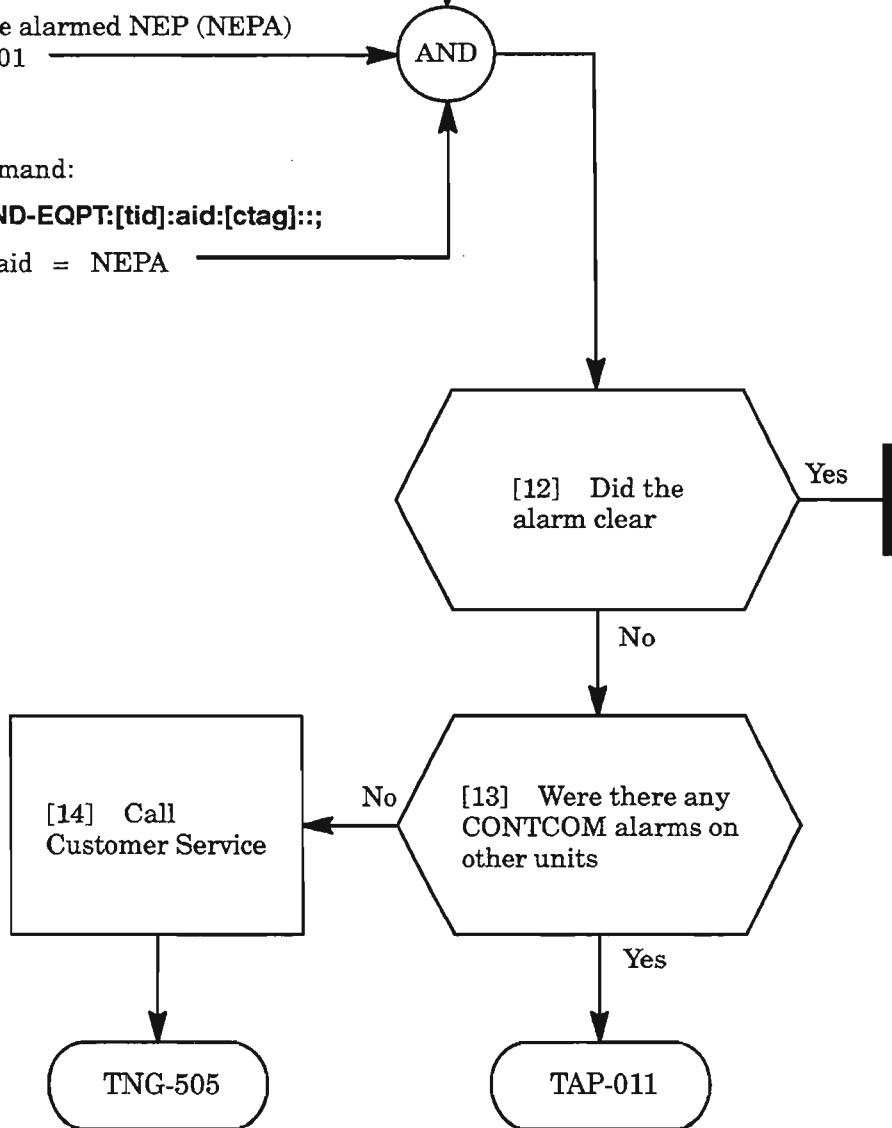


**CONTBUS (cont)**

**[9] CAUTION:** The NEP being replaced may need downloading along with re-provisioning the NE. See DLP-116.

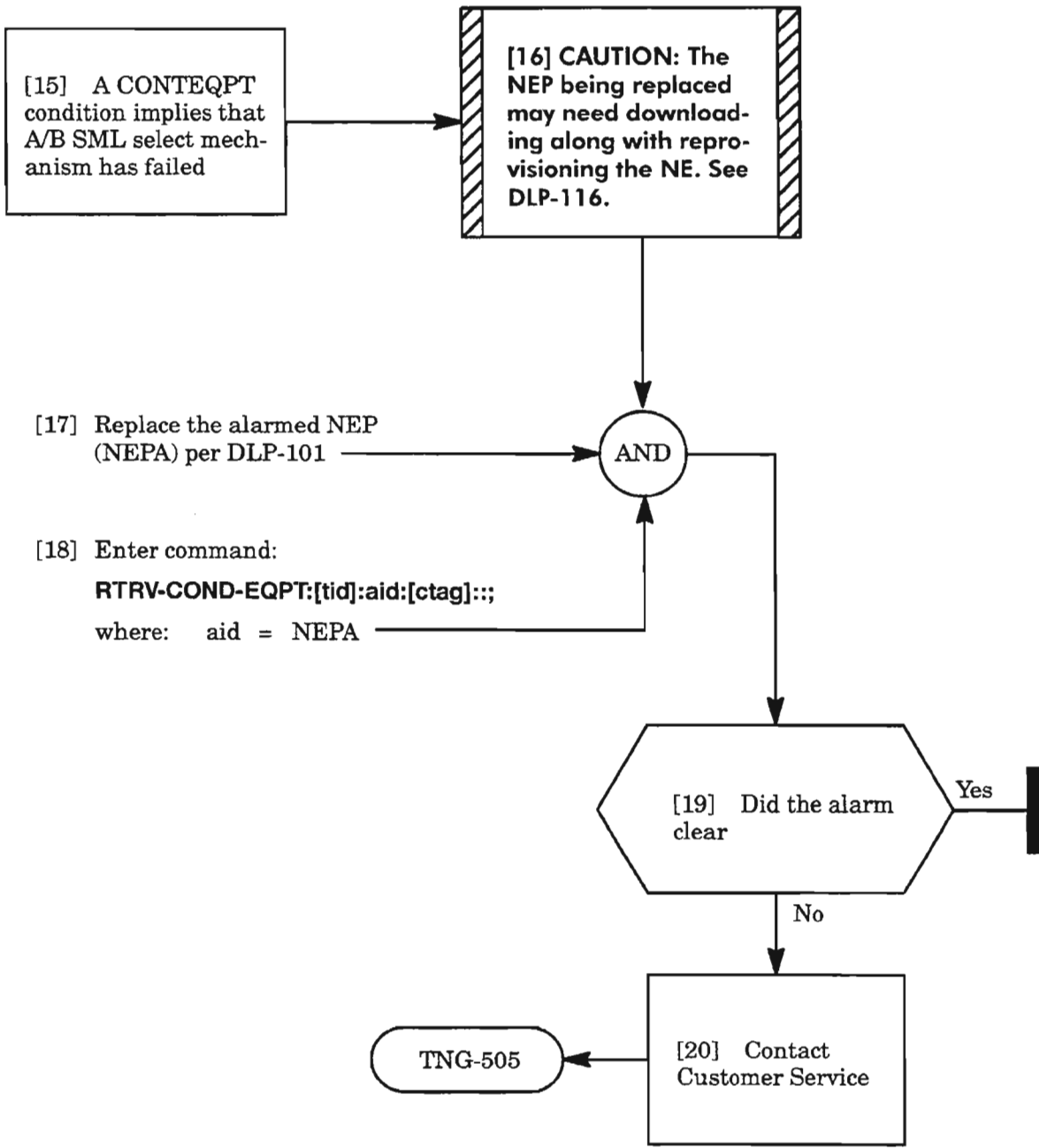
[10] Replace the alarmed NEP (NEPA) per DLP-101

[11] Enter command:  
**RTRV-COND-EQPT:[tid]:aid:[ctag]::;**  
 where: aid = NEPA



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP 028
PAGE 4 of 14	

# CONTEQPT



# IMPROPRMVL

[21] The NEP was physically removed. Since the NEP is the craft communications controller, this alarm would only appear after the unit is reinstalled and, therefore, requires no further action

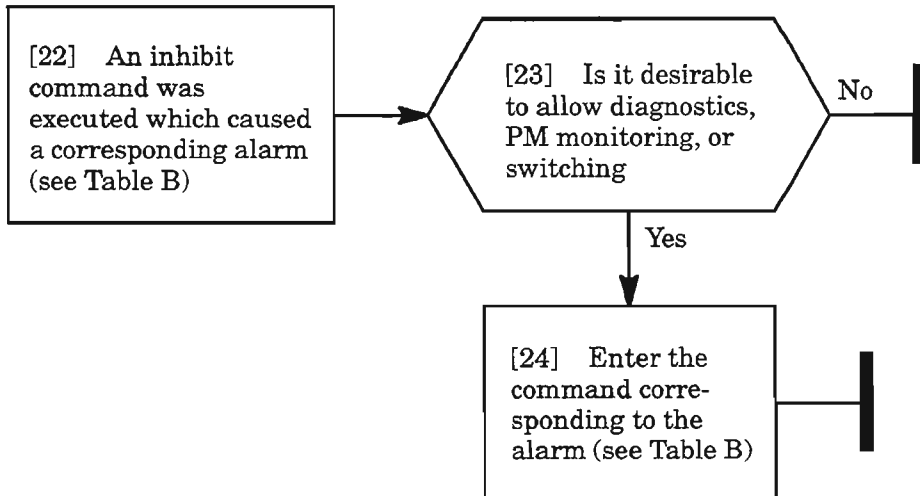


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 14	028

**CLEAR NEP UNIT ALARM**



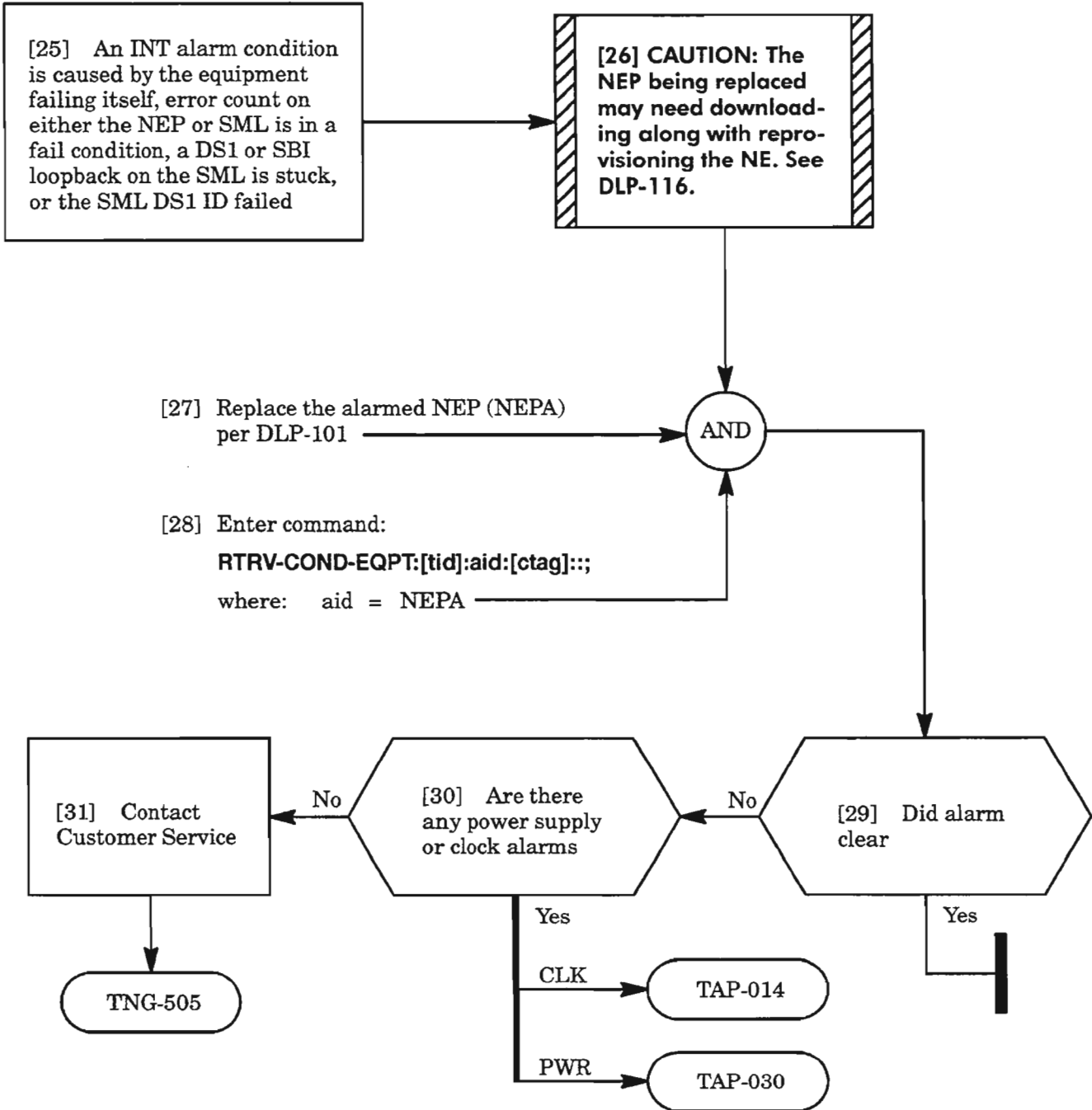
**INH DGN, INHPMREPT, INHSWDX**



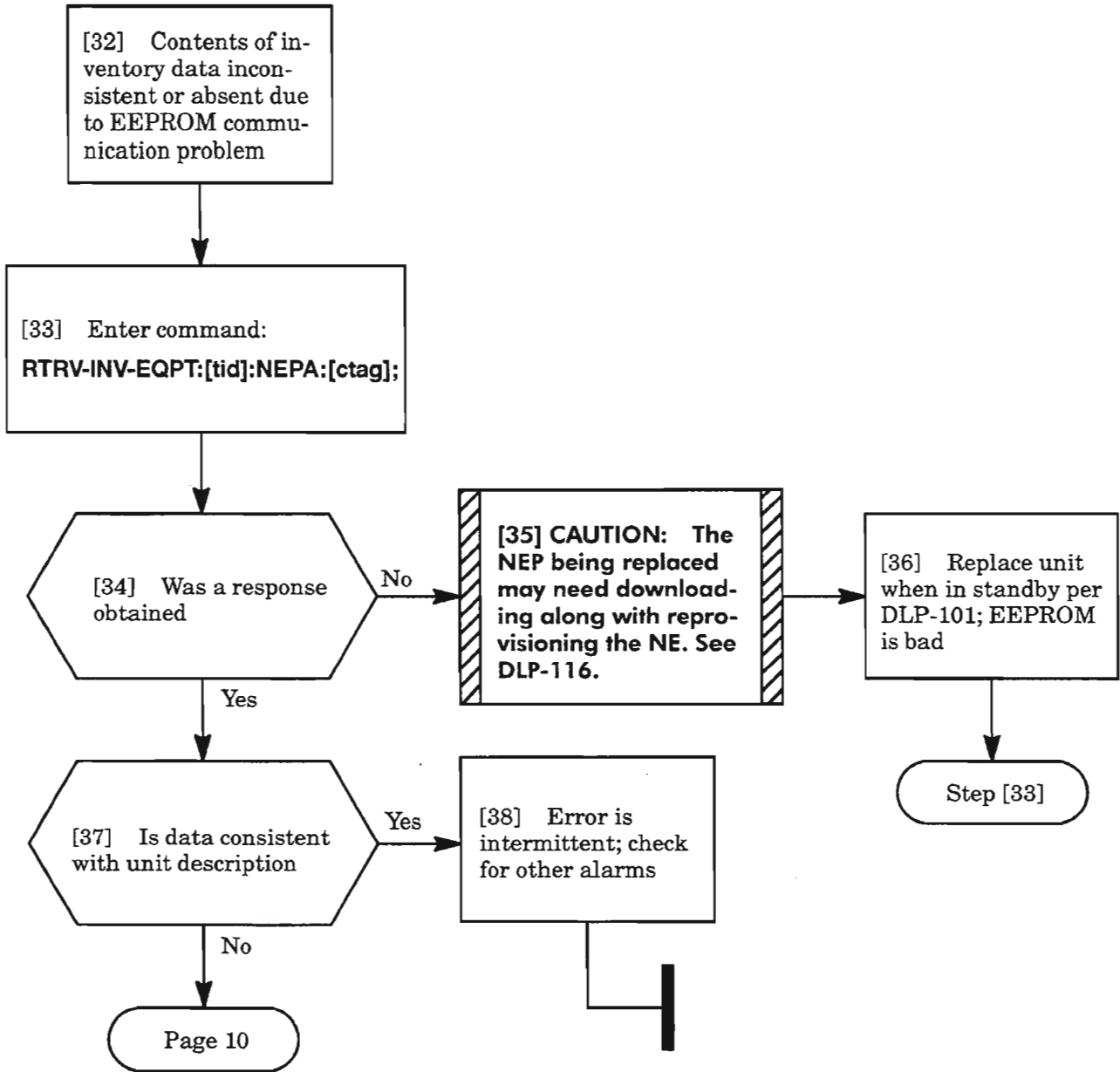
**Table B.**

<b>ALARM</b>	<b>COMMAND</b>
INH DGN (inhibit processor diagnostics on the NEP)	<b>ALW-DGN-EQPT:[tid]:NEPA:[ctag];</b>
INHPMREPT (inhibit performance monitoring reporting)	<b>ALW-PMREPT-EQPT:[tid]:NEP:[ctag];</b>
INHSWDX (inhibit duplex switching of unit to protection)	<b>ALW-SWDX-EQPT:[tid]:NEP:[ctag];</b>

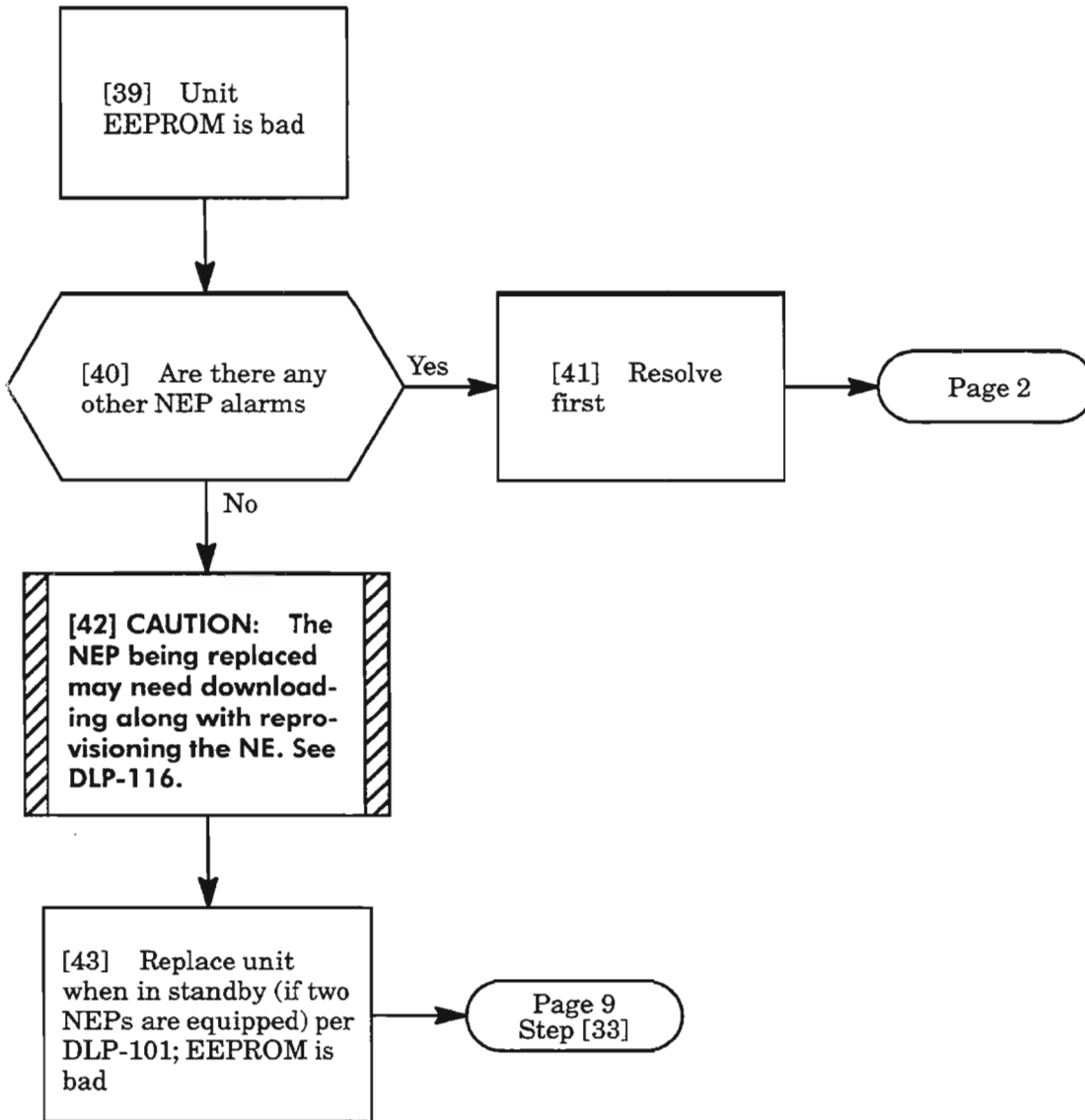
**INT**



# INVERR



**INVERR (cont)**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 14	028

**MEA**

[44] The data base entry for the alarmed unit does not match equipment type parameter on unit EEPROM

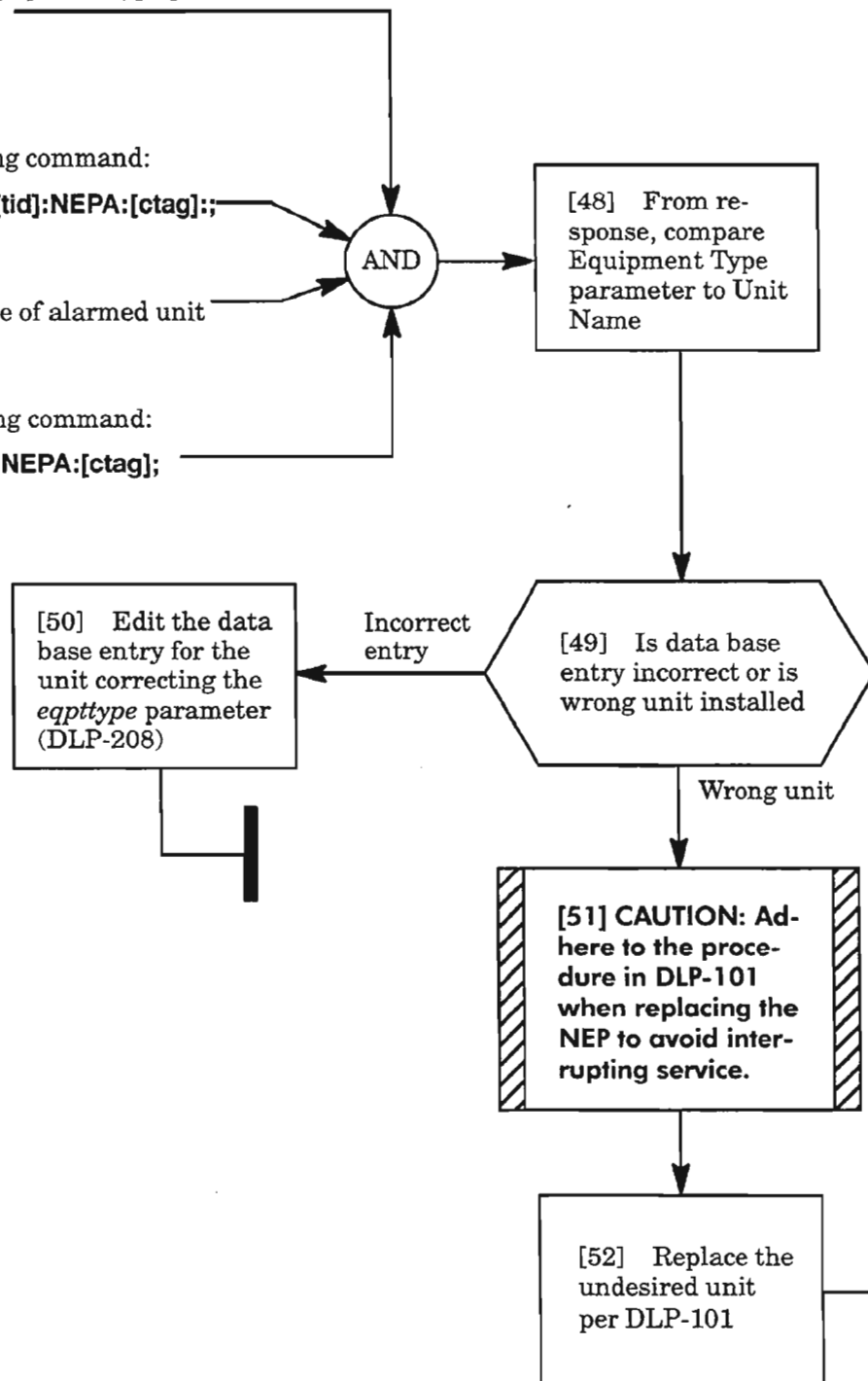
[45] Enter the following command:

**RTRV-INV-EQPT:[tid]:NEPA:[ctag];**

[46] Record Unit Name of alarmed unit

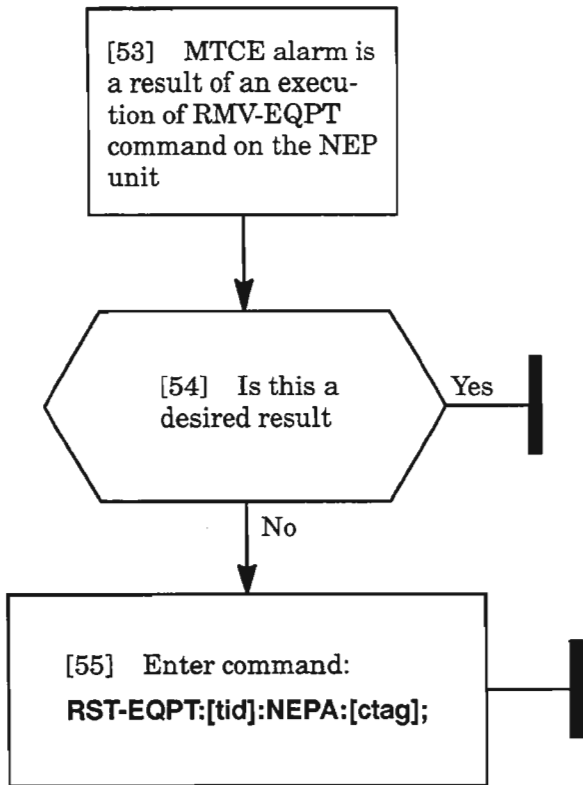
[47] Enter the following command:

**RTRV-EQPT:[tid]:NEPA:[ctag];**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 11 of 14	028

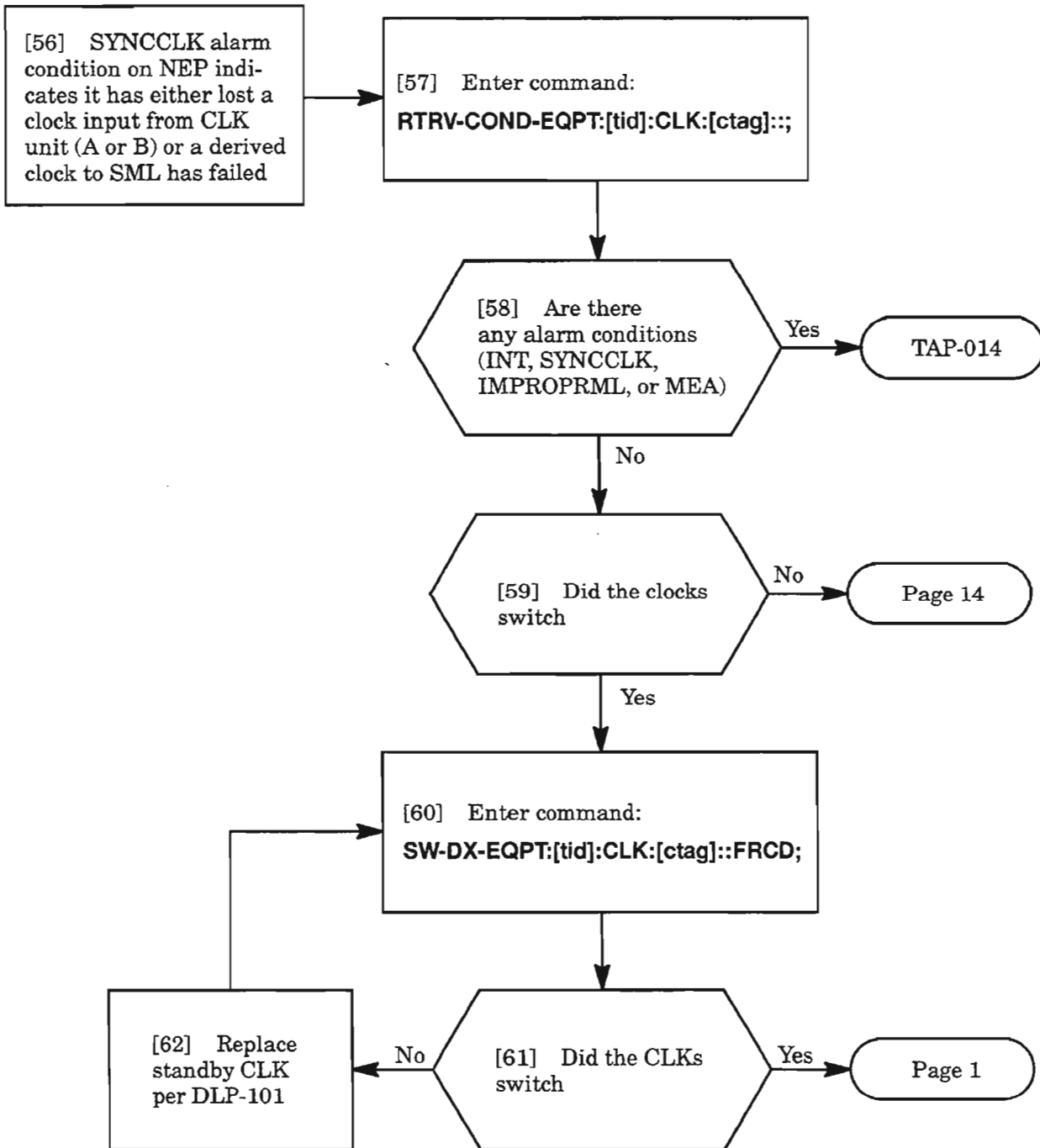
# MTCE



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 14	028

**CLEAR NEP UNIT ALARM**

# SYNCCLK

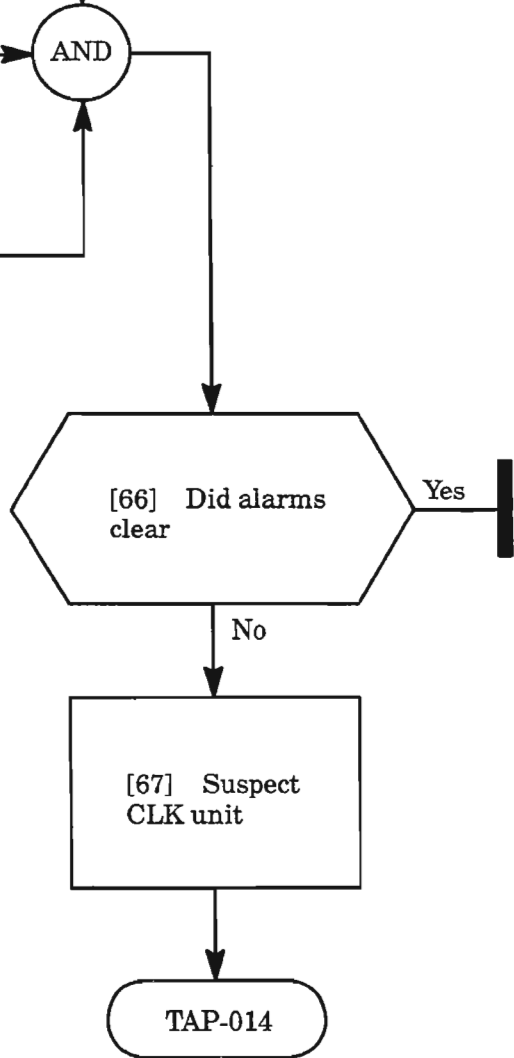


**SYNCCLK (cont)**

**[63] CAUTION:** The NEP being replaced may need downloading along with re-provisioning the NE. See DLP-116.

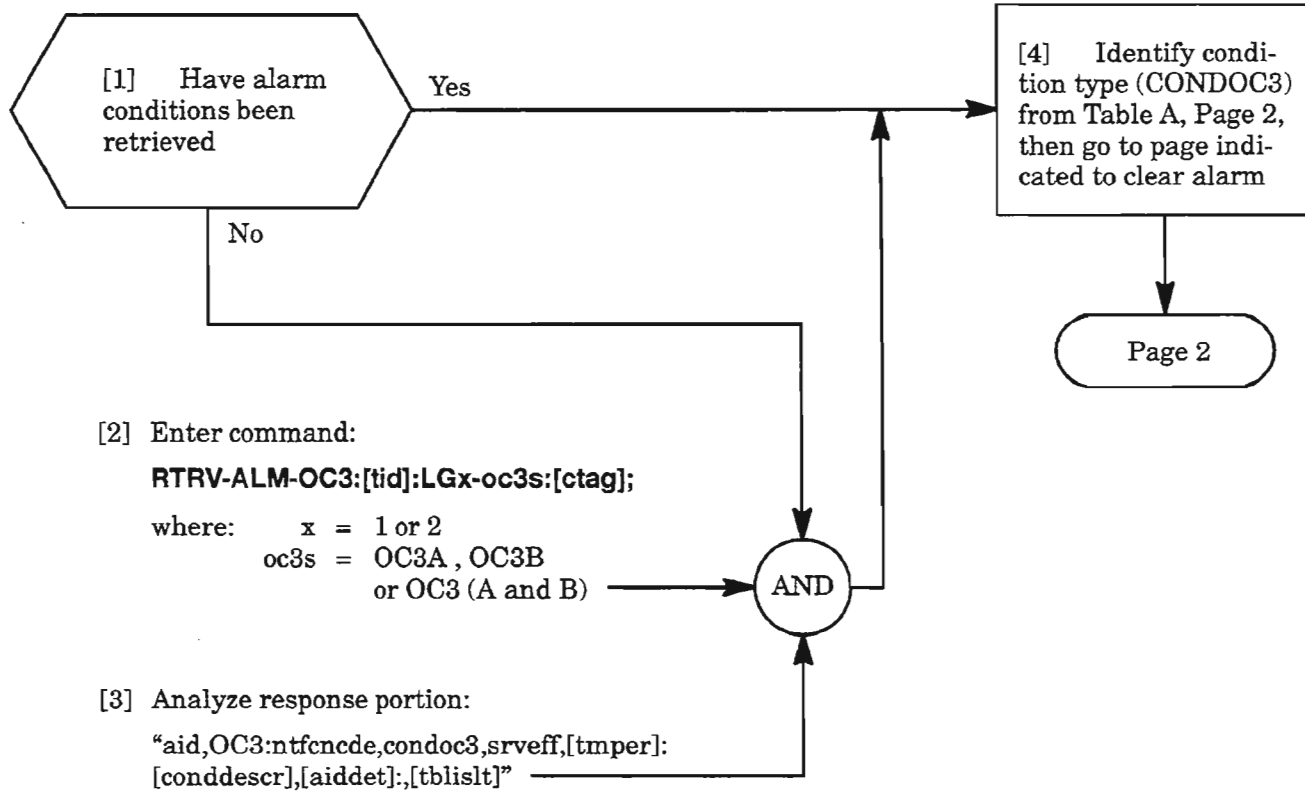
[64] Replace the alarmed NEP (NEPA) per DLP-101

[65] Enter command:  
**RTRV-COND-EQPT:[tid]:aid:[ctag]::;**  
 where: aid = NEPA



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 14 of 14	028





**Table A. Conditions**

<b>CONDITION/ALARM</b>	<b>DEFINITION</b>	<b>PAGE</b>
AISL	Line alarm indication signal	3
ALS	Automatic laser shutdown	4
APSB	APS byte failure	7
APSCM	APS channel match failure	12
APSCONF	APS configuration error	17
BERL-HT	Bit Error Rate Line – High Threshold crossed	19
BERL-LT	Bit Error Ratio Line – Low Threshold crossed	19
FAILTOSW	Failure to switch to protection equipment	21
FEPRLF	Far-end protection line failure	23
FERF	Far-end receiver failure	24
FRCD	Forced	25
INHMPREPT	Inhibit all scheduled PM reports	26
LOCKOUTOFPR	Lock out of SONET APS	27
LOF	Loss of frame	28
LOS	Loss of signal	28
MAN	Manual	30
MTCE	Removed from service for maintenance	31
T-CVL	Threshold counter for PM line coding violations	32
T-CVS	Threshold counter for PM section coding violations	32
T-ESL	Threshold violation for PM line errored seconds	32
T-ESS	Threshold violation for PM section errored seconds	32
T-SEFS	Threshold violation for PM severely errored framing seconds	32
T-SESL	Threshold violation for PM line severely errored seconds	32
T-SESS	Threshold violation for PM section severely errored seconds	32
T-UASL	Threshold violation for PM line unavailable seconds	32

# AISL

[5] A line alarm indication signal has been detected from upstream

[6] Enter command:

**RTRV-ALM-OC3:[tid]:LGx-oc3s:[ctag];**

where:    x = 1 or 2  
          oc3s = OC3A , OC3B,  
                  or OC3 (A and B)

[7] Determine the line group with the AISL alarm

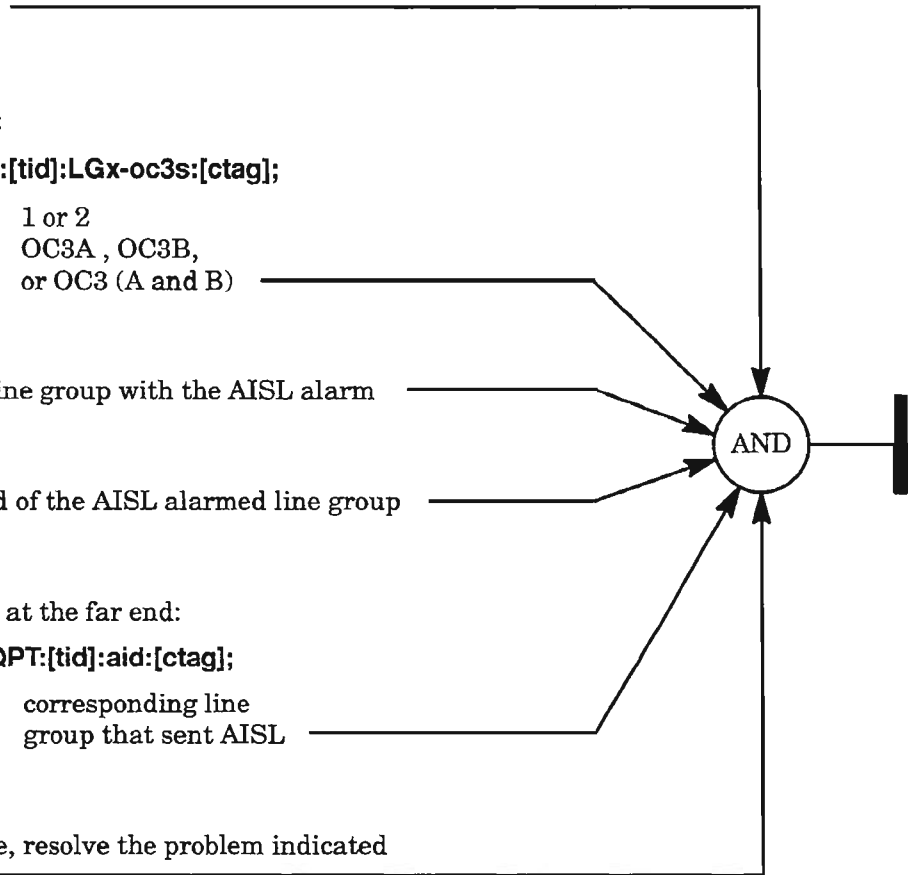
[8] Go to the far end of the AISL alarmed line group

[9] Enter command at the far end:

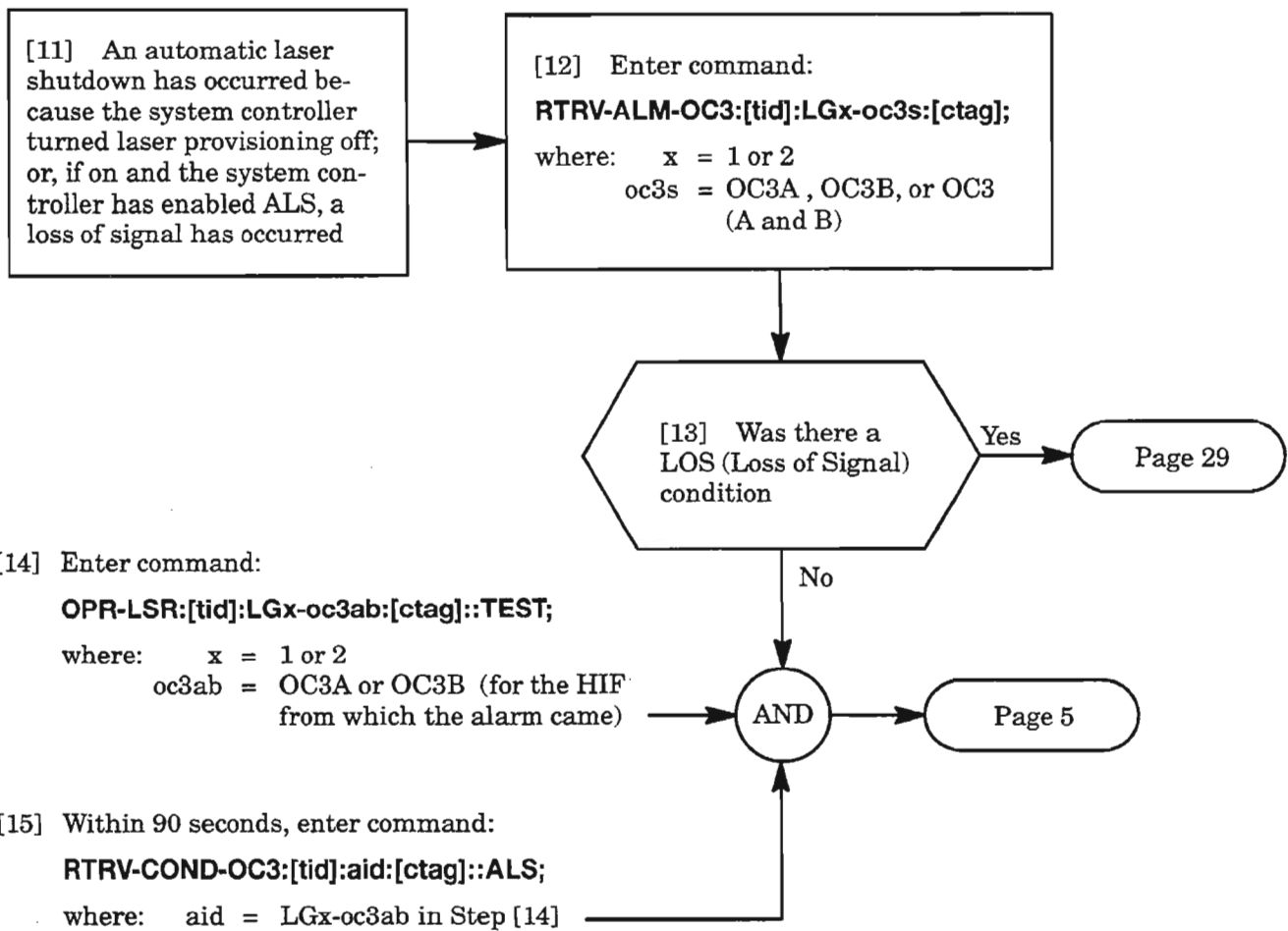
**RTRV-COND-EQPT:[tid]:aid:[ctag];**

where:    aid = corresponding line group that sent AISL

[10] Per the response, resolve the problem indicated via IXL-002

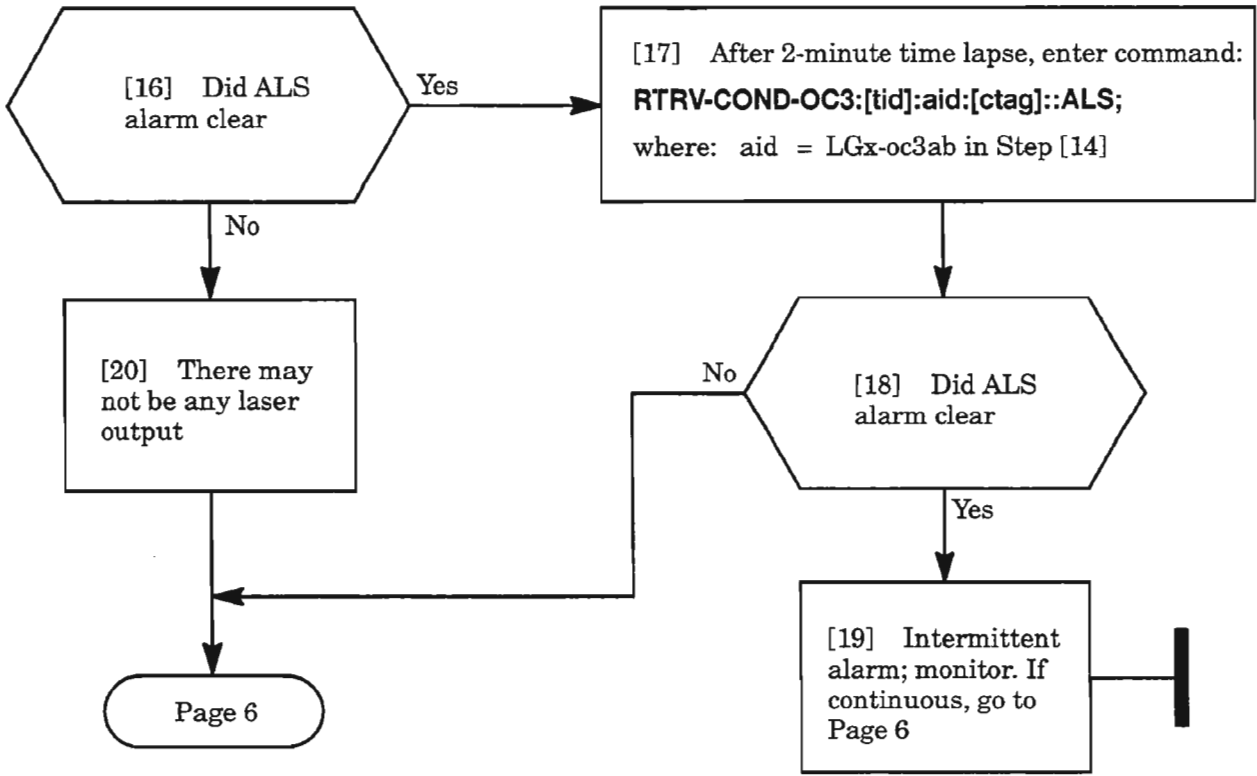


# ALS

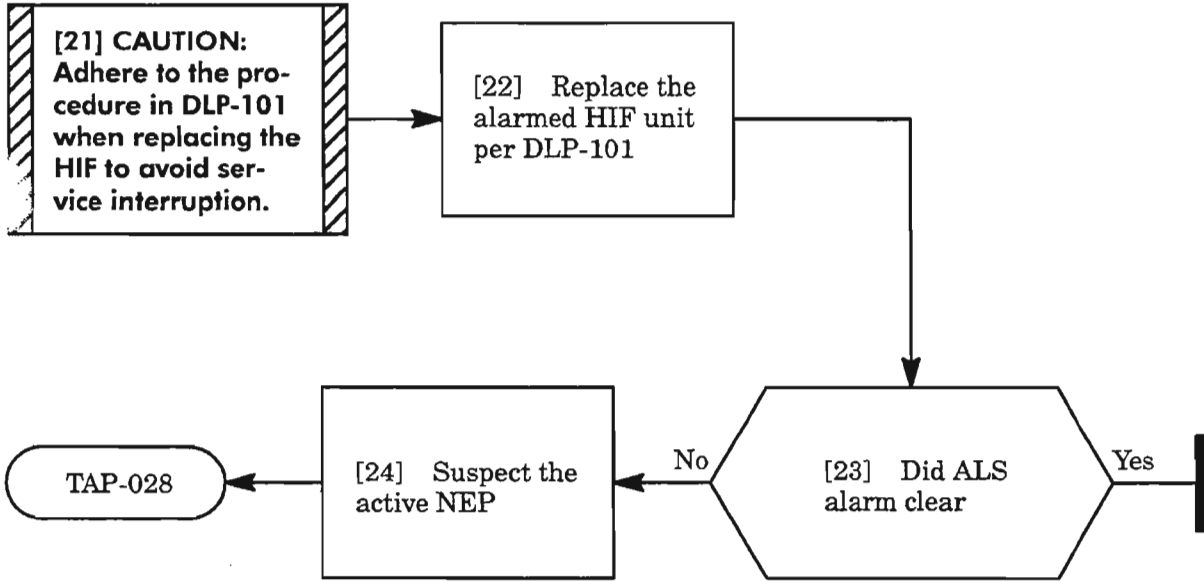


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 36	029

**ALS (cont)**



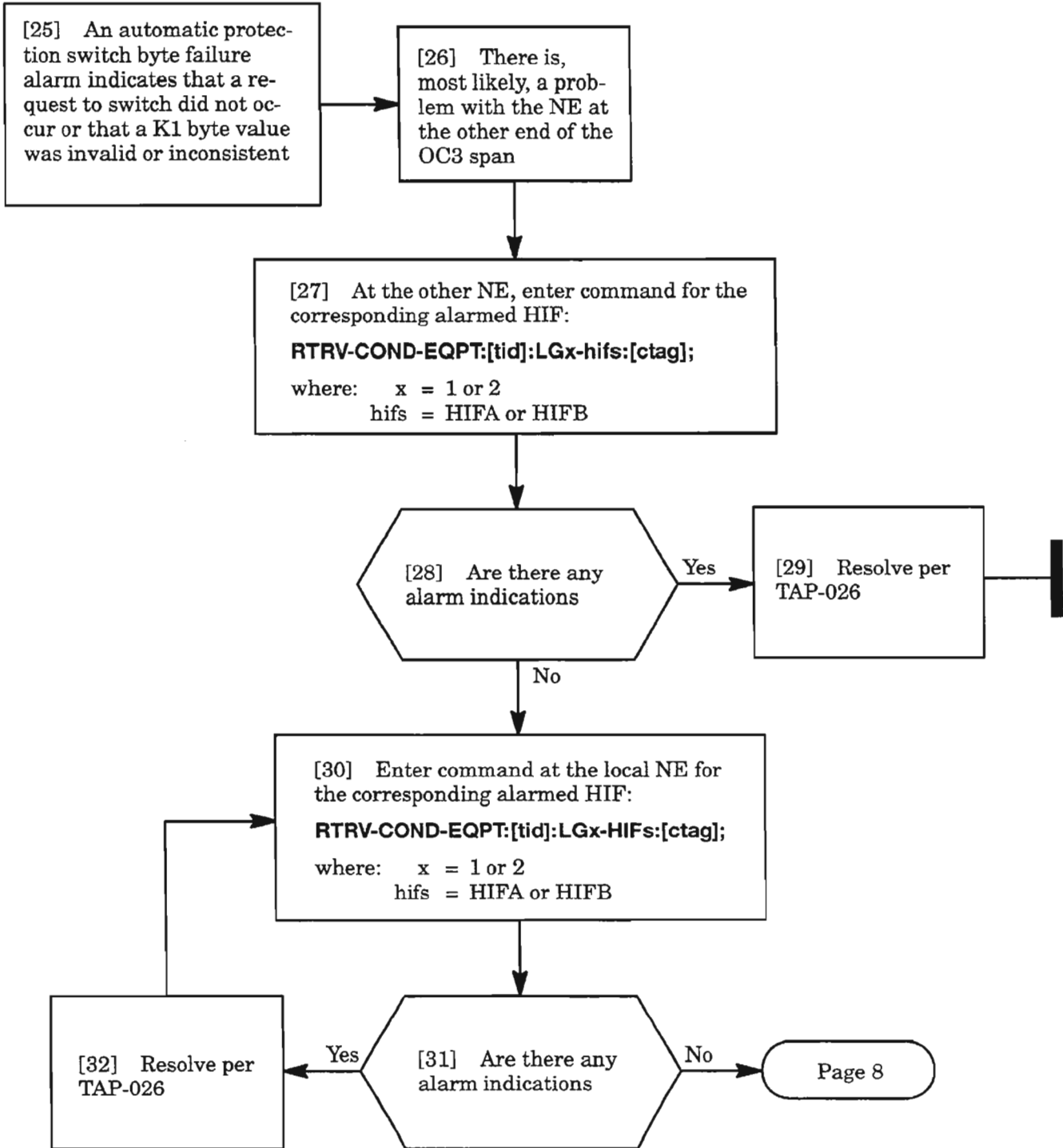
ALS (cont)



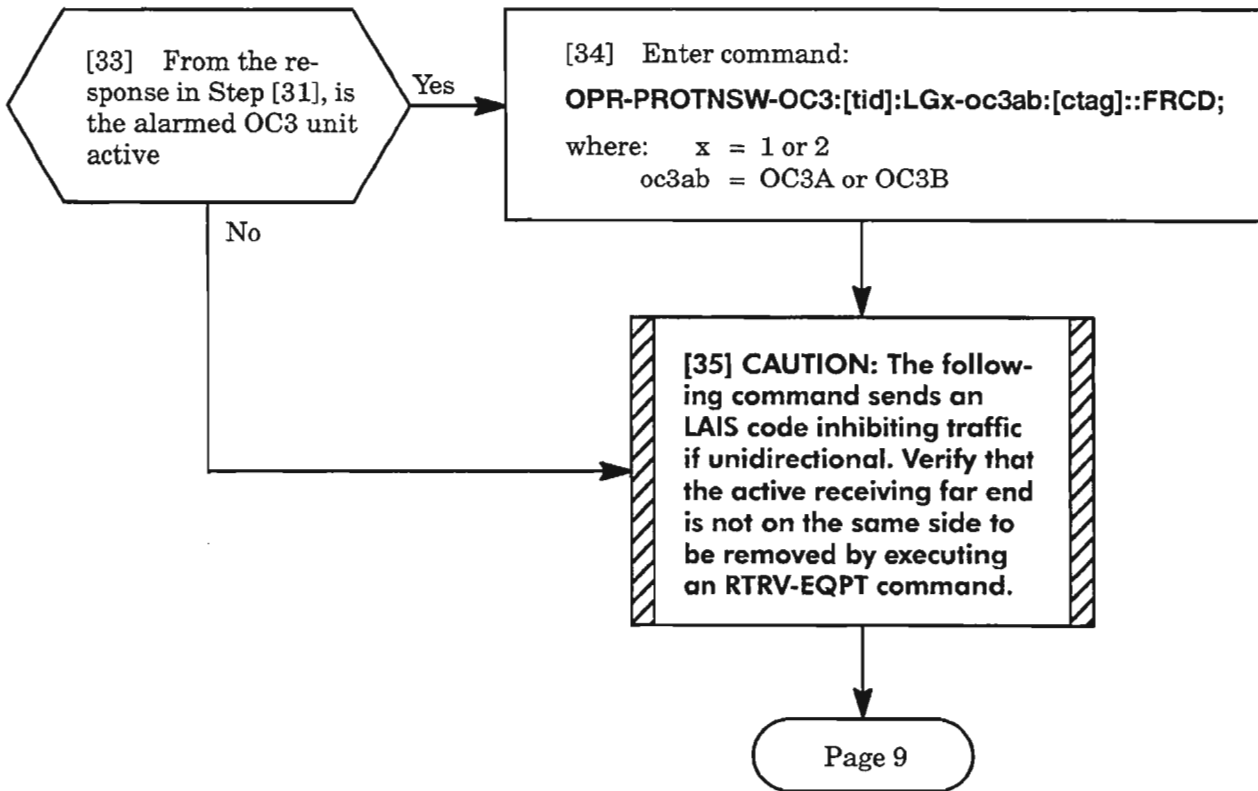
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 36	029

CLEAR OC3 ALARM

**APSB**



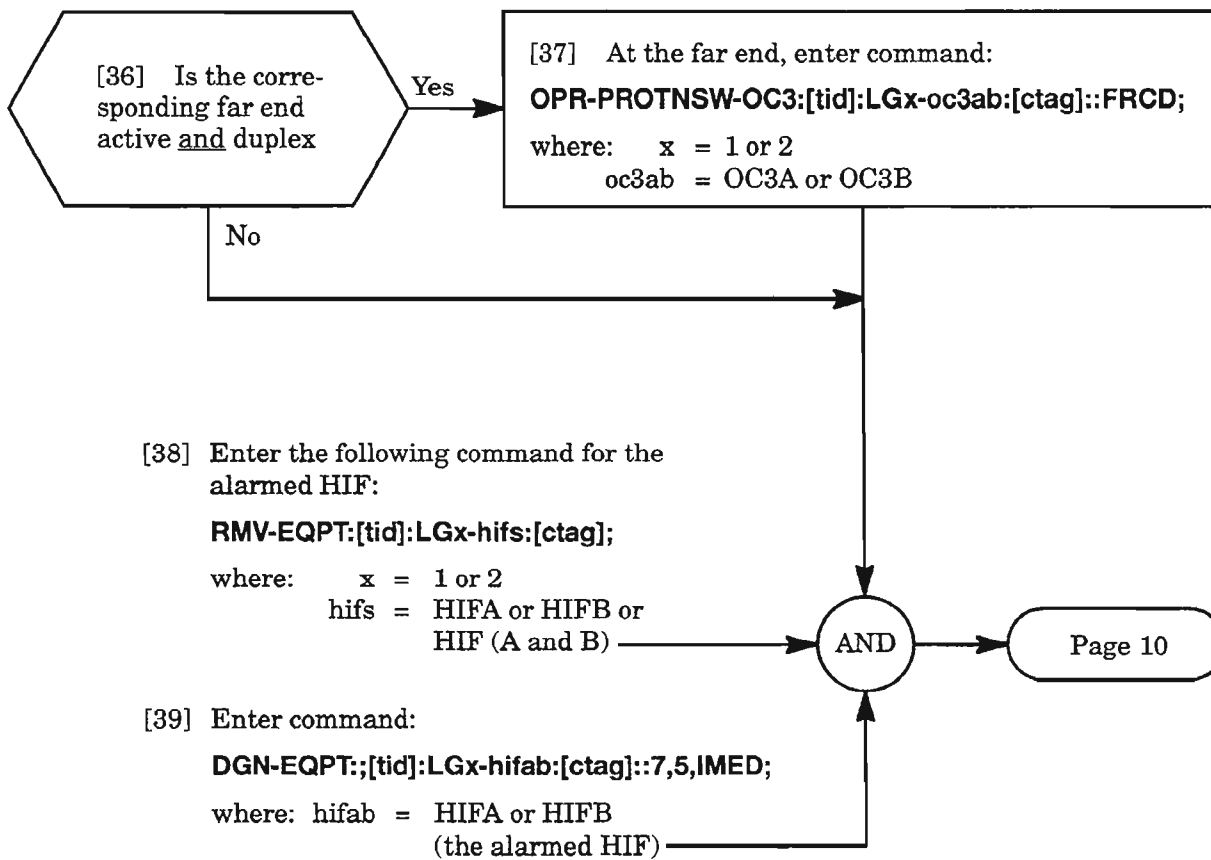
**APSB (cont)**



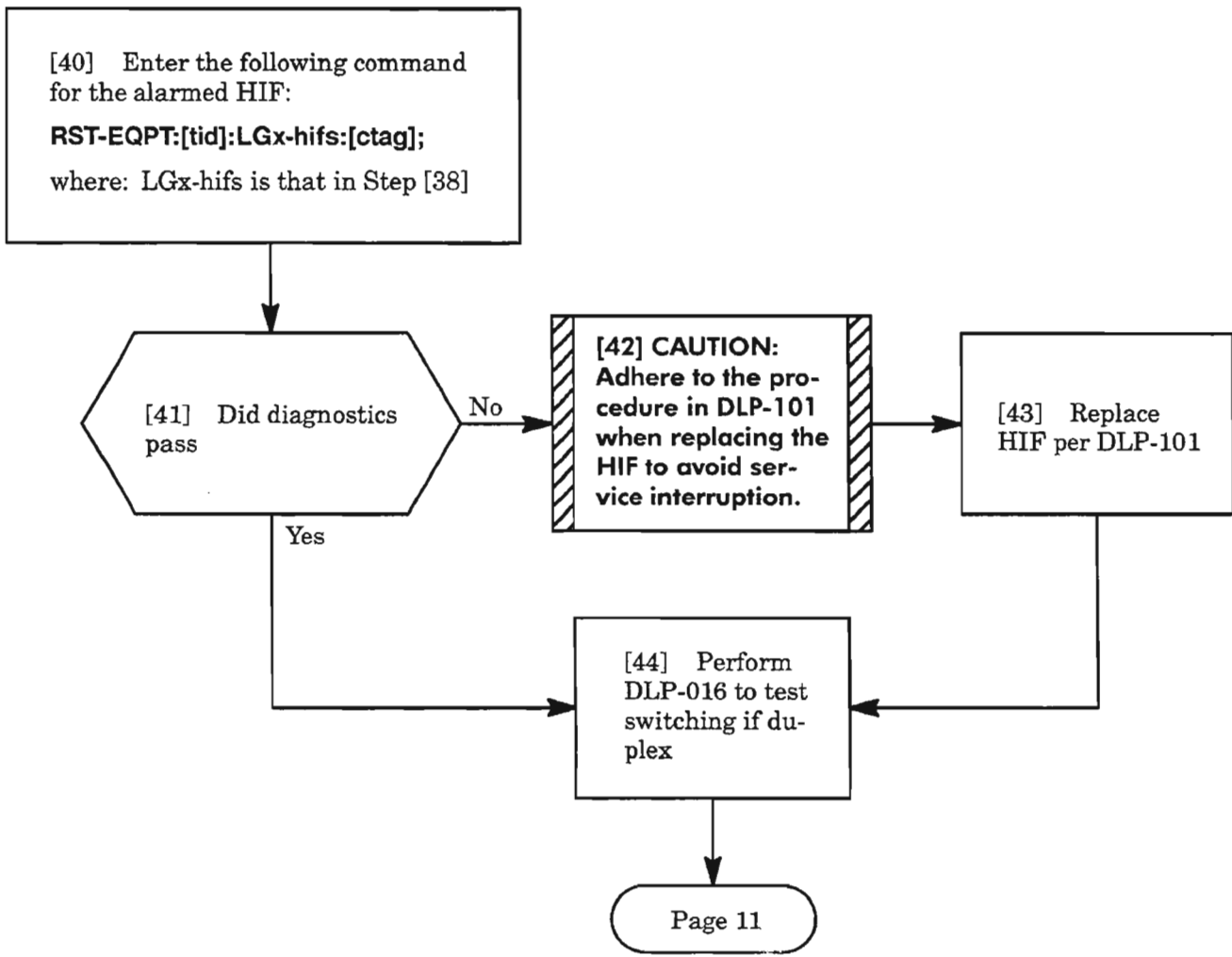
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 8 of 36	029



**APSB (cont)**

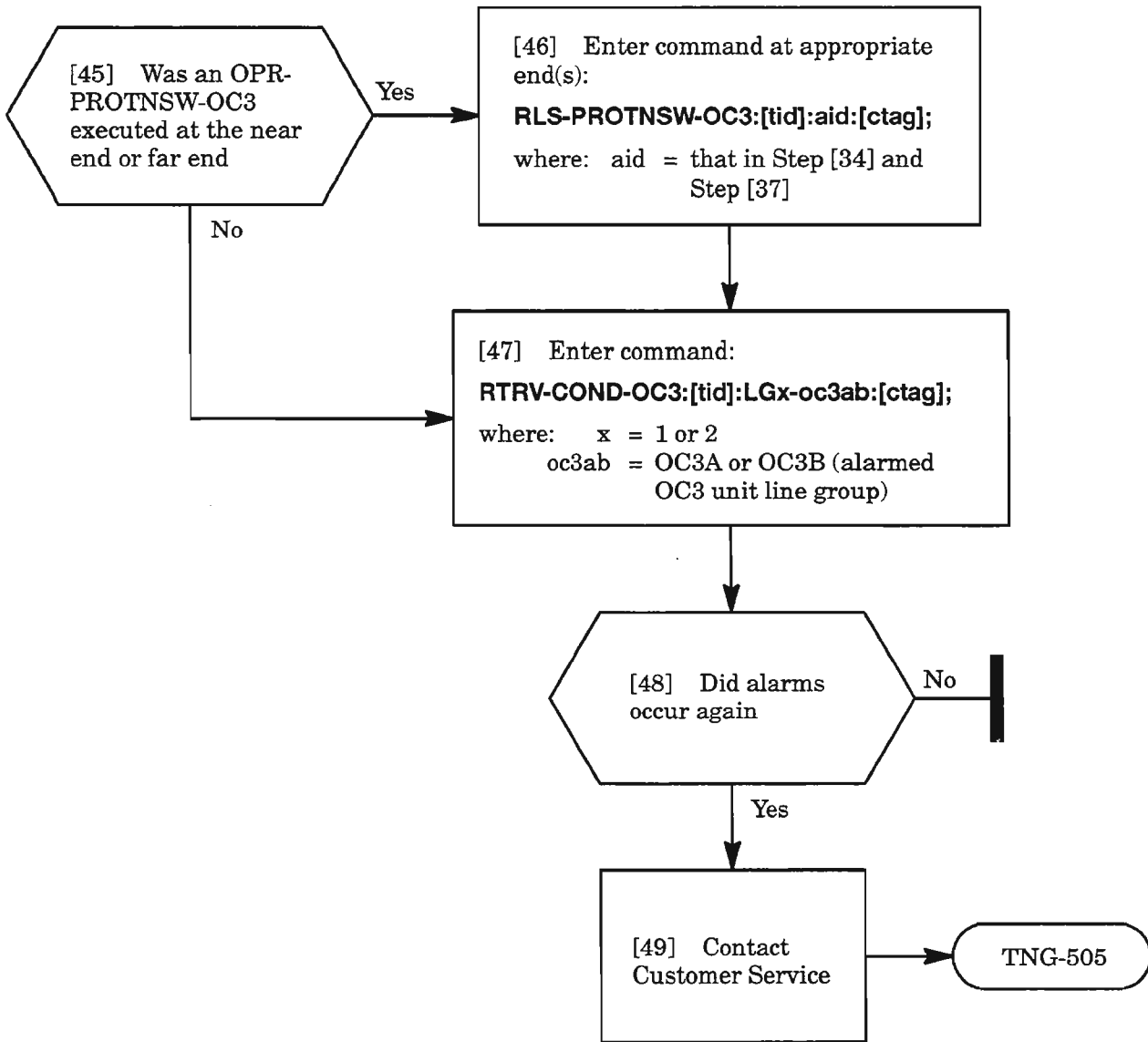


**APSB (cont)**

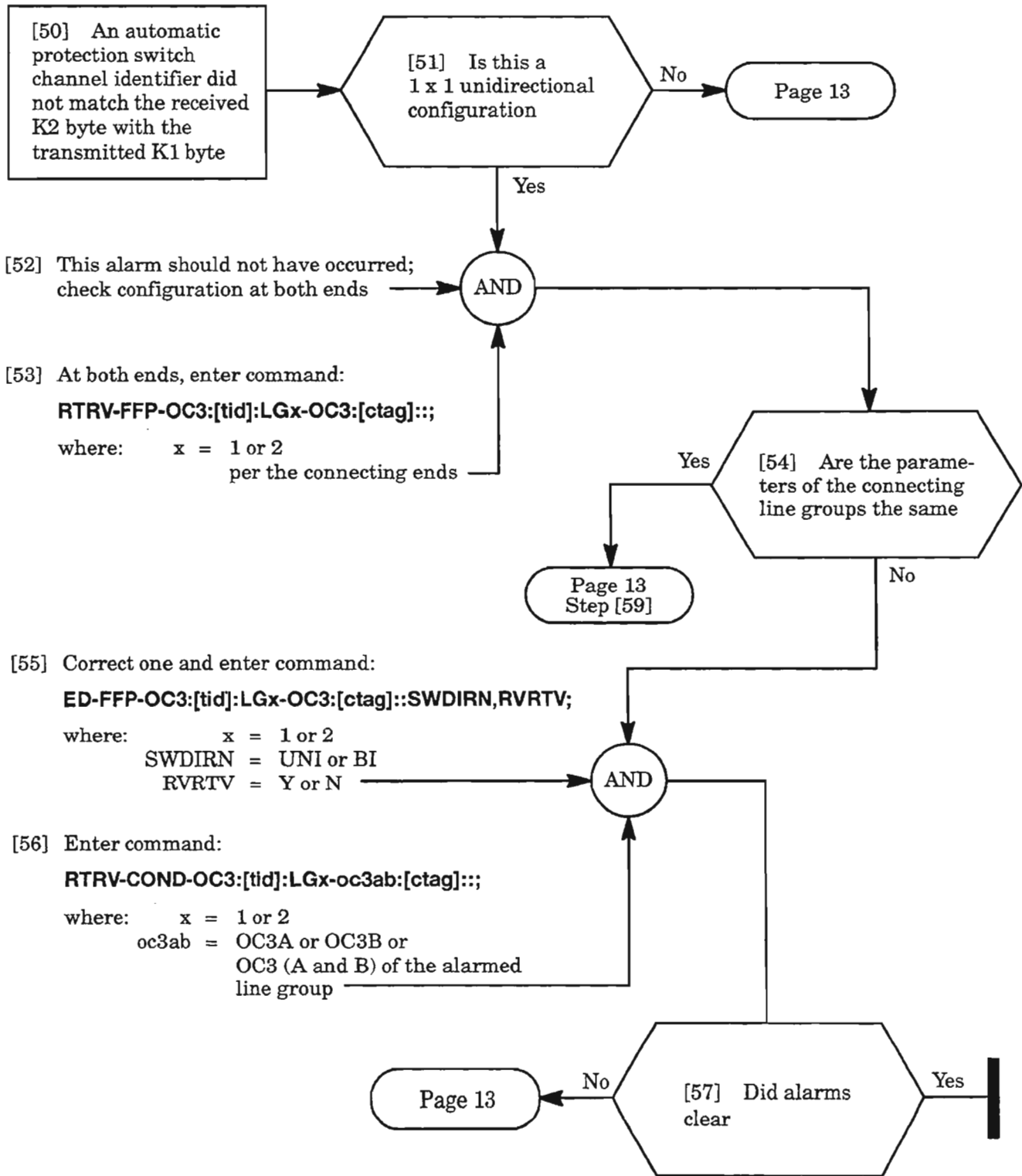


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 36	029

**APSB (cont)**

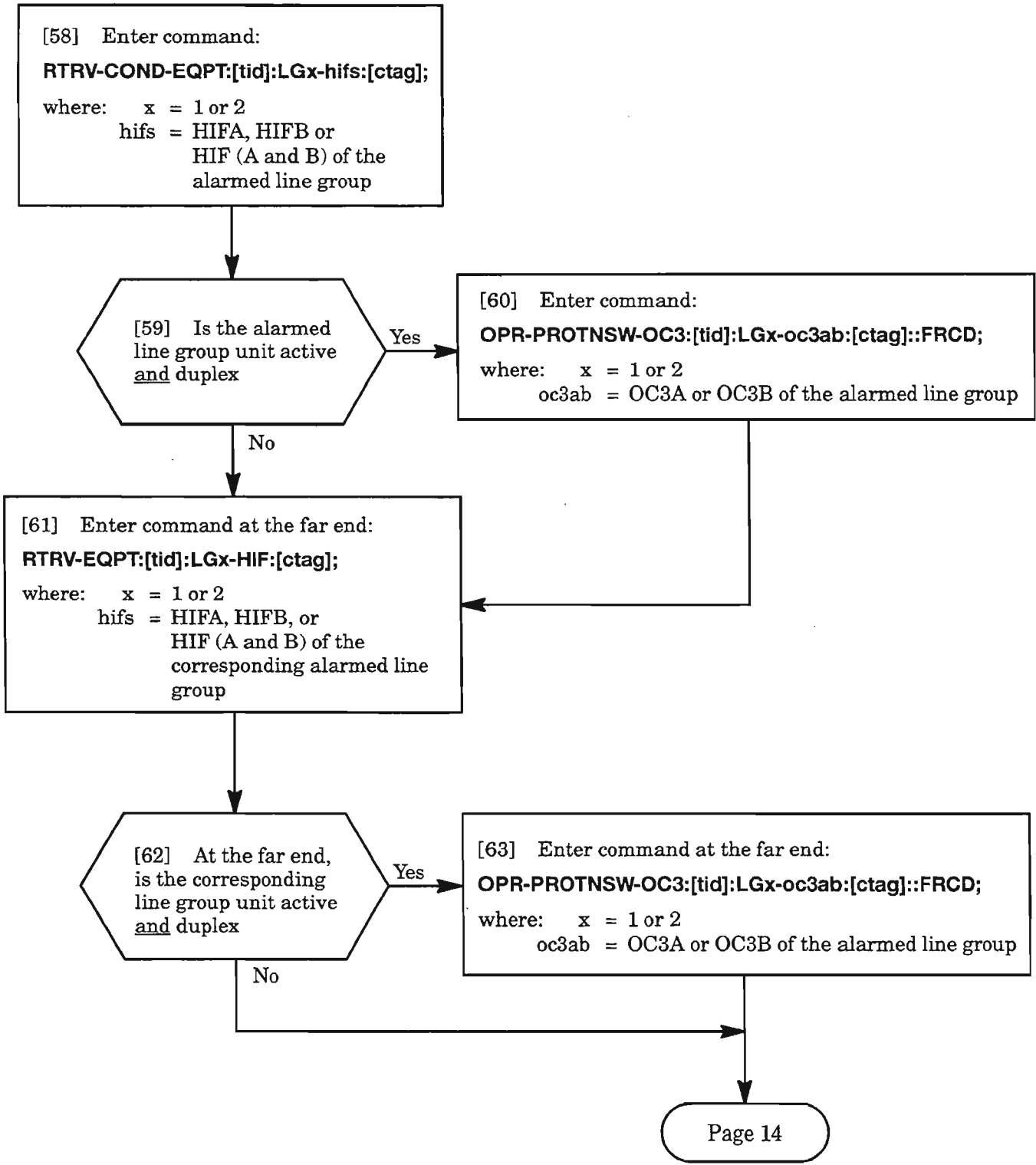


**APSCM**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 36	029

**APSCM (cont)**



## APSCM (cont)

[64] Enter the following command for the alarmed HIF:

**RMV-EQPT:[tid]:LGx-hifs:[ctag];**

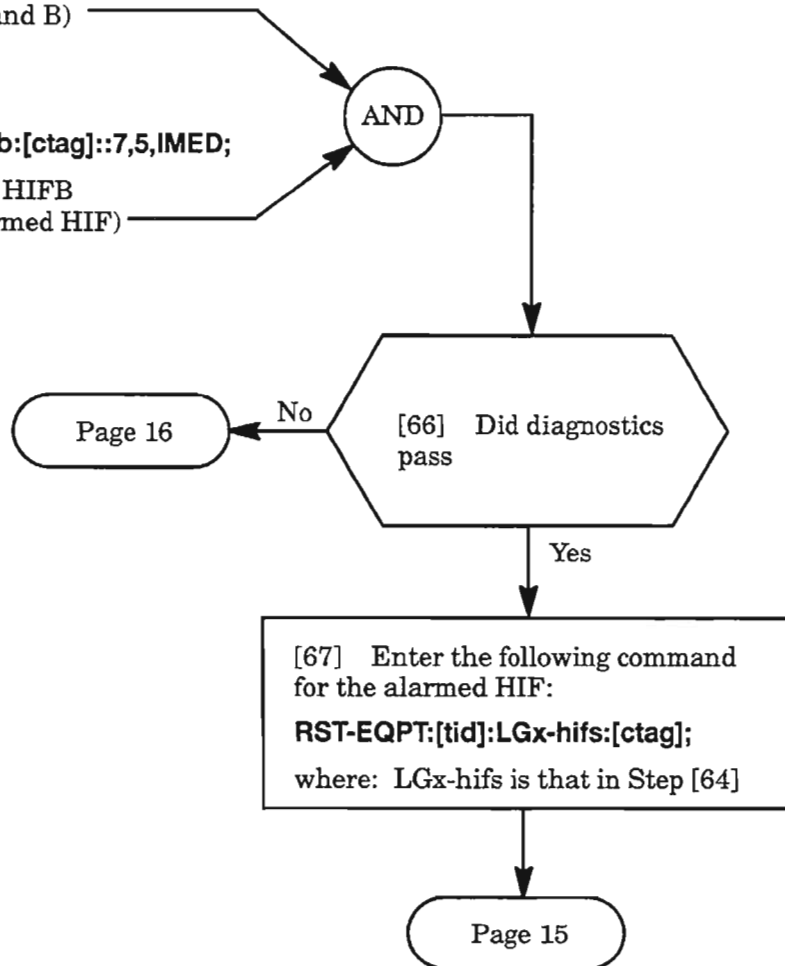
where: x = 1 or 2

hifs = HIFA or HIFB or  
HIF (A and B)

[65] Enter command:

**DGN-EQPT;:[tid]:LGx-hifab:[ctag]::7,5,IMED;**

where: hifab = HIFA or HIFB  
(the alarmed HIF)



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 14 of 36	029

**CLEAR OC3 ALARM**

# APSCM (cont)

[71] At the far end, enter command:

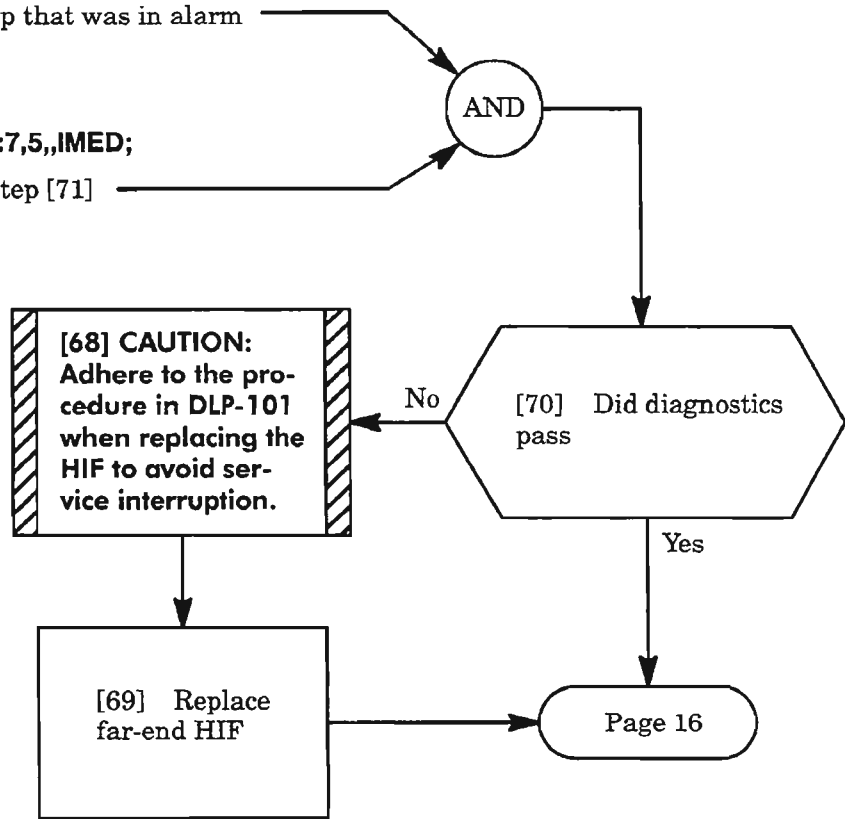
**RMV-EQPT:[tid]:LGx-hifs:[ctag];**

where:    x = 1 or 2  
           hifs = HIFA or HIFB or  
                   HIF (A and B) the line group  
                   that corresponds to the original  
                   line group that was in alarm

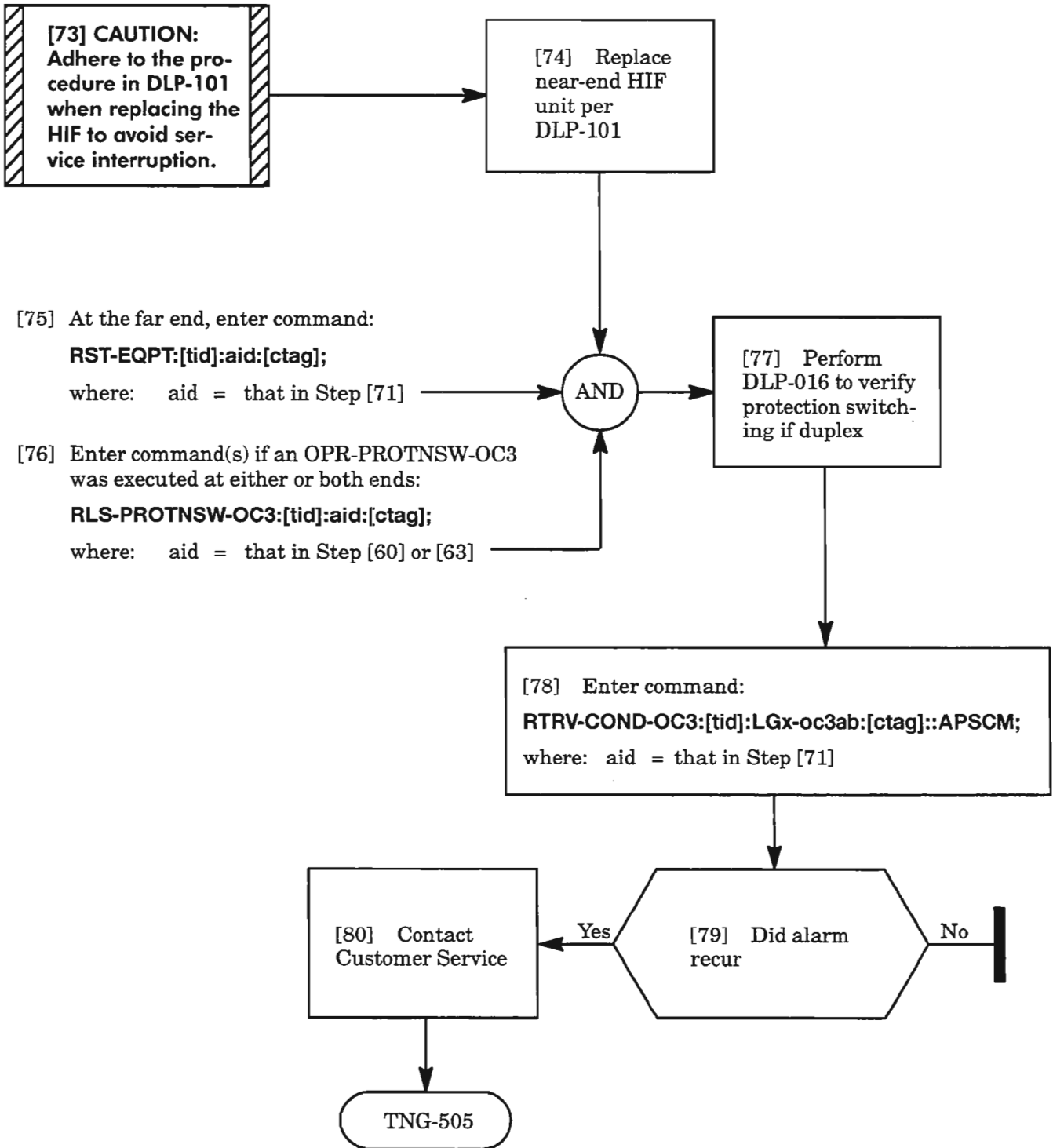
[72] Enter command:

**DGN-EQPT:[tid]:aid:[ctag]:7,5,,IMED;**

where:    aid = that in Step [71]



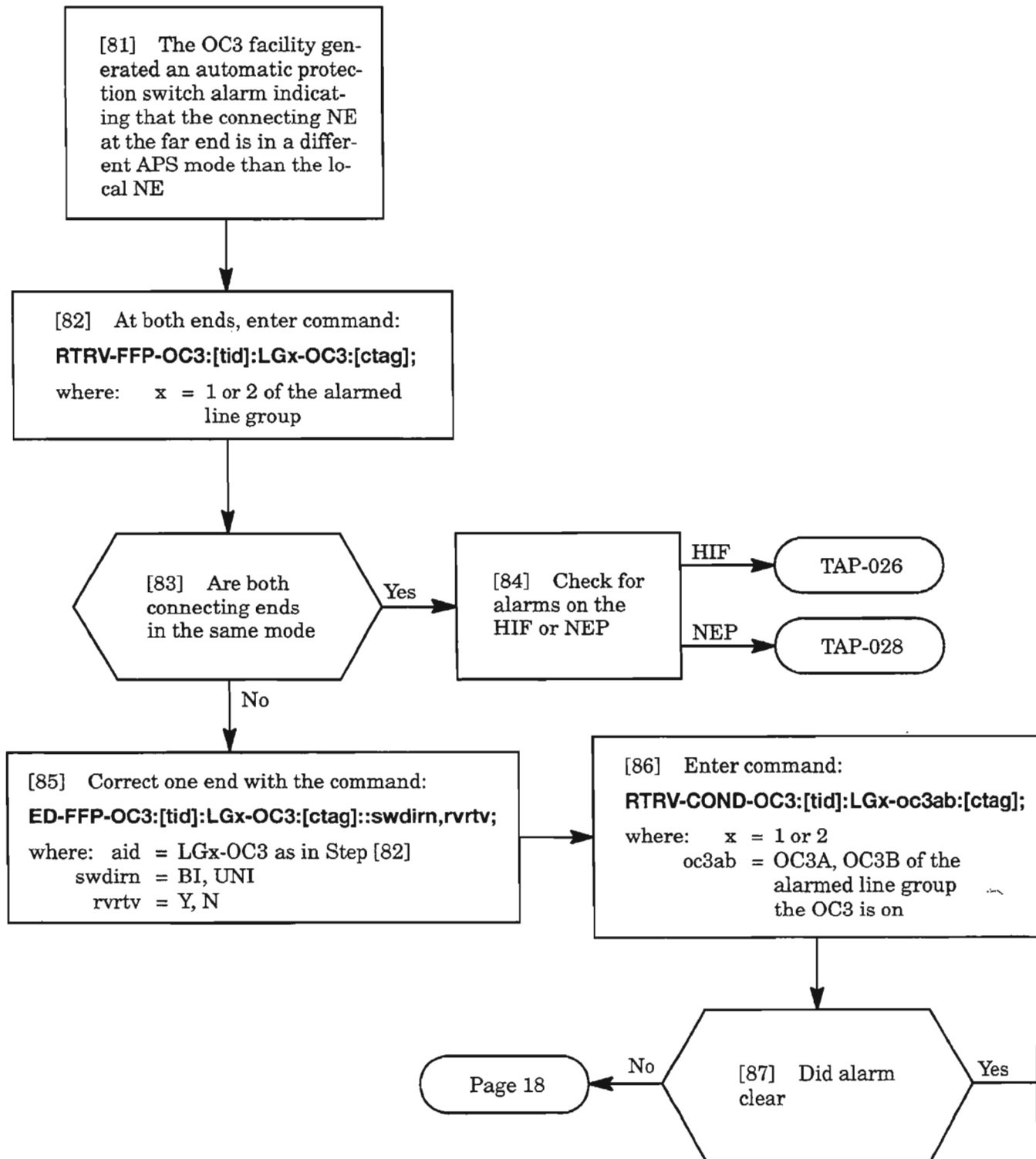
**APSCM (cont)**



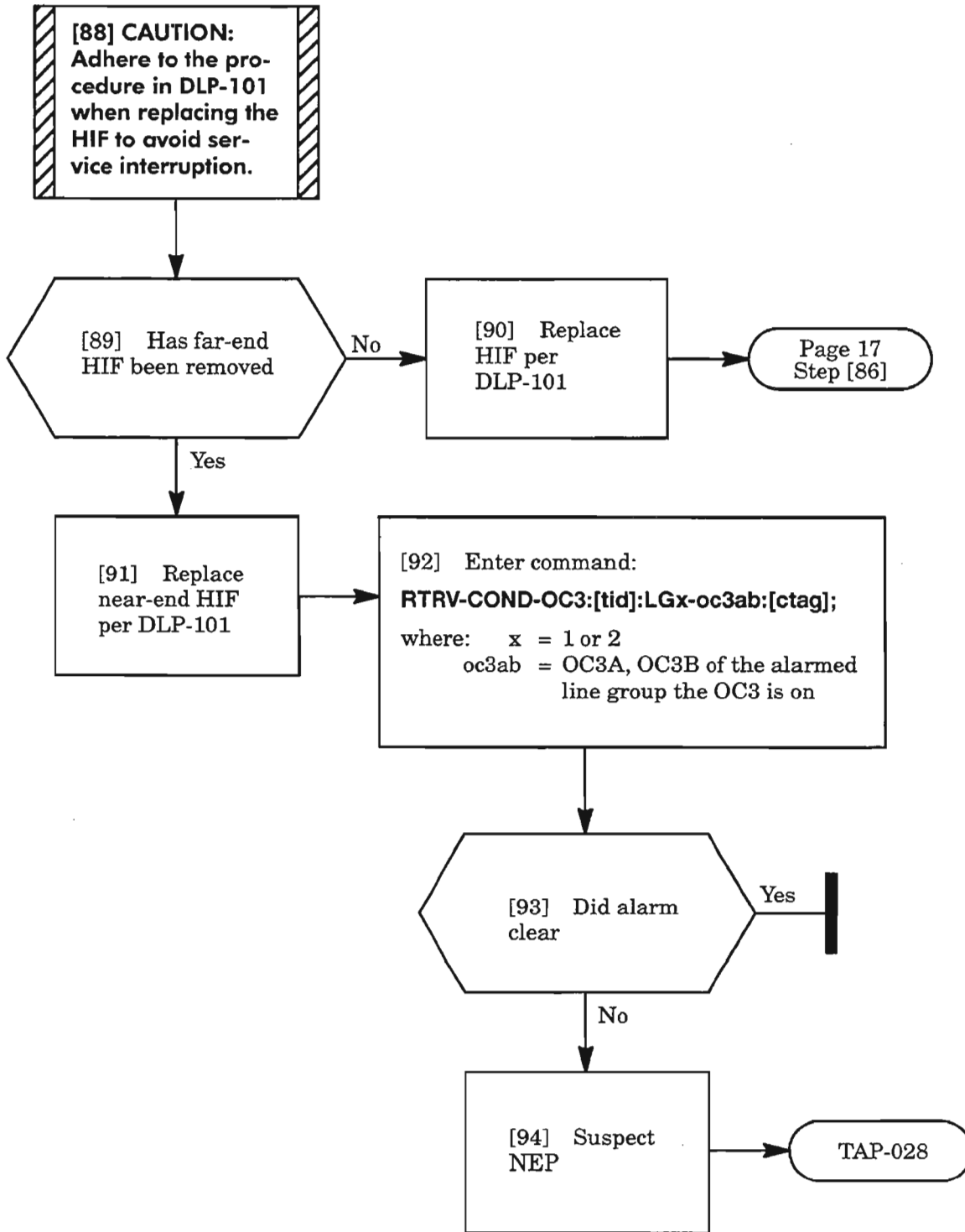
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 16 of 36	029



**APSCONF**



APSCONF (cont)

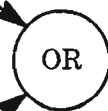


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP 029
PAGE 18 of 36	

# BERL-HT, BERL-LT

[95] The OC3 facility has detected a BERL-HT; the number of bits in error to the number of bits transmitted has degraded to the point of exceeding a set threshold,  $10^{-5}$  to  $10^{-9}$  (signal failure is imminent)

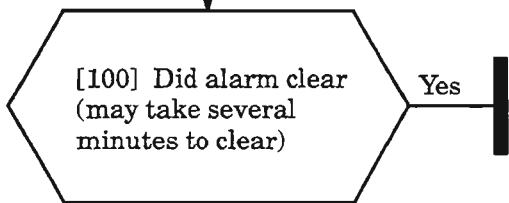
[96] The OC3 facility has detected a BERL-LT, a bit error ratio exceeding a threshold setting between  $10^{-3}$  and  $10^{-4}$



**[97] CAUTION:**  
Adhere to DLP-101 in the following steps in replacing HIFs to avoid interrupting service.

[99] Enter command:  
**RTRV-COND-OC3:[tid]:LGx-oc3ab:[ctag];**  
where: x = 1 or 2  
oc3ab = OC3A, OC3B of the alarmed line group the OC3 is on

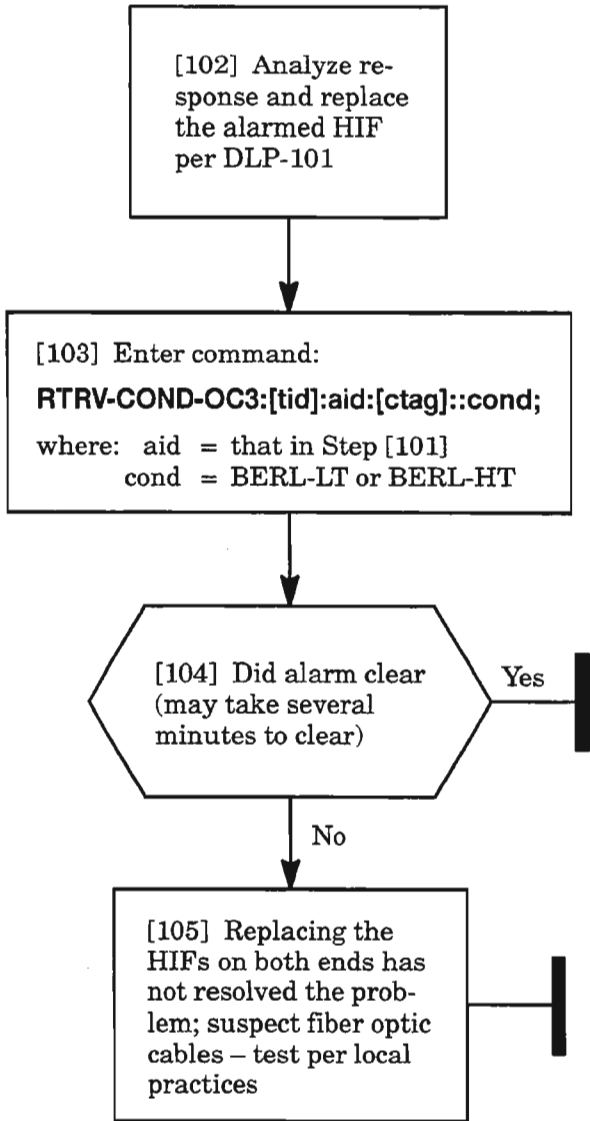
[98] Analyze response and replace the alarmed HIF per DLP-101



[101] At the far end, enter command:  
**RTRV-EQPT:[tid]:aid:[ctag];**  
where: aid = corresponding line group (LGx-HIF, with x = 1 or 2)

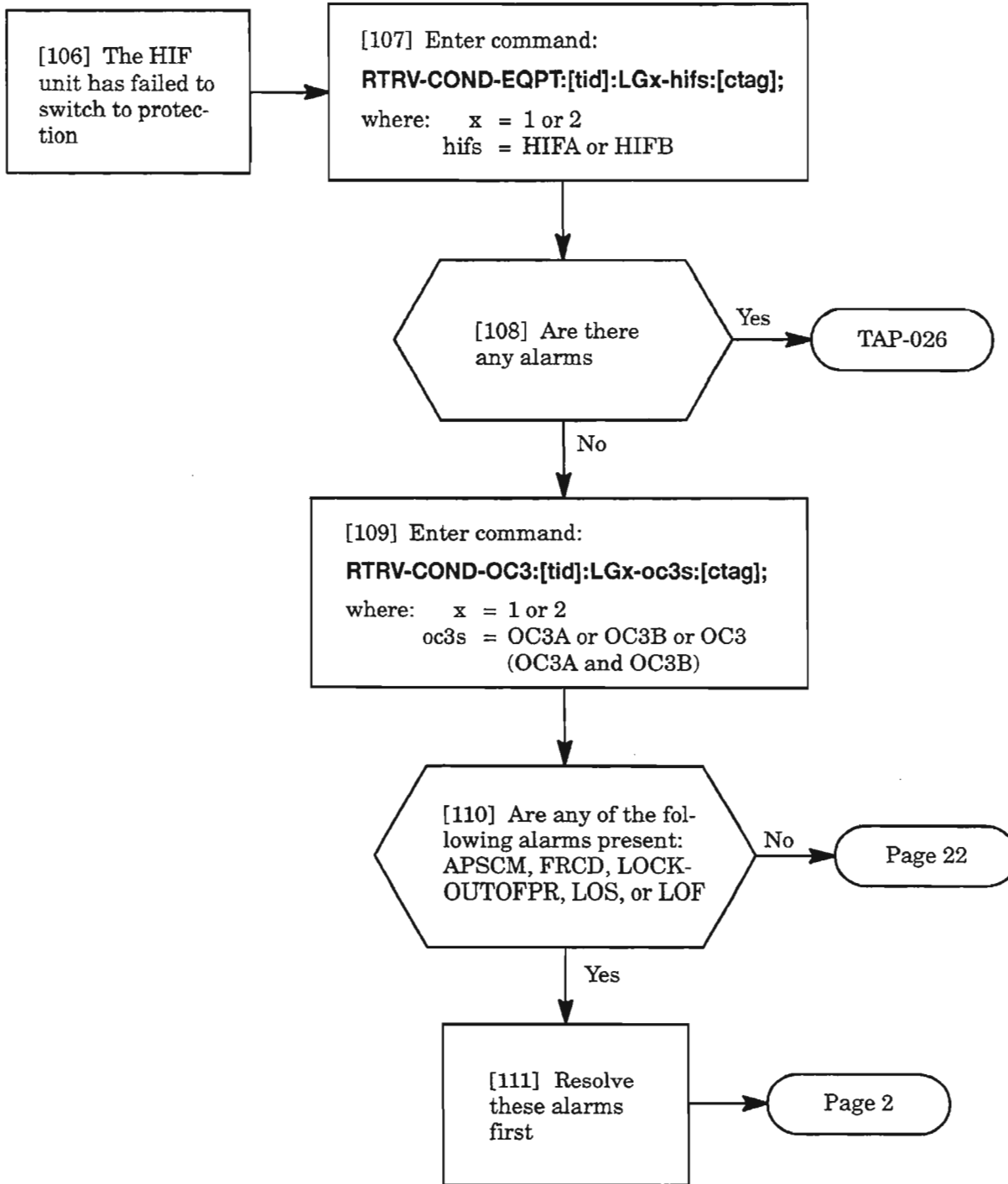
Page 20

**BERL-HT, BERL-LT (cont)**

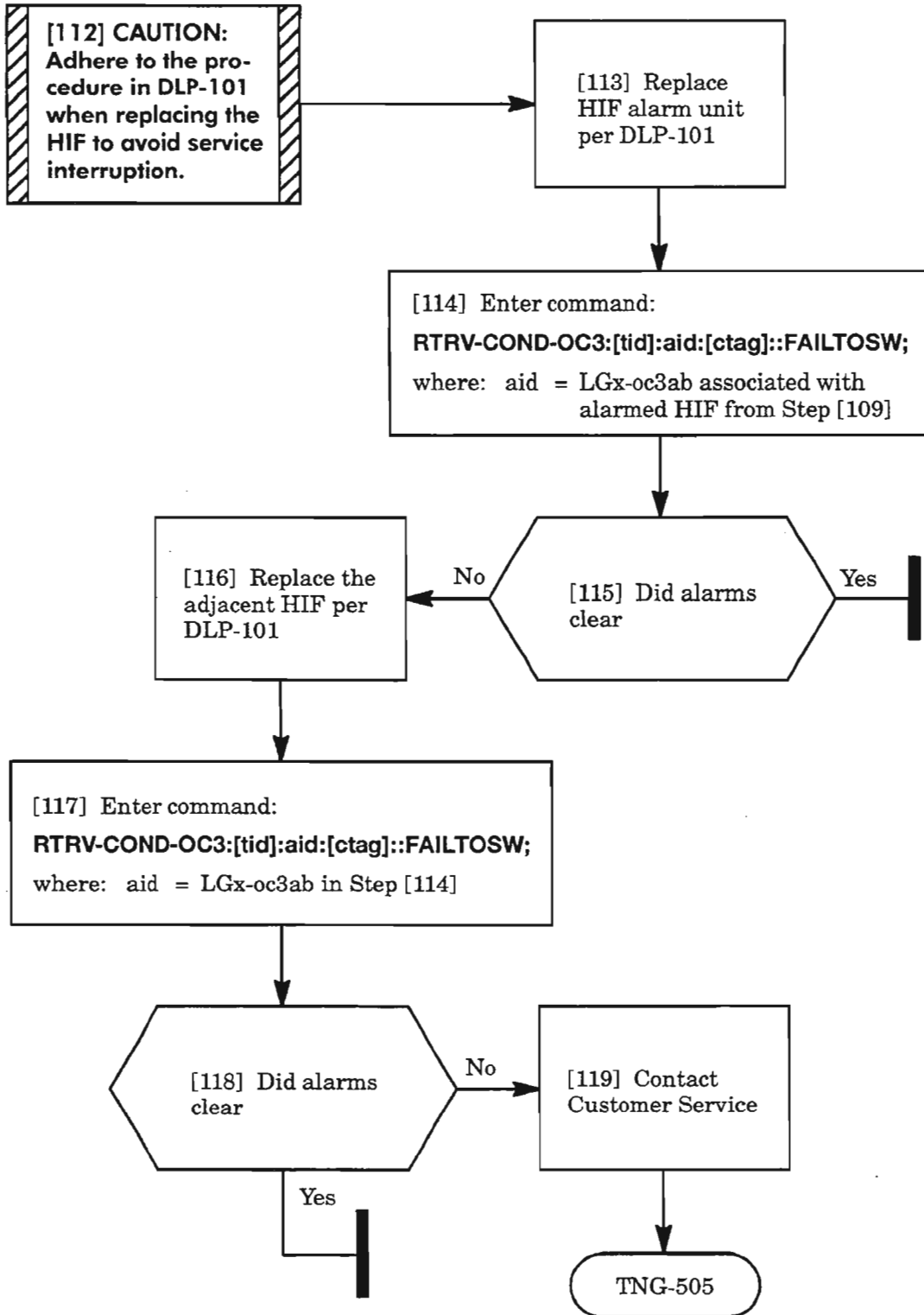


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 20 of 36	029

# FAILTOSW

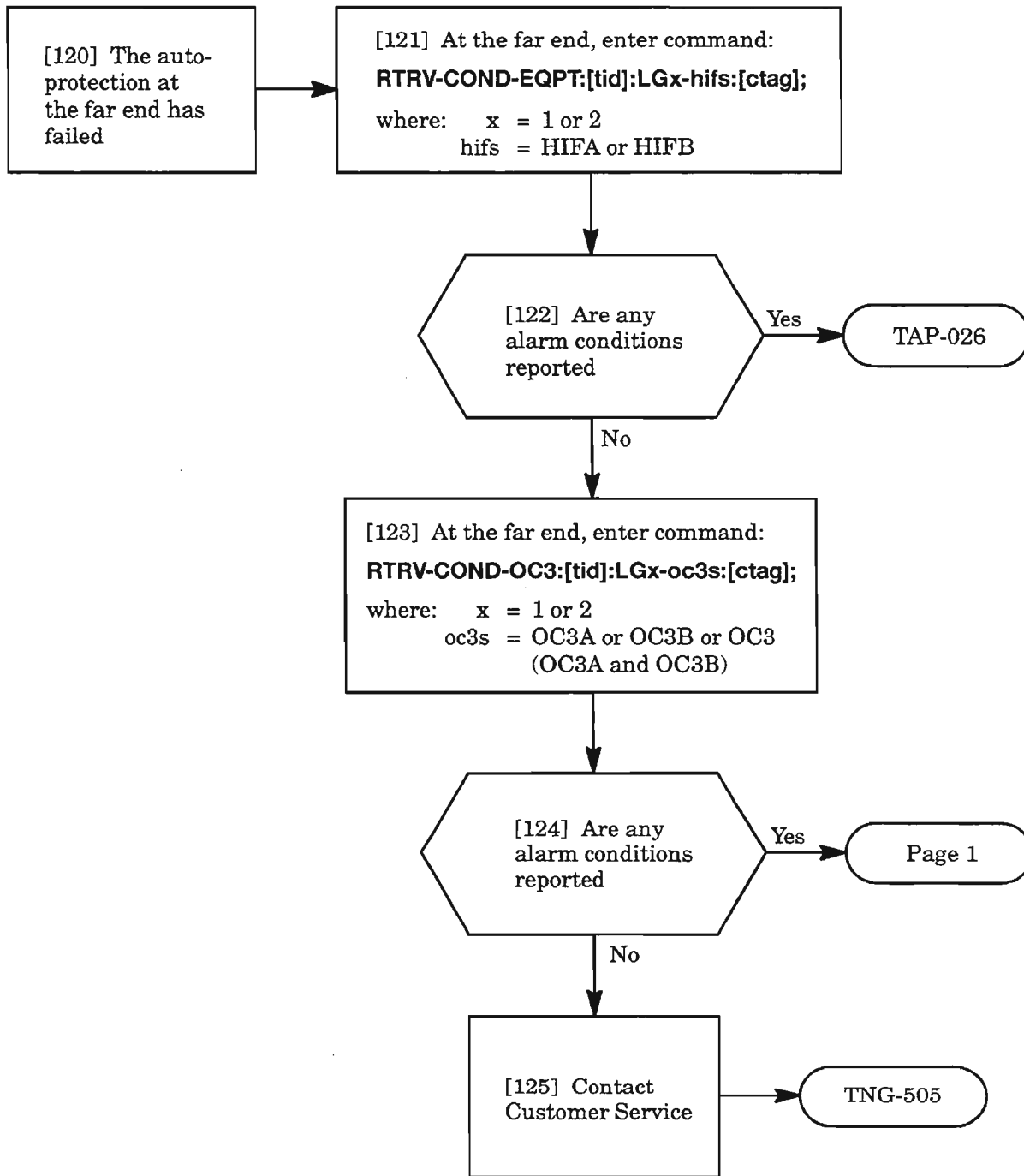


**FAILTOSW (cont)**

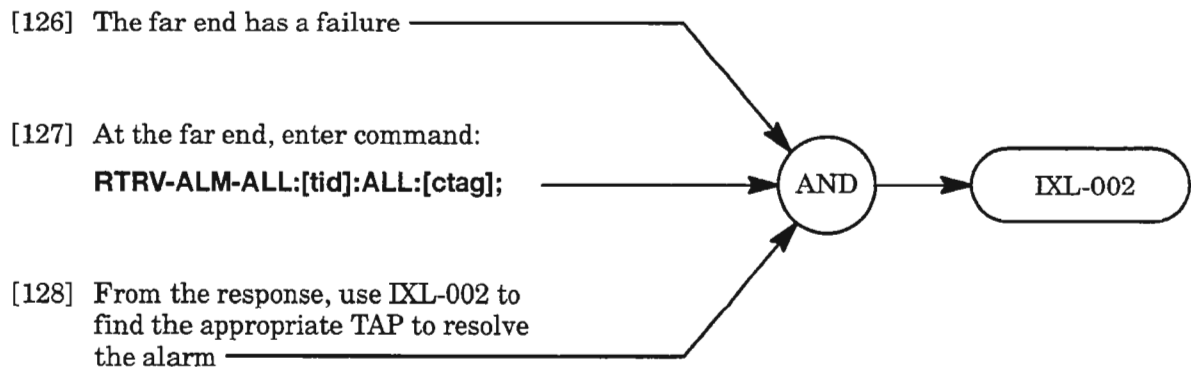


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 22 of 36	029

**FEPRLF**



**FERF**

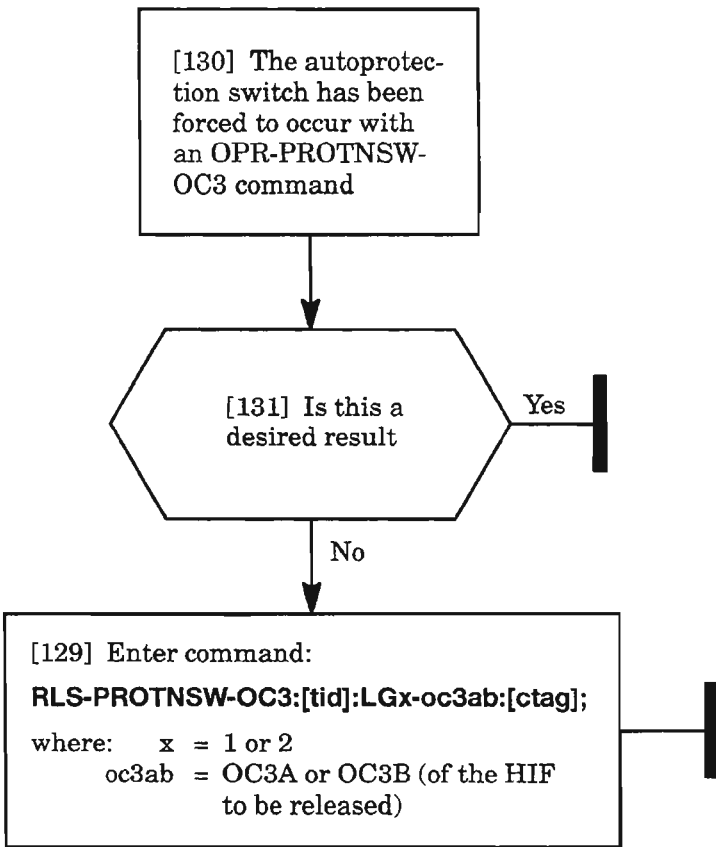


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 24 of 36	029

**CLEAR OC3 ALARM**



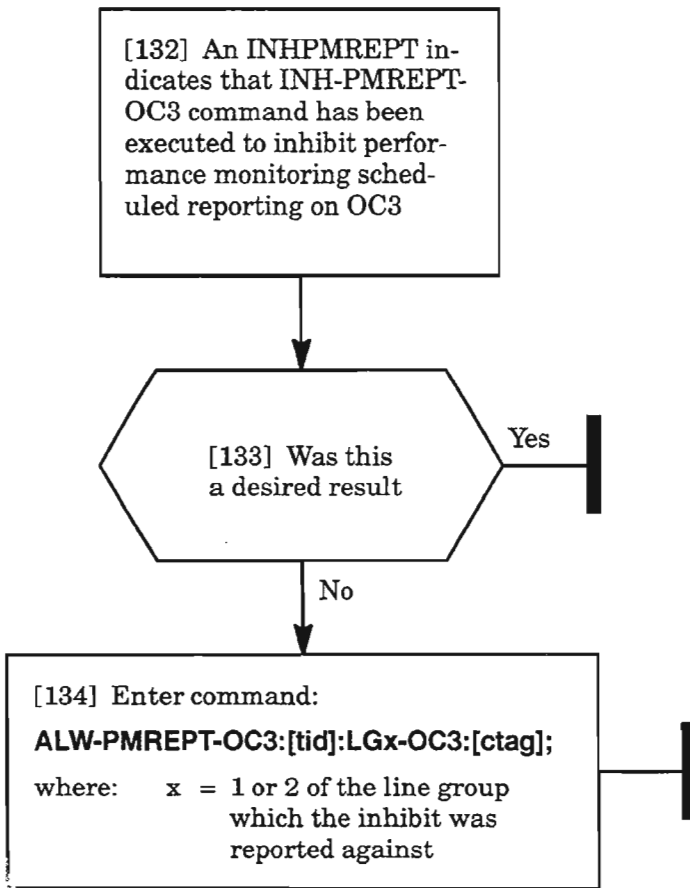
# FRCD



**CLEAR OC3 ALARM**

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 25 of 36	029

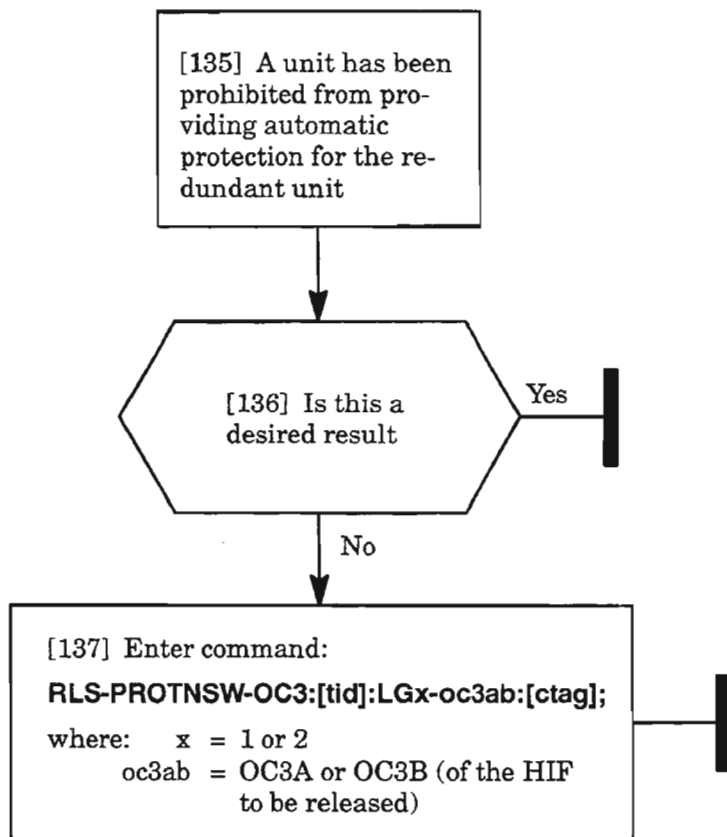
# INH-PMREPT



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 26 of 36	029

**CLEAR OC3 ALARM**

# LOCKOUTOFPR



CLEAR OC3 ALARM

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 27 of 36	029

## LOF/LOS

[138] A unit has detected an LOF or an LOS alarm. The LOF (Loss of Frame) indicates that an out-of-frame condition has persisted for more than 3 ms. The LOS (Loss of Signal) indicates loss of a receive signal, an all zeros pattern for over 100 ms, or that clock recovery is lost. A poor connection or bad fiber may cause this error

[139] Enter command:

**RTRV-COND-OC3:[tid]:LGx-oc3s:[ctag]::cond;**

where:    x = 1 or 2  
          oc3s = OC3A or OC3B or OC3  
                      (OC3B and OC3B)  
          cond = LOF or LOS

**[140] CAUTION:**  
Adhere to the procedure in DLP-101 when replacing the HIF to avoid service interruption.

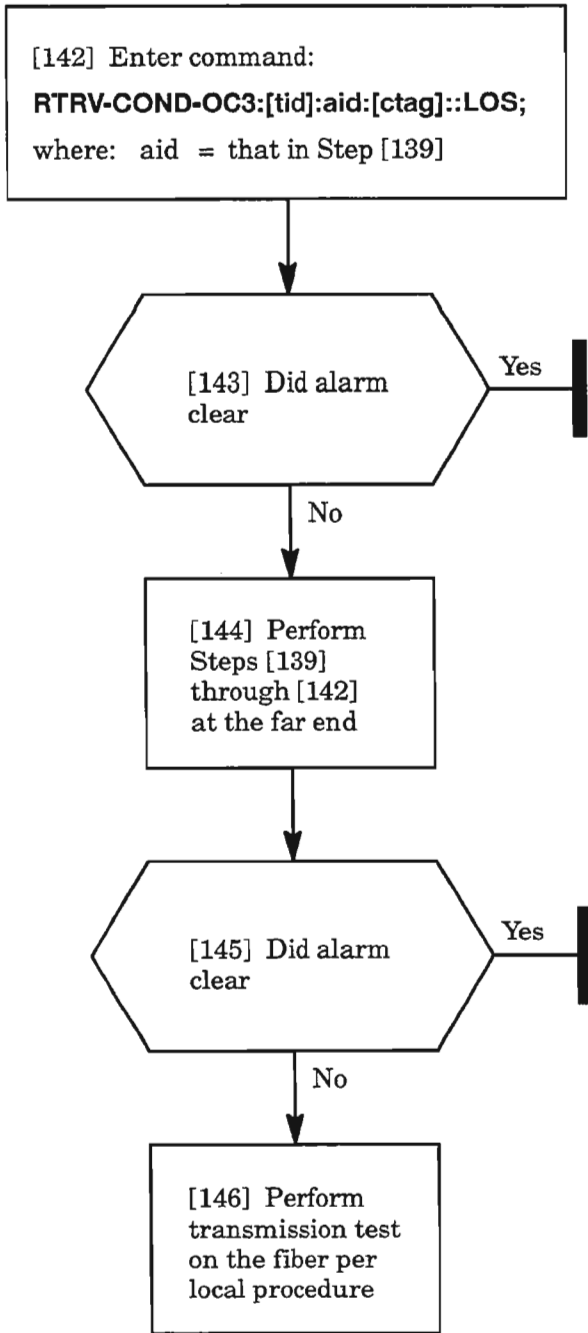
[141] Replace the alarmed HIF unit per DLP-101

Page 29

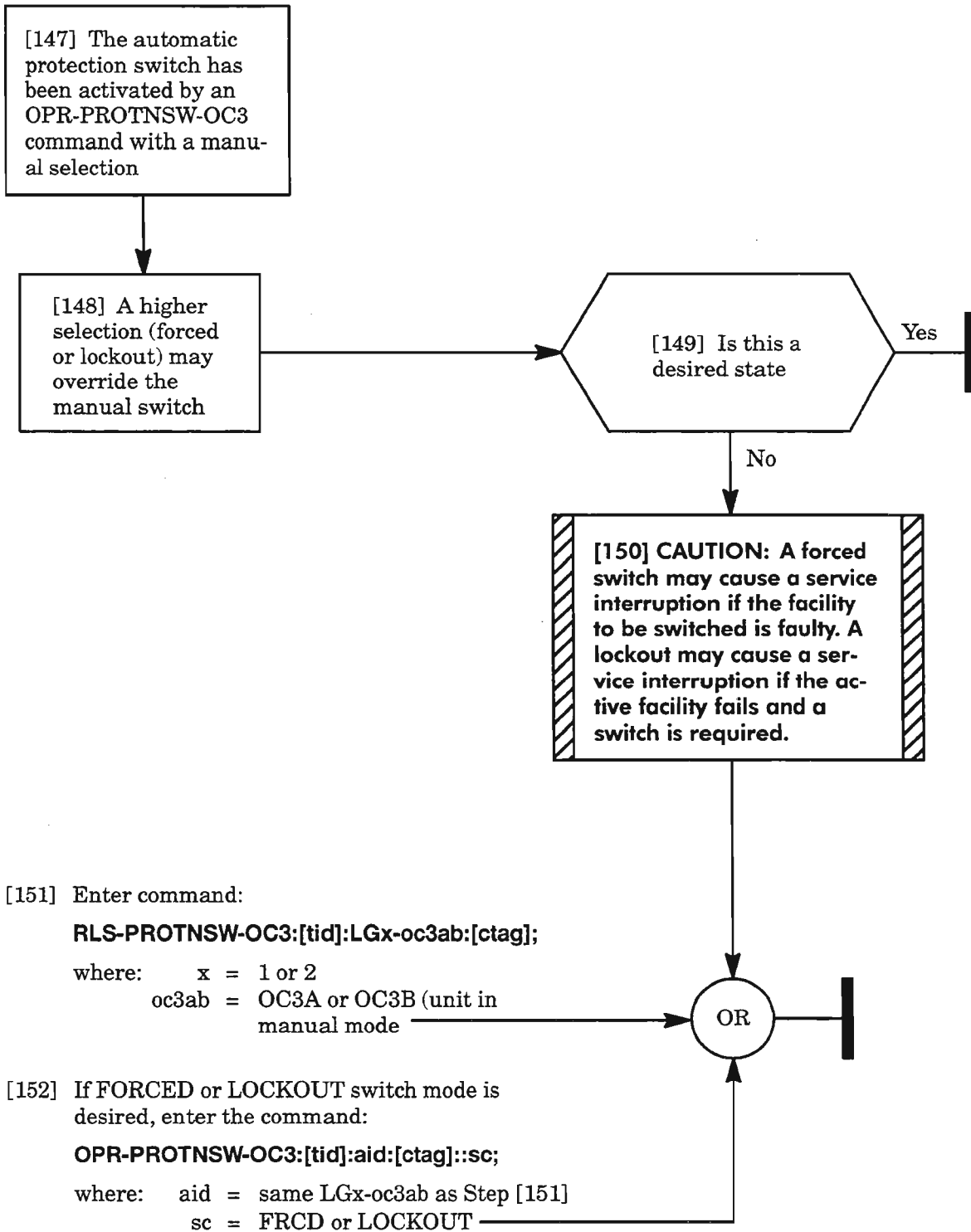
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 28 of 36	029

**CLEAR OC3 ALARM**

# LOF/LOS (cont)

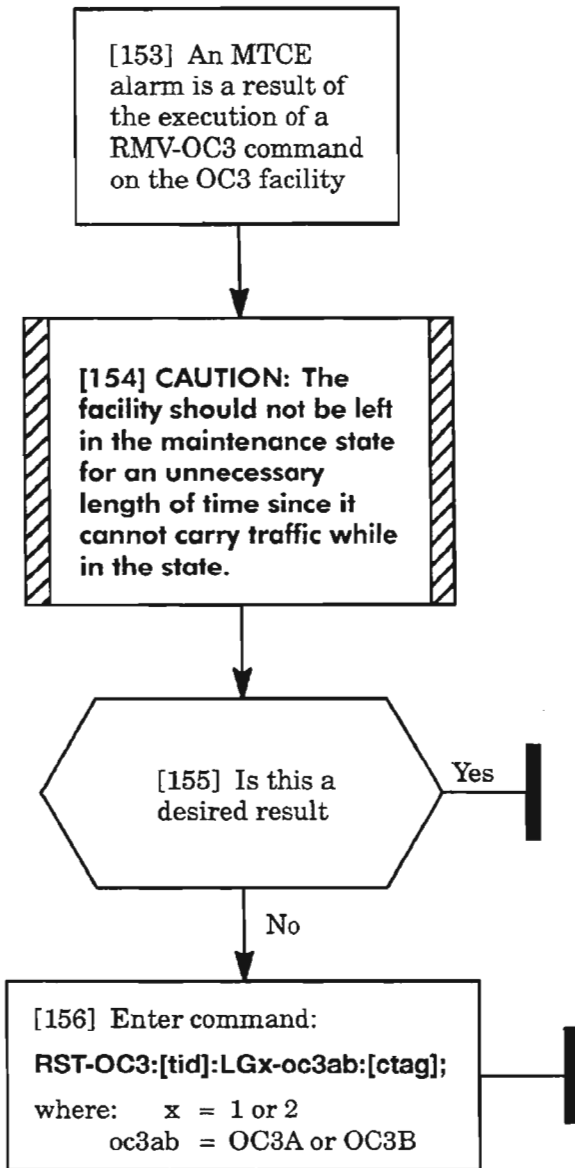


**MAN**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 30 of 36	029

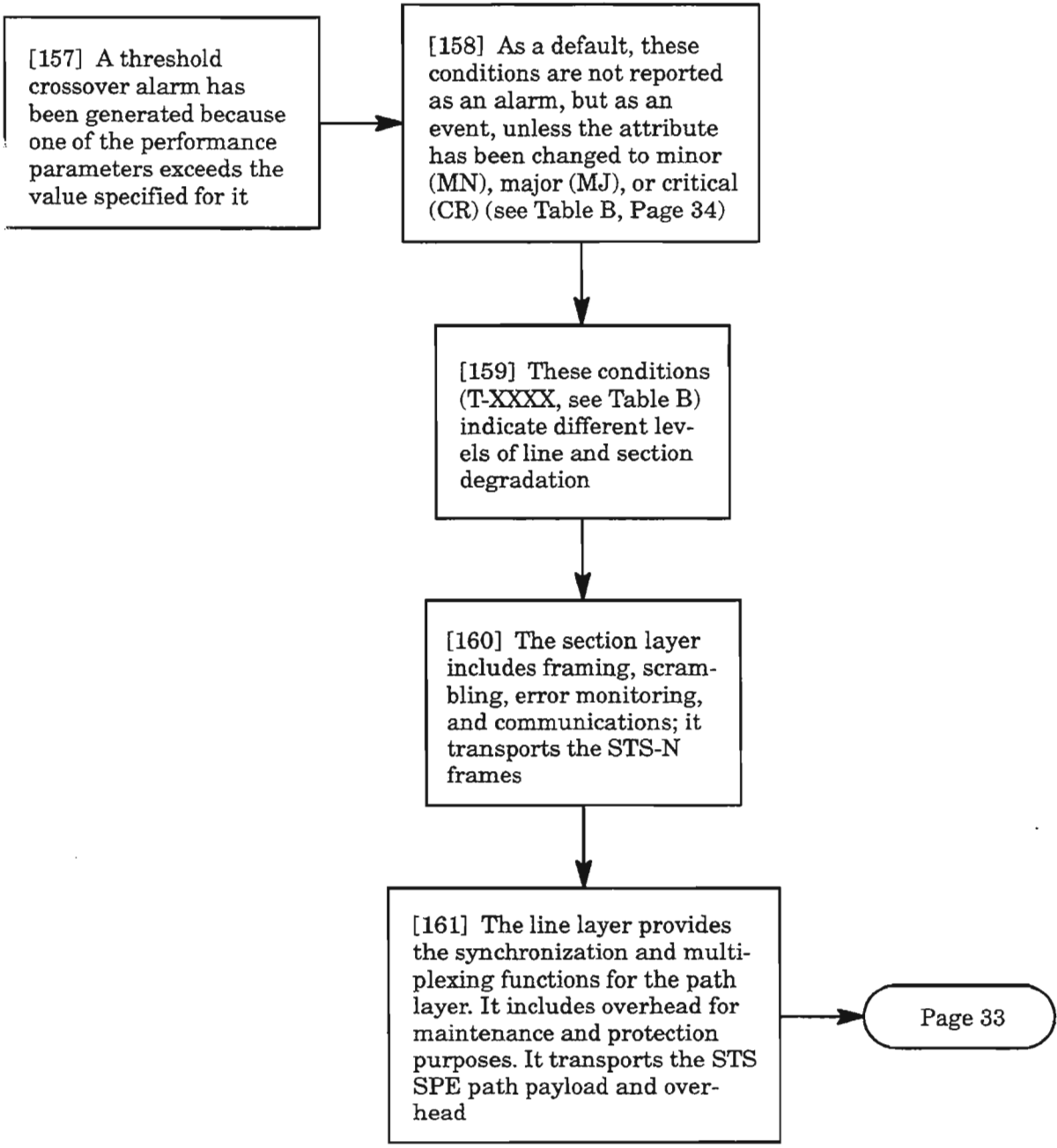
# MTCE



CLEAR OC3 ALARM

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 31 of 36	029

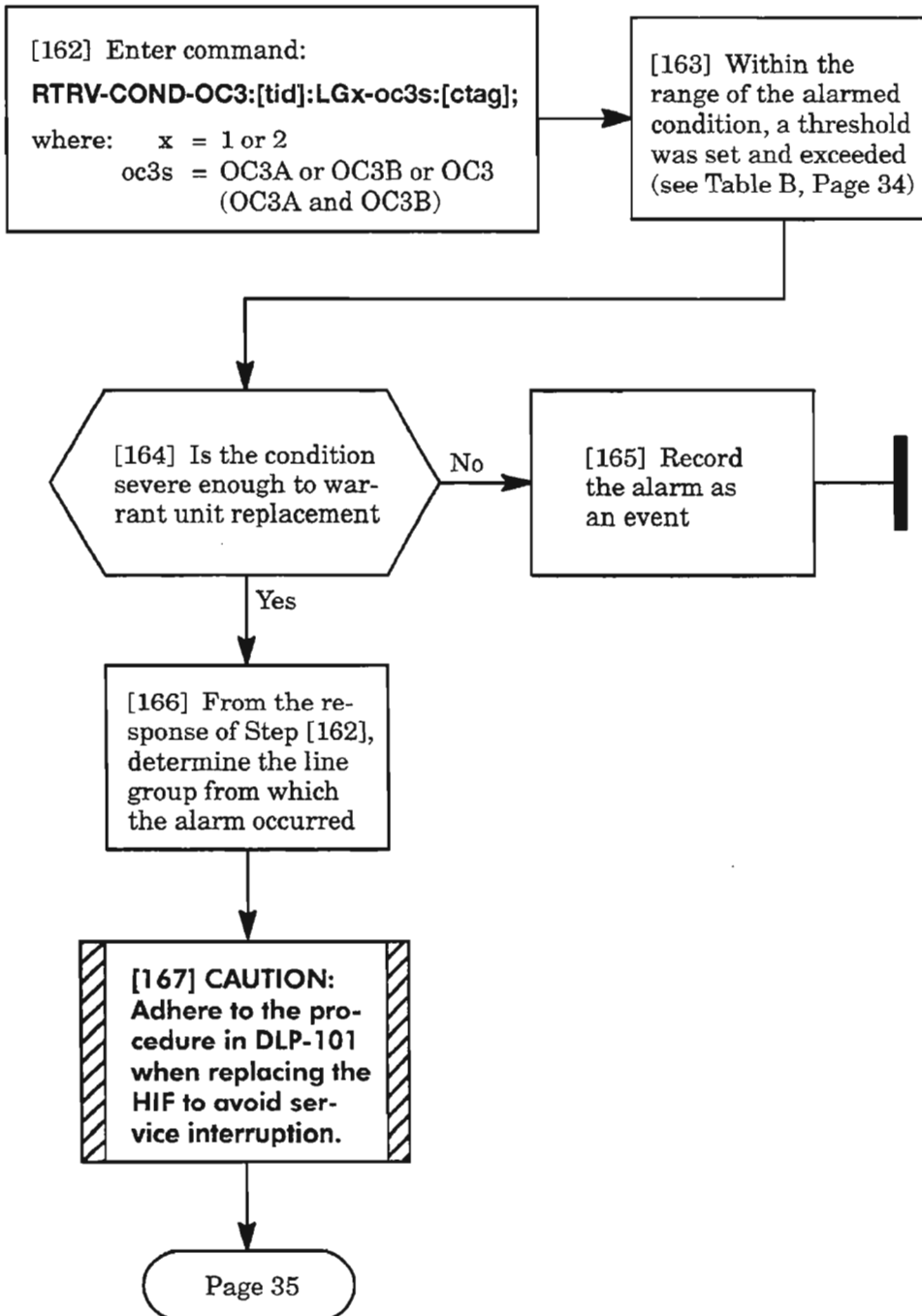
**T-XXX**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 32 of 36	029



**T-XXX (cont)**



**Table B. Parameter Ranges**

TYPE	DEFAULT		RANGE	DESCRIPTION
	15-MIN	1-DAY		
CVL	1328	13288	1...4,294,967,295	Line Coding violations – (possible 8 errors per STS-1 frame or 24 per STS-3)
CVS	1328	13288	1...4,294,967,295	Section Coding violations – (possible 8 errors per STS-N frame)
BERL-LT	7	7	5...9	Degraded failure of bit error ratio - addition of parity violations detected in each STS-1 line BIP-8 of the OC-3 that exceed a preselected threshold
DSESL	2,500	2,500	1...65535	Number of coding violations to make one SESL
DSESS	2,500	2,500	1...65535	Number of coding violations to make one SESS
ESL	87	864	1...65535	Line errored seconds – a second during which one BIP or line AIS (automatic inserted signal) occurred
ESS	87	864	1...65535	Section errored seconds – at least one LOS, BIP, or OOF/COFA in 1 second
SEFS	2	17	1...65535	Severely errored framing seconds – one or more OOFs/COFAs in 1 second
SESL	1	4	1...65535	Line severely errored seconds – a second with 32 or more BIPs or a line AIS
SESS	1	4	1...65535	Section severely errored seconds – with 16 or more BIPs, LOS, OOF/COFA in 1 second
BERL-HT	4	4	3...4	Signal failure of bit error ratio – BER exceeding 10-E3, or line AIS, loss of OC-3 frame, loss of signal, stuck bit, or other hard failure
UASL	3	10	1...65535	Line unavailable seconds – duration in seconds for which the STS line is unavailable

**T-XXX (cont)**

**[168] CAUTION:**  
A replaced HIF unit may require down-loading. If so, see DLP-116.

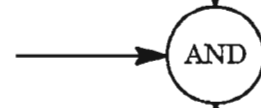
**[169] CAUTION:**  
Adhere to DLP-101 to prevent an LAIS to far-end active unit.

[170] Replace HIF unit per DLP-101

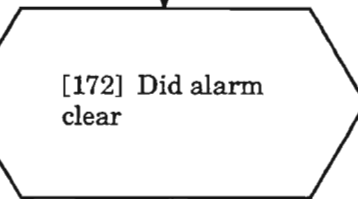
[171] Enter command:

**RTRV-COND-OC3:[tid]:LGx-oc3s:[ctag];**

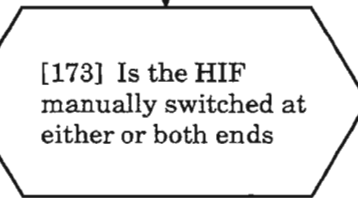
where: x = 1 or 2  
oc3s = OC3A or OC3B or OC3  
(OC3A and OC3B) of the alarmed HIF



Page 36



[174] At the near/far end as applicable, enter command:  
**RLS-PROTNSW-OC3:[tid]:LGx-oc3ab:[ctag];**  
where: x = 1 or 2  
oc3ab = OC3A or OC3B of the HIF switched



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 35 of 36	029

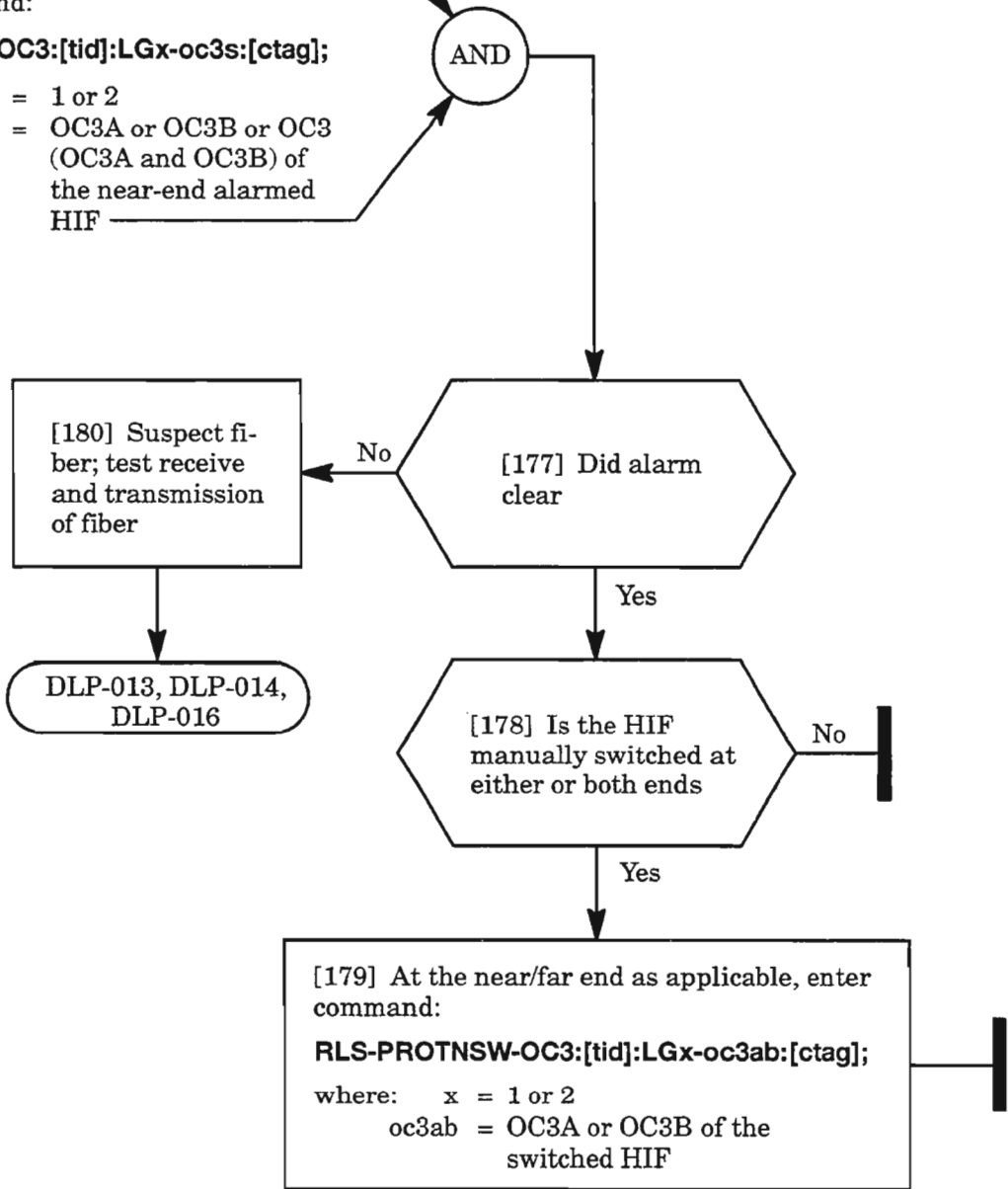
**T-XXX (cont)**

[175] Replace far-end corresponding HIF unit per DLP-101

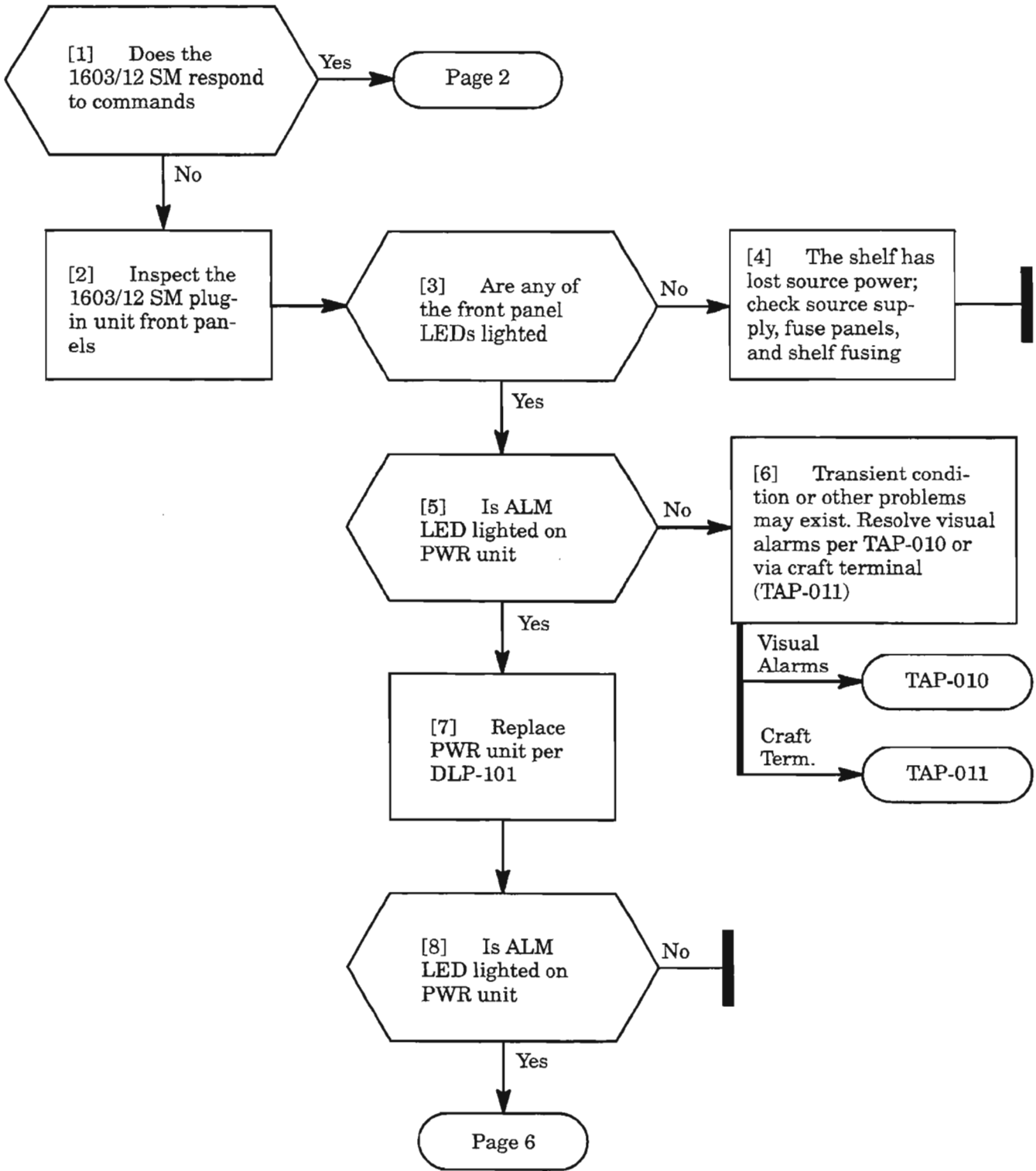
[176] Enter command:

**RTRV-COND-OC3:[tid]:LGx-oc3s:[ctag];**

where: x = 1 or 2  
 oc3s = OC3A or OC3B or OC3  
 (OC3A and OC3B) of the near-end alarmed HIF



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 36 of 36	029

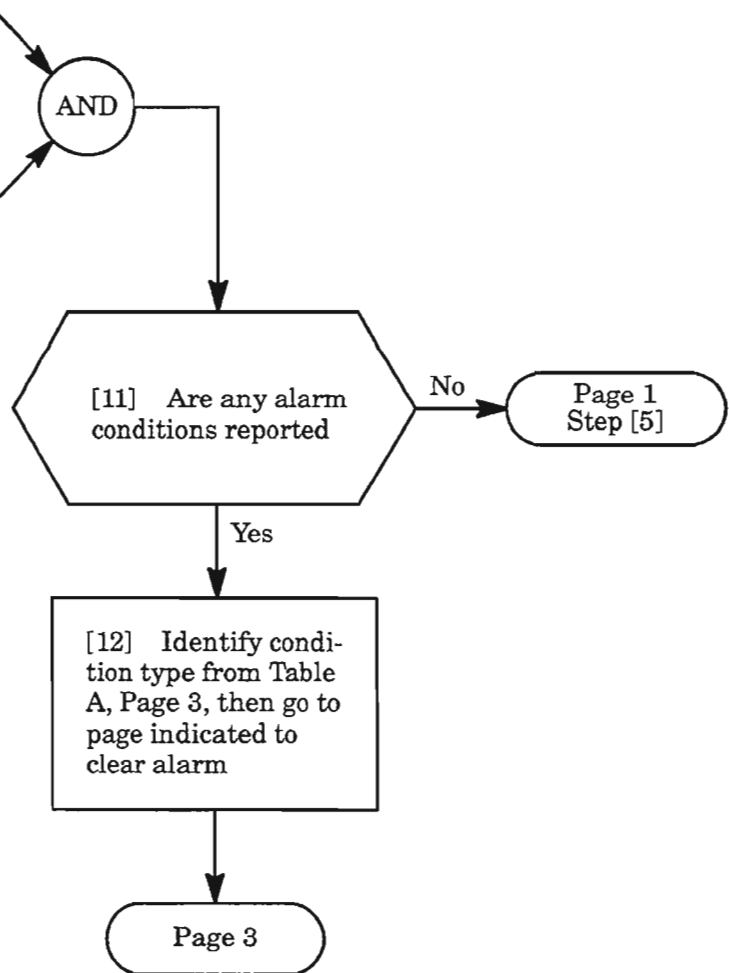


[9] Enter command:

RTRV-ALM-EQPT:[tid]:PWR:[ctag];

[10] Analyze response portion:

pwr,ntfcncde,condeqpt



ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 2 of 11	030

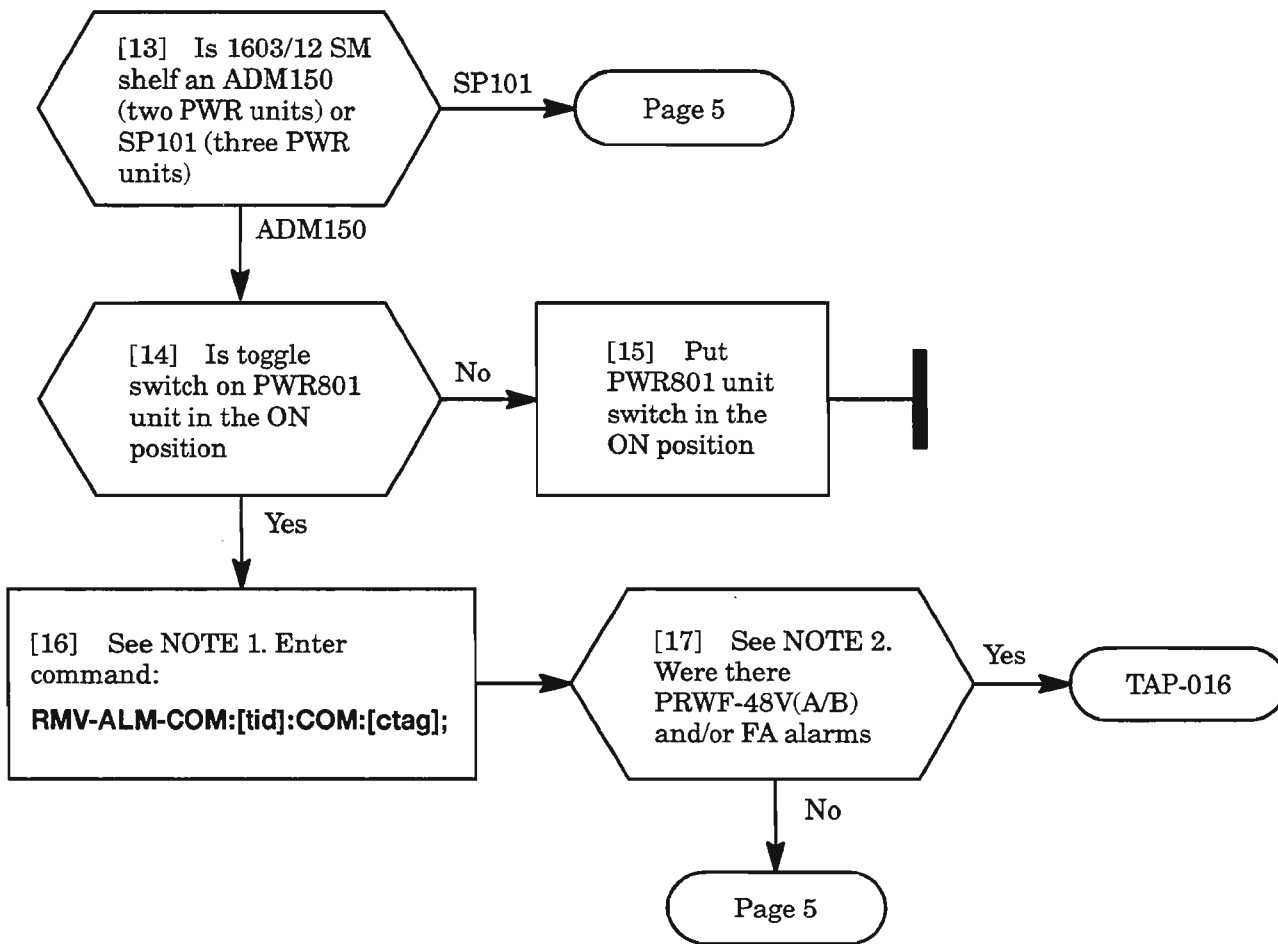
**Table A. Conditions**

<b>CONDITION/ ALARM</b>	<b>DEFINITION</b>	<b>PAGE</b>
CNVT	Power converter failure	4
IMPROPRMVL	Improper removal	7
INT	Unit internal failure detected	5
INVERR	Inventory error	8
MEA	Mismatch of unit and provisioning data	10
MTCE	Removed from service for maintenance	11

**CLEAR POWER ALARM**

<b>ISSUE 3</b>	<b>OCT 1994</b>
<b>ALCL 363-203-502</b>	<b>TAP</b>
<b>PAGE 3 of 11</b>	<b>030</b>

# CNVT



**NOTES:** 1. On the ADM150 shelf, a failure on the Side A -48V input (-48V A) causes a CNVT alarm condition on the Side A PWR unit. Likewise, a failure on the Side B -48V input (-48V B) causes a CNVT alarm on the Side B PWR unit.

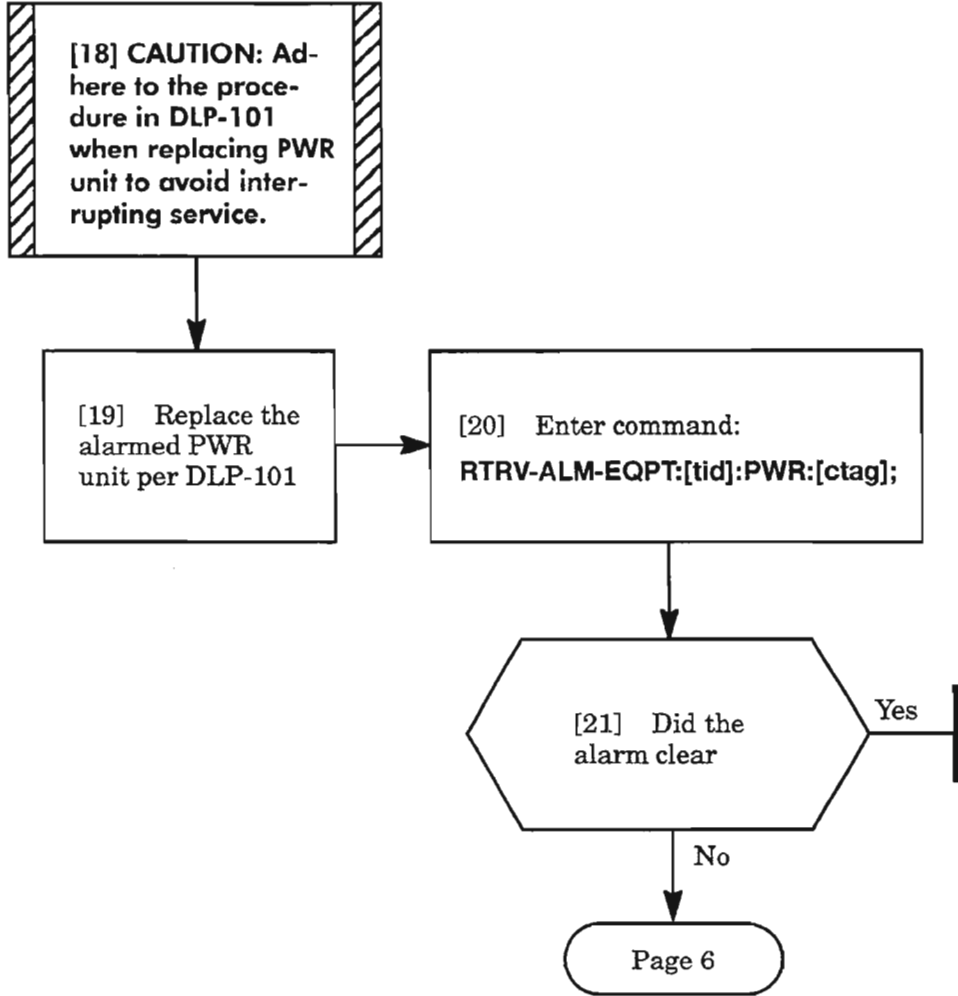
2. If the COA30X is equipped instead of COA40X or later versions, the PWRF-48V(A/B) alarm condition is not reported and must be visually verified. If necessary, check for -48V at the shelf backplane (DLP-004).

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 4 of 11	030

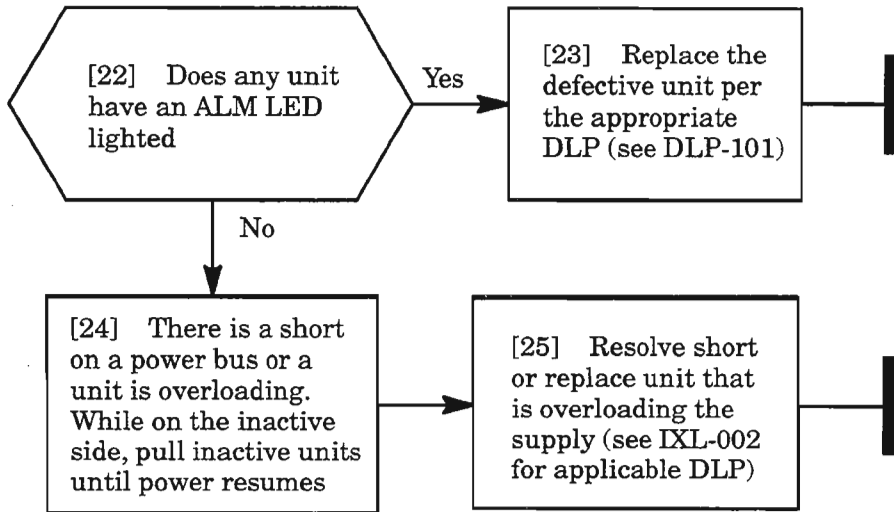
**CLEAR POWER ALARM**



# CNVT/INT



**CNVT/INT (cont)**



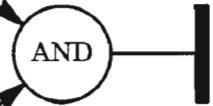
ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 6 of 11	030

**CLEAR POWER ALARM**

# IMPROPRMVL

[26] A PWR unit has been physically removed

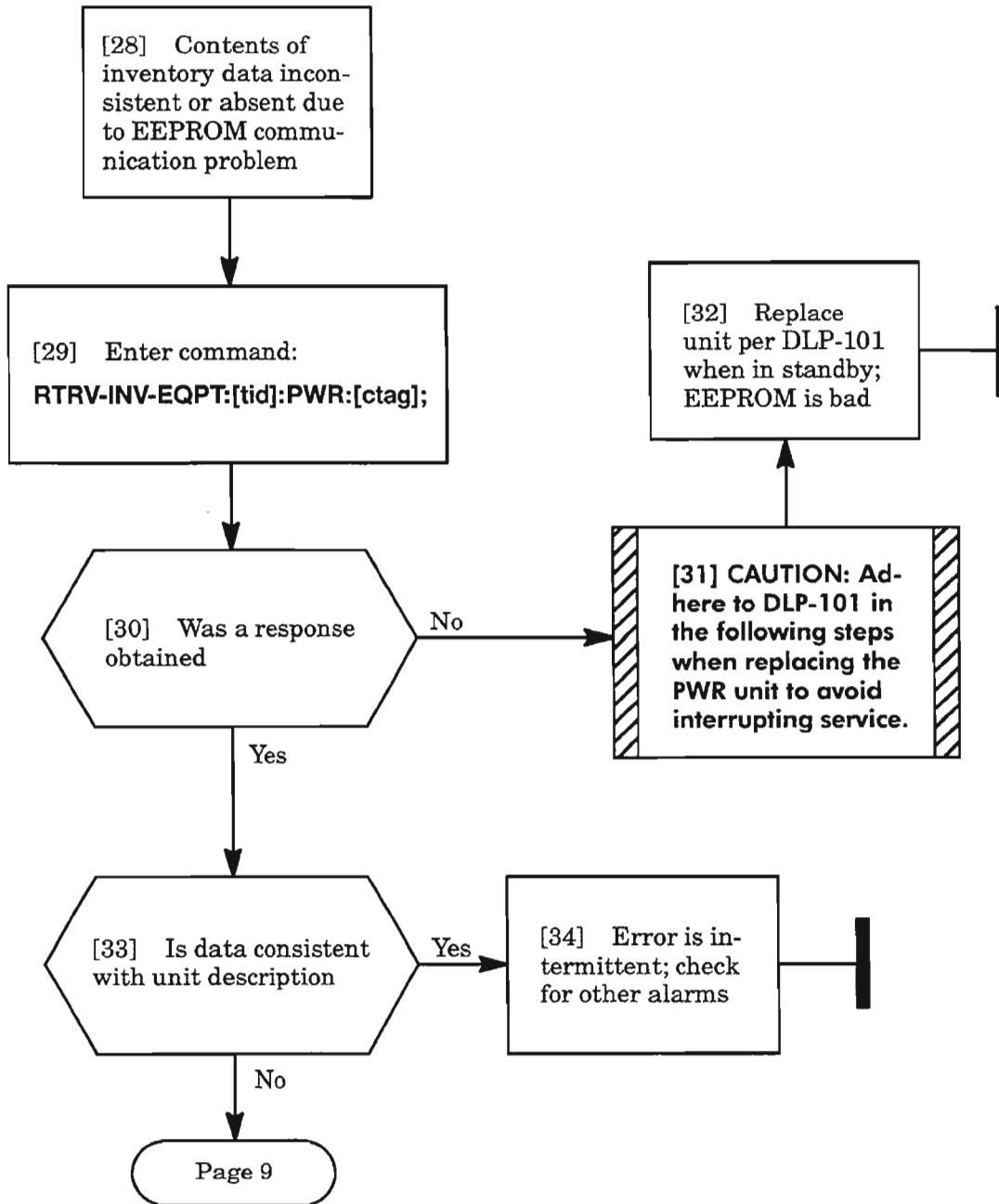
[27] Reinstall or replace removed PWR unit per DLP-101



**CLEAR POWER ALARM**

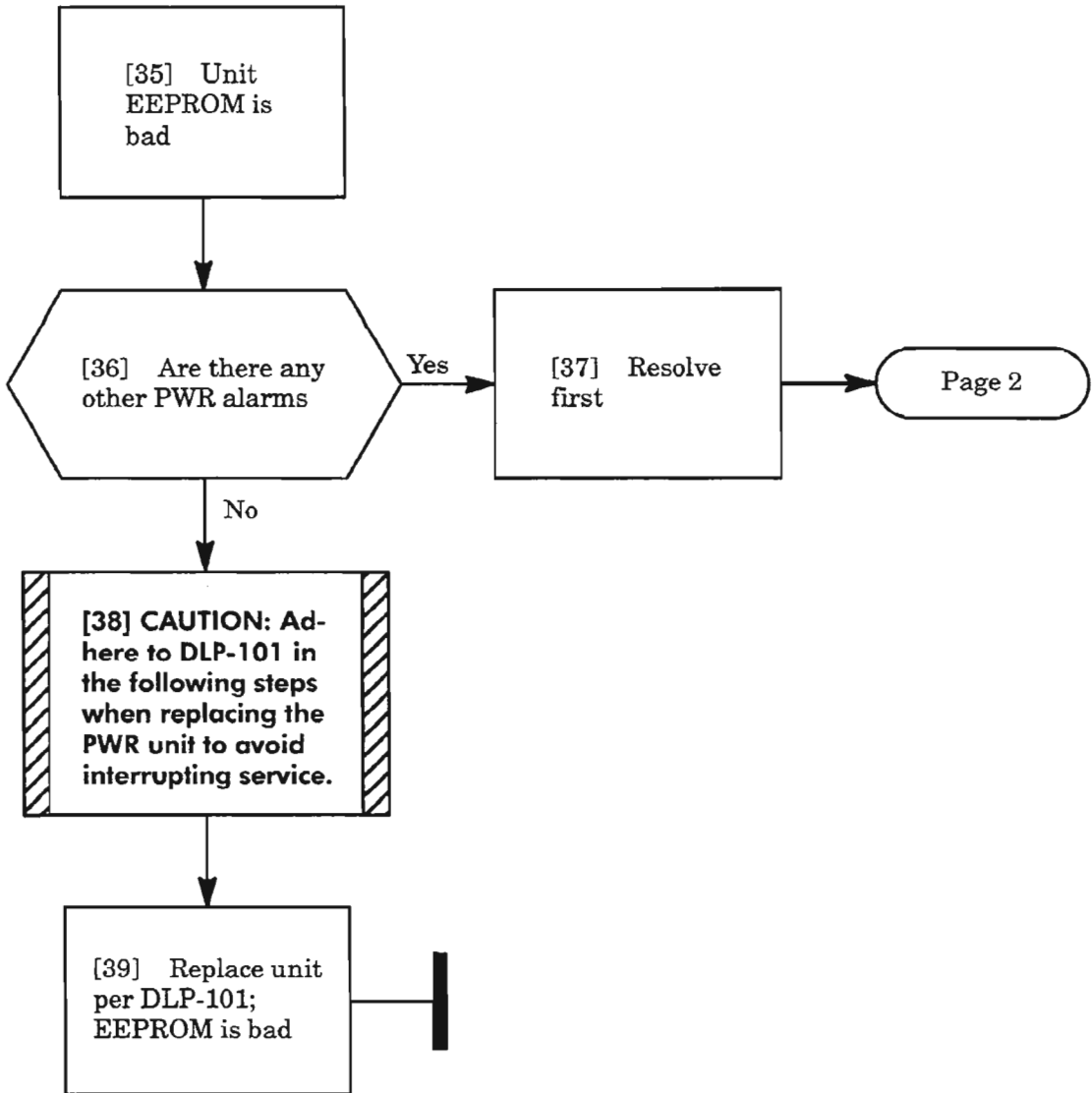
ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 7 of 11	030

# INVERR



ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 8 of 11	030

**INVERR (cont)**

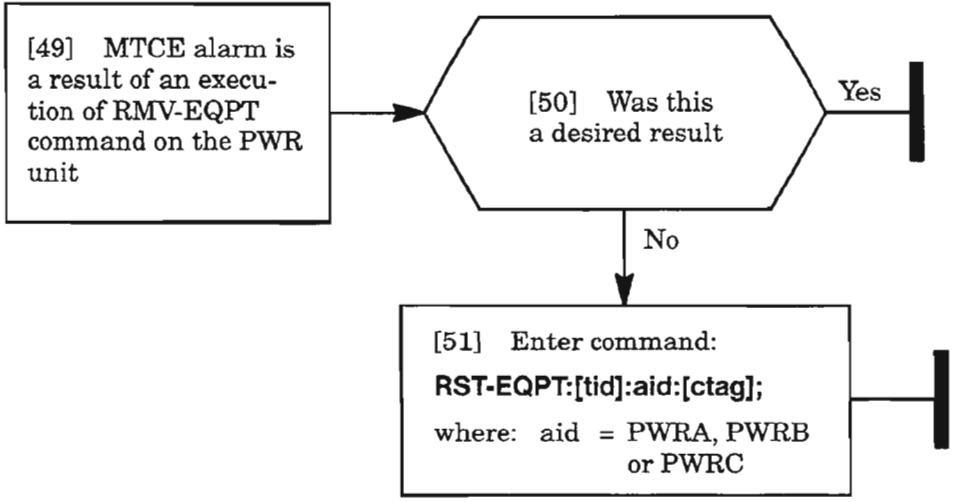


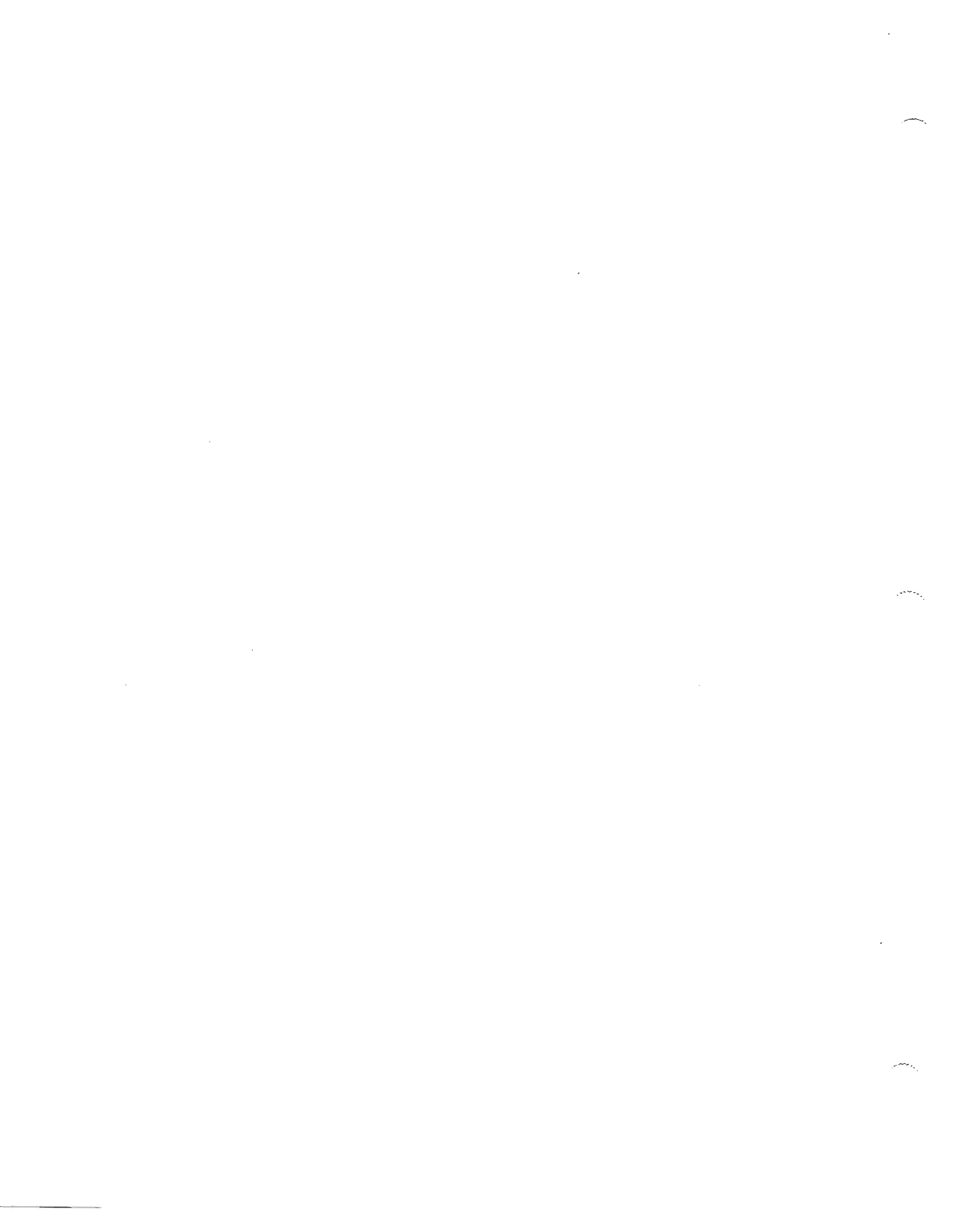
**CLEAR POWER ALARM**

ISSUE 3	OCT 1994
ALCL 363-203-502	TAP
PAGE 9 of 11	030

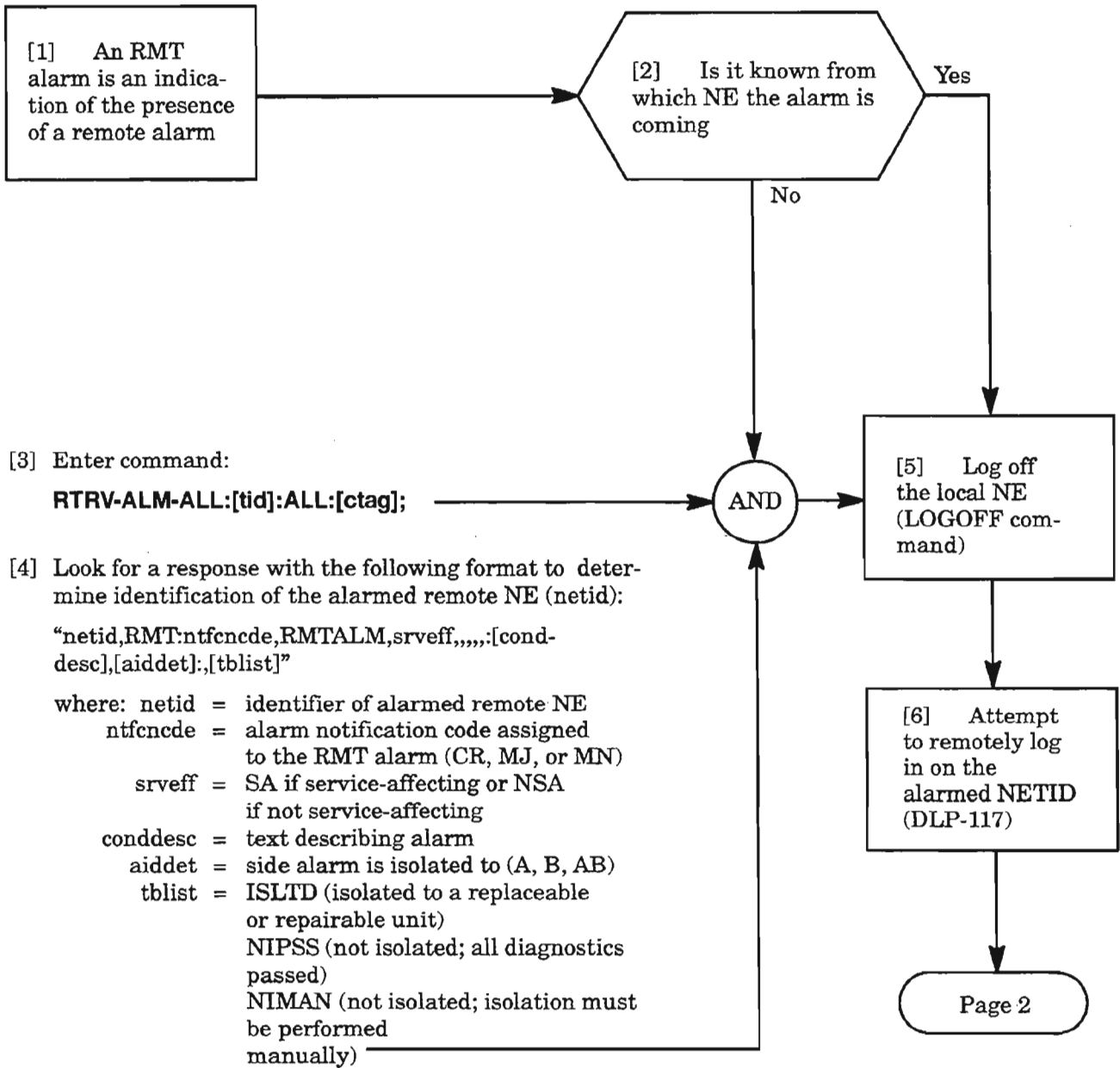


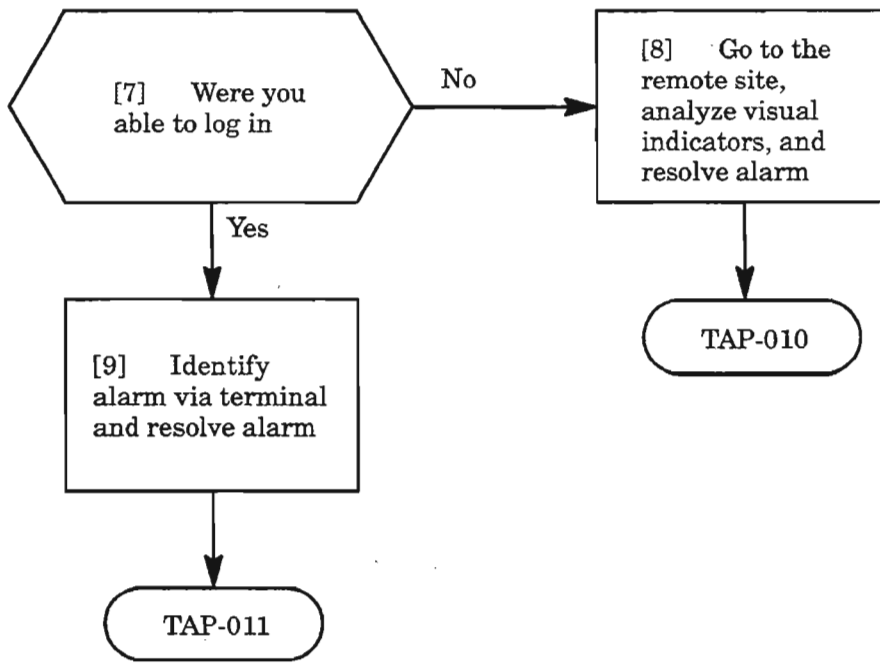
# MTCE











ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 2	031

**CLEAR RMT ALARM**

[1] Enter command:

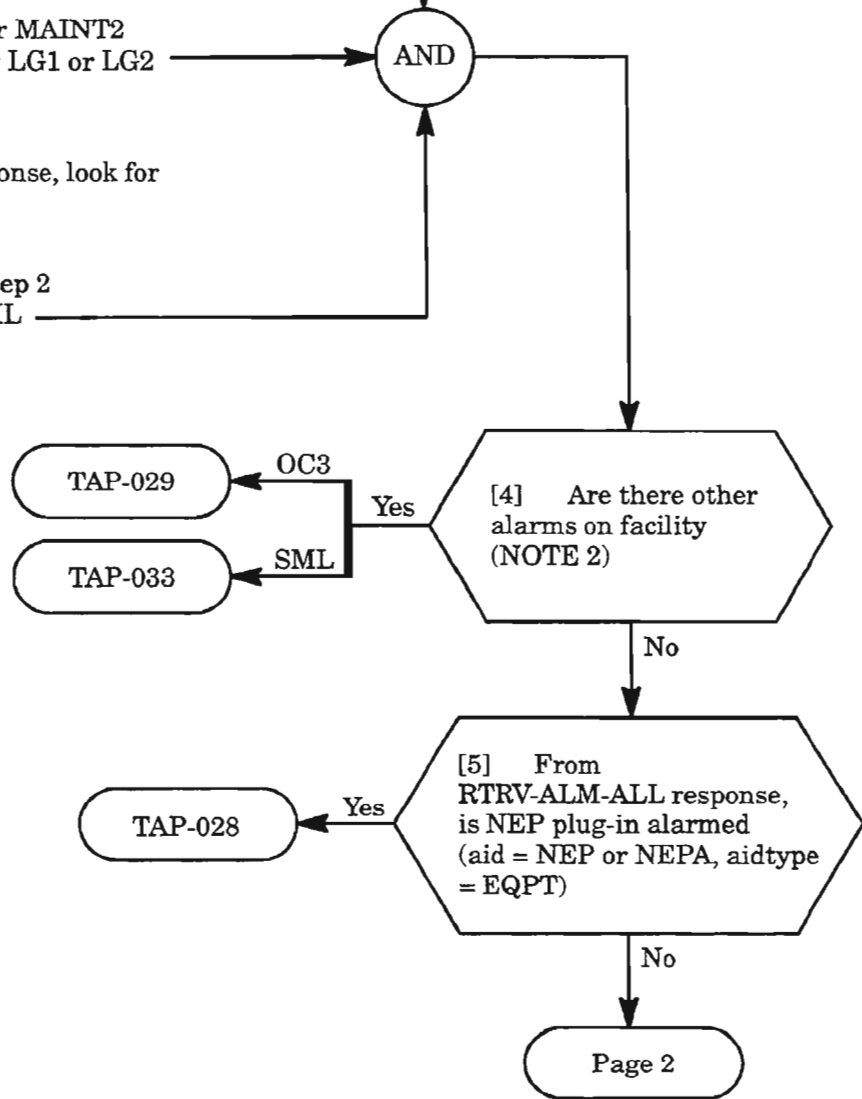
RTRV-ALM-ALL::ALL::;

[2] See NOTES 1 and 2. From the command response (which may be several lines), look for the following to determine the facility carrying the alarmed EOC:  
"aid,SDCC:ntfncde,EOC..."

where aid = MAINT1 or MAINT2 (future), or LG1 or LG2

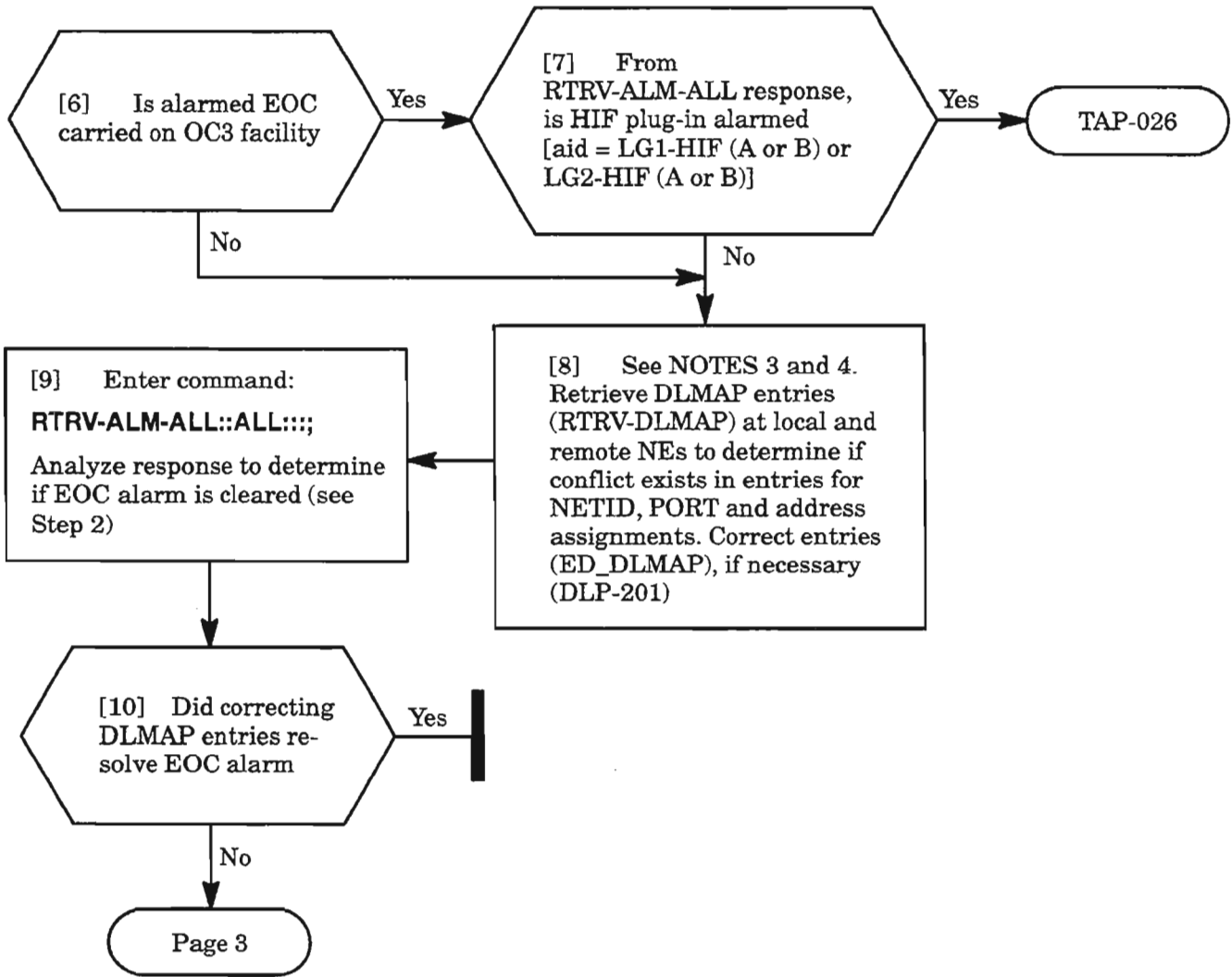
[3] Also from the command response, look for other alarms on the facility:  
"aid,aidtype:..."

where: aid = same as Step 2  
aidtype = OC3 or SML



**NOTES:** 1. The aid relative to SDCC in the command response is the facility carrying the alarmed EOC (Embedded Overhead Channel). LG1 and LG2 refer to the OC3 facilities for Line Group 1 and Line Group 2, respectively. MAINT1 and MAINT2 refer to the SML (Synchronous Maintenance Link) facilities available for intraoffice network between co-located NEs.

2. Other alarms on facility should be cleared first since they may affect EOC communications.



- NOTES:**
3. Conflict may exist in DLMAP entries at local NE that terminates alarmed EOC. A proper DLMAP entry at both NEs must be made for each to establish EOC communication and retire EOC alarm.
  4. If no EOC communication is available, remote login to the remote NE may not be possible. The craft may have to go to the remote side and log in to retrieve and modify the DLMAP entries.

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 3	032

**[11] CAUTION:** The following step describes replacement of the NEP plug-in, which may require downloading new software to the replacement unit as well as reprovisioning the NE. To minimize the chance of service interruption, follow the procedure in DLP-101 when referenced in the next step.

[12] Replace NEP plug-in at local NE (DLP-101); then check if alarm remains (Step 13). If alarm remains, replace NEP at remote NE

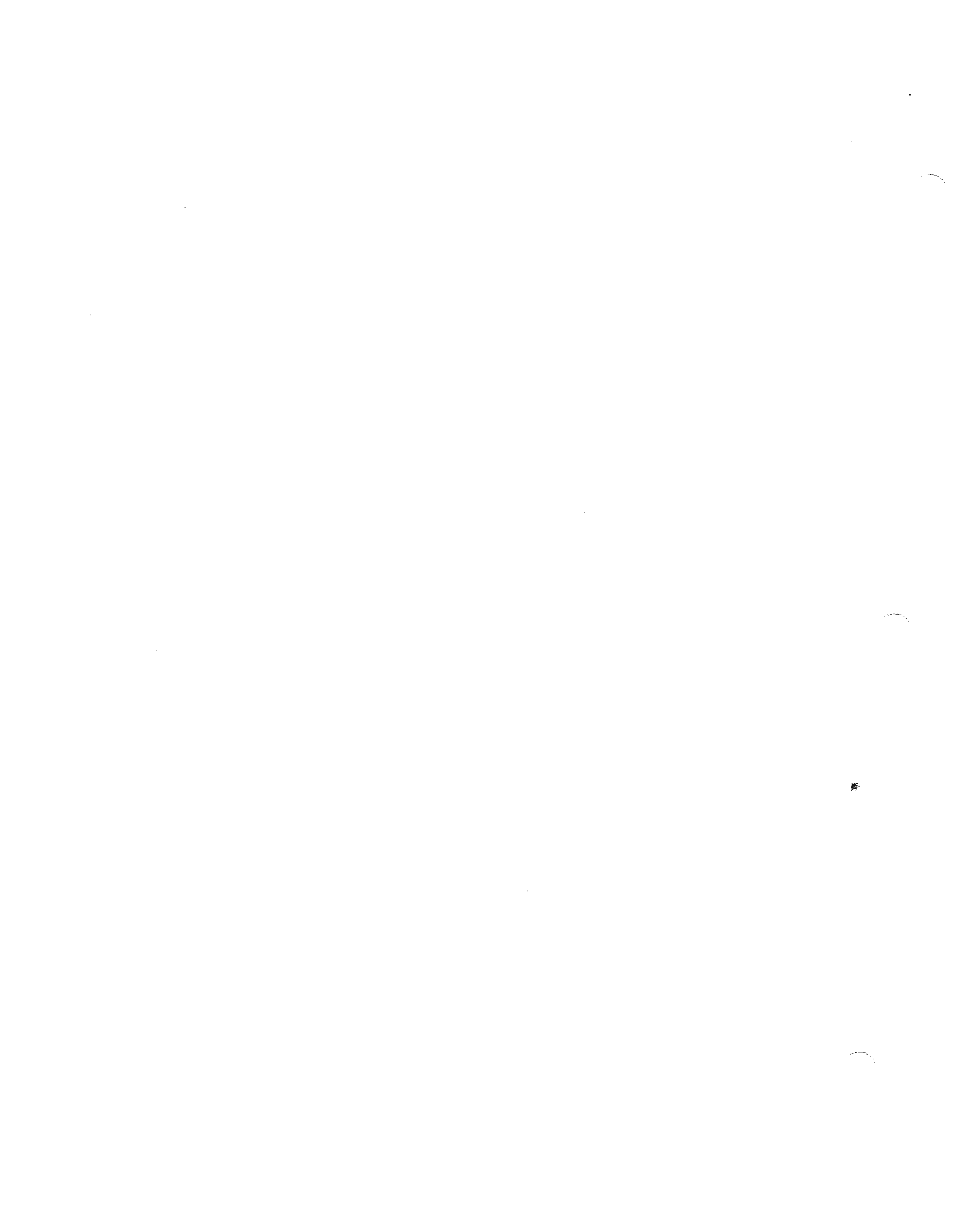
[13] Enter command:  
**RTRV-ALM-SDCC:[tid]:aid:[ctag]::;**  
where: aid = facility carrying alarmed EOC

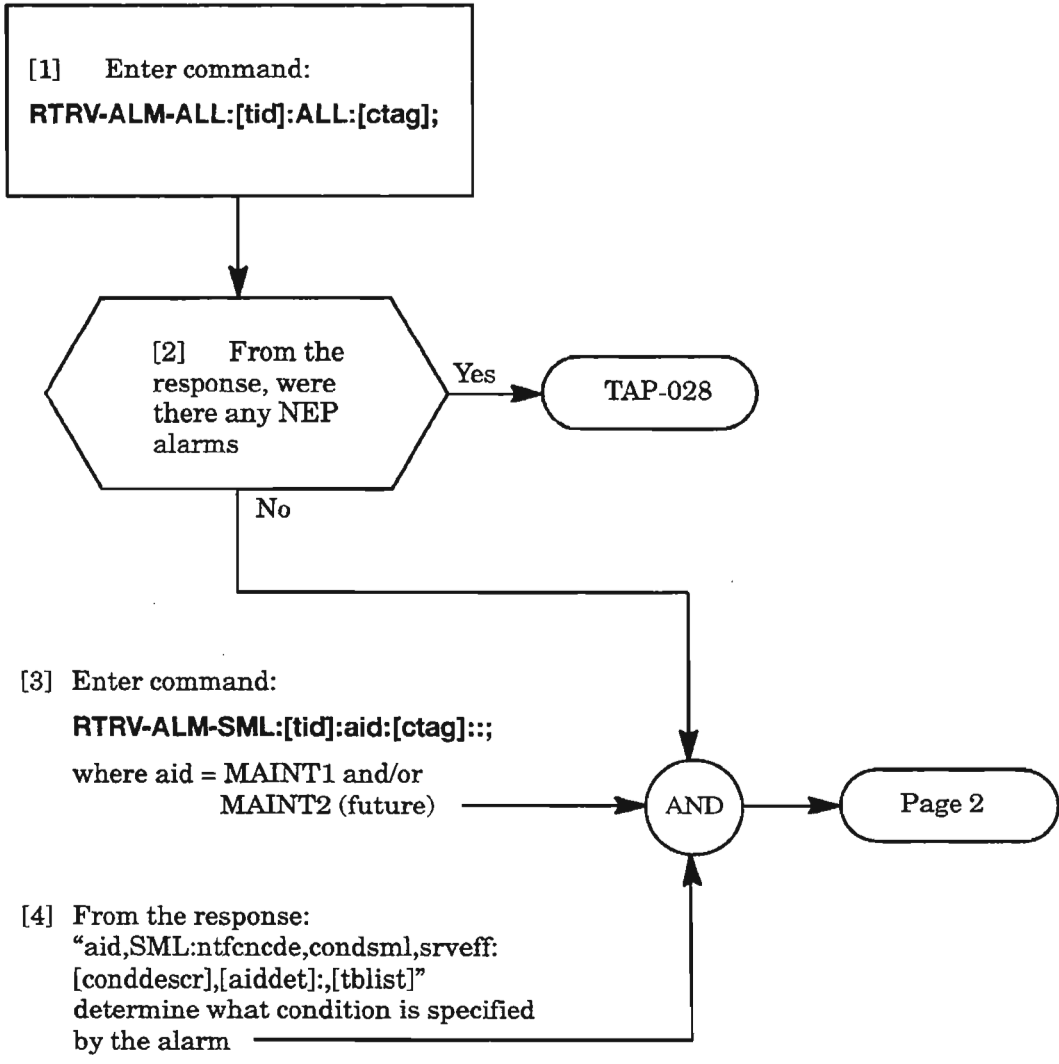
[14] Did EOC alarm clear

Yes

No

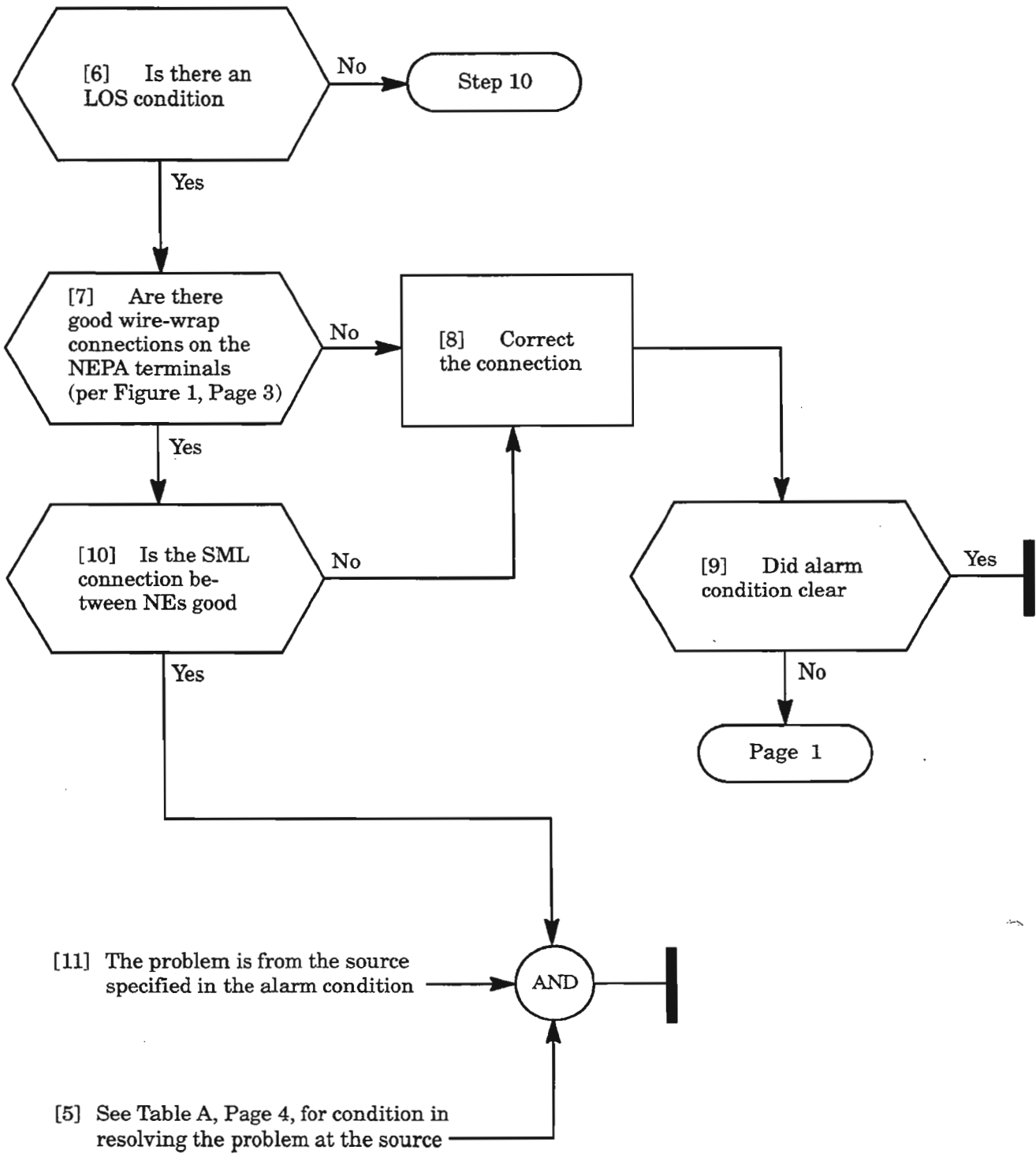
[15] All probable causes have been considered. Look for other (obscure) alarm conditions which indirectly may be causing this alarm (TAP-011) or call Customer Support (TNG-505)





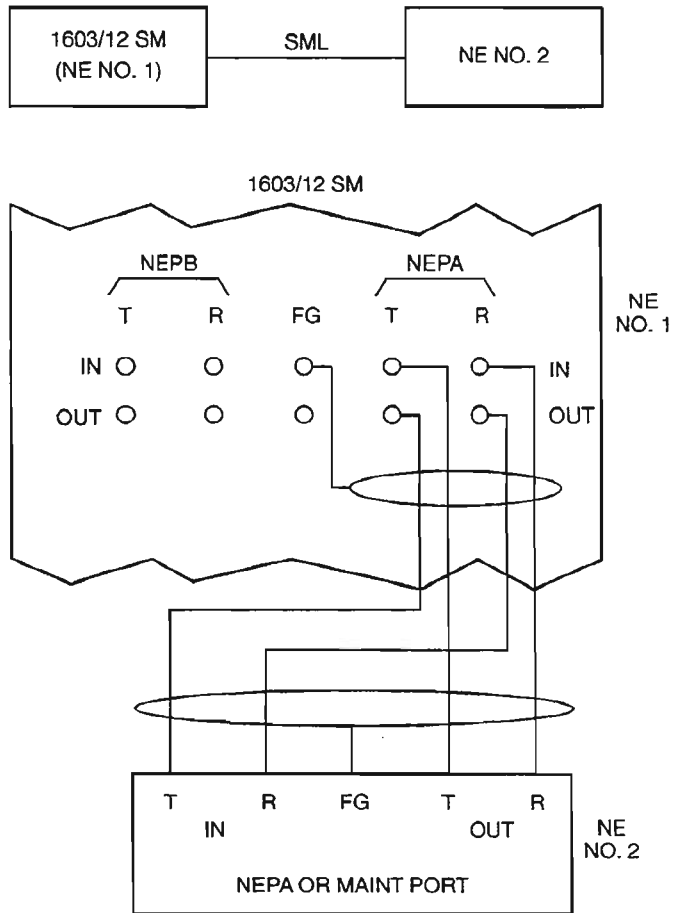
**CLEAR SML FACILITY ALARM**

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 1 of 4	033



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	033





A7427Rev1

Figure 1. SML Wiring Interface

CLEAR SML FACILITY ALARM

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 3 of 4	033

**Table A.**

<b>Conditon</b>	<b>Service-Affecting</b>	<b>Default Notification</b>	<b>Description</b>
AIS	NSA	NA	Alarm Indication Signal, all ones. A status condition that alerts downstream equipment that an alarm has occurred upstream
AISYEL	NSA	NA	Alarm Indication Signal –Yellow. A status condition that alerts upstream equipment that an AIS has been received in the downstream equipment
LOF	NSA	MN	Loss-Of-Frame – An excessive amount of out-of-frame occurrences took place on the incoming signal, verify source
LOS	NSA	MN	Loss-Of-Signal – A complete loss of signal, “all-zeros-pattern”, no physical layer, has been received; verify connection per Figure 1, Page 3, and down-line
MTCE	NSA	MN	Maintenance – Removed from service for maintenance
BER-HT	NSA	MN	Bit Error Ratio High Threshold – Signal has failed due to the ratio of the number of bits in error to the total number of bits transmitted during a measured period degrading the signal
YEL	NSA	NA	Yellow – Notification to the upstream that there is a downstream failure to initiate trunk conditioning on the failed circuit

[1] For STS path alarms, supporting equipment and facilities are suspected first. Perform Steps [2] through [6] at each NE in the network before proceeding to Page 2

[2] Enter command:  
**RTRV-ALM-ALL:[tid]:ALL:[ctag];**

[3] Are there any equipment alarms

Yes → TAP-021

No ↓

[4] Are there any OC3 facility alarms

Yes → TAP-029

No ↓

[5] Are there any EC1 facility alarms

Yes → TAP-022

No ↓

[6] Are there any T3 (DS3) facility alarms

Yes → TAP-043

No ↓

Page 2

[7] Enter command:

**RTRV-COND-STS1:[tid]:ALL:[ctag];**

[8] Analyze the response:

“aid,STS1:ntfncde,condsts,srveff,,,[locn],,  
[tmper]:[conddescr],[aidet]”

for aid, condsts, and locn (if provided)

where: aid = for line group STS1 paths:

**LGx-stsab-stspath**

x = 1 or 2

stsab = STS1A or STS1B

stspath = 1, 2, or 3

aid = for drop group STS1 paths:

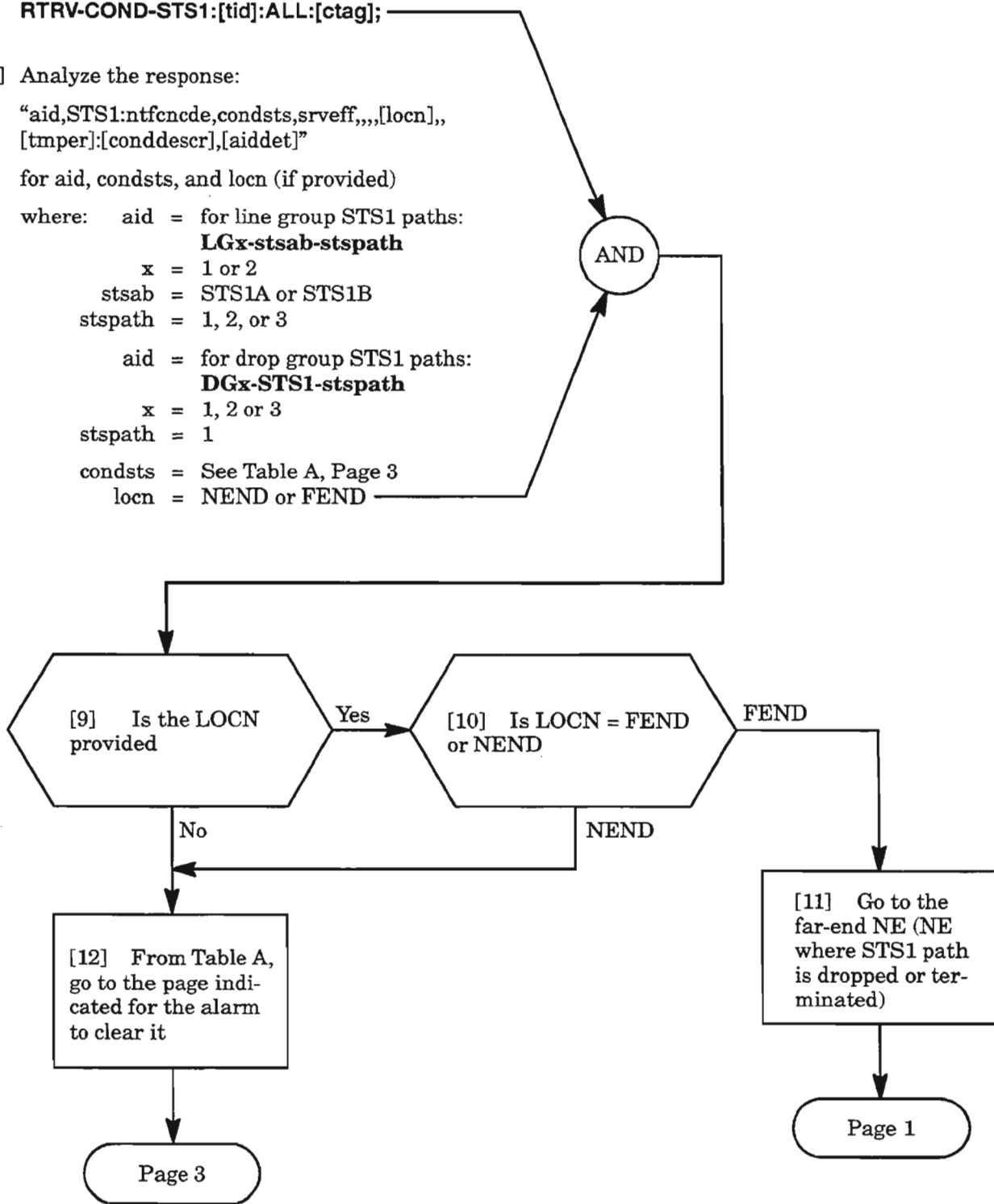
**DGx-STS1-stspath**

x = 1, 2 or 3

stspath = 1

condsts = See Table A, Page 3

locn = NEND or FEND



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 2 of 28	034

**Table A.**

<b>CONDSTS</b>	<b>DESCRIPTION</b>	<b>PAGE</b>
AISP	Path alarm indication signal detected	5
BERP-HT	Ring: path bit error ratio - high threshold exceeded	6
BERP-LT	Ring: path bit error ratio - low threshold exceeded	6
FRCDD	Ring: forced switch request	10
INHMPREPT	Inhibit all scheduled PM reports	11
LOP	STS1 loss of pointer	12
MAN	Ring: manual switch request	14
PATHSEL	Ring: path selector failure (both rings failed)	15
T-PJC	Threshold violation for PM STS pointer justification	16
If the STS1 path is terminated*, the following conditions will be monitored in addition to the above.		
LOMF	Loss of multiframe	22
PTHTRCMF	STS1 path tracer match failure	24
SLMF	STS1 signal label match failure	27
YELP	STS1 path yellow	28
T-CVP	Threshold violation for PM STS path Coding violations (near end or far-end)	16
T-ESP	Threshold violation for PM STS path error seconds (near end or far-end)	16
T-SESP	Threshold violation for PM STS path severely errored seconds (near end or far-end)	16
T-UASP	Threshold violation for PM STS path unavailable seconds (near end)	16
* The STS1 path is terminated if it interfaces a DS3 drop group port (LIF301) or is provisioned for VT payload (stsptype = VT).		

**Table A. (cont)**

<b>CONDSTS</b>	<b>DESCRIPTION</b>	<b>PAGE</b>
If STS SPE for the STS1 path is terminated, the following non-alarmed conditions are added.		
SIGLBLUEQ	Indicates "STS-SPE- Unequipped" code in STS path signal label C2 byte. The line connection is com- plete but there is no path originating equipment	NA
SIGLBLEQ-value	Indicates "STS-SPE- Equipped" code in C2 byte (value = 1...255)	NA
If STS1 path is in a drop group and is connected to a ring selector, the following non-alarmed conditions are added.		
PROTECTED-LG1	Protected path is Line Group 1	NA
PROTECTING-LG1	Protecting path is Line Group 1	NA
PROTECTED-LG2	Protected path is Line Group 2	NA
PROTECTING-LG2	Protecting path is Line Group 2	NA
PROTECTED-ACT	Protected path is active	NA
PROTECTING-ACT	Protecting path is active	NA
PROTECTED-STBY	Protected path is standby	NA
PROTECTING-STBY	Protecting path is standby	NA
PROTECTED-FAIL	Protected path fails	NA
PROTECTING-FAIL	Protecting path fails	NA
PROTECTED-FRCD	Forced switch requested on protected path	NA
PROTECTING-FRCD	Forced switch requested on protecting path	NA
PROTECTED-MAN	Manual switch requested on protected path	NA
PROTECTING-MAN	Manual switch requested on protecting path	NA

# AISP

- [13] An AISP indicates that an upstream failure has occurred; facility is removed or unassigned, or a network STS1 cross-connection is not in place (NOTE 1)

Perform the following steps at each NE in the network, starting with the nearest NE

- [14] Verify the cross-connection to the STS1 path is in place by entering command:

**RTRV-CRS-STS1:[tid]:aid:[ctag];**

where: aid = **LGx-STs1-stspath**

x = 1 or 2

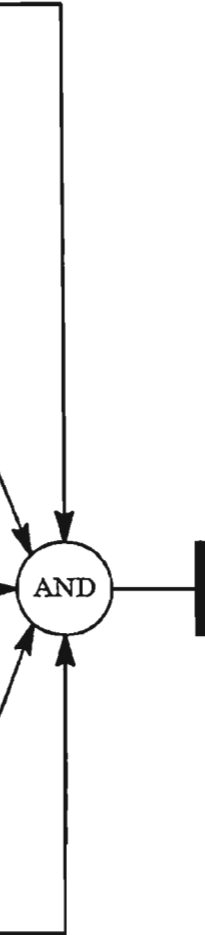
stspath = 1, 2, or 3

If cross-connection needs to be entered, refer to DLP-220

- [15] Verify facilities are entered into service (not OOS-MA-UAS). Enter facility into service, if necessary (DLP-214 for OC3, DLP-222 for EC1, DLP-224 for DS3)

- [16] Verify facilities are not in maintenance state (OOS-MT). If necessary, restore facility (DLP-214 for OC3, DLP-222 for EC1, DLP-224 for DS3)

- [17] Determine if there are any equipment and/or facility failures. Resolve alarms per TAP-011

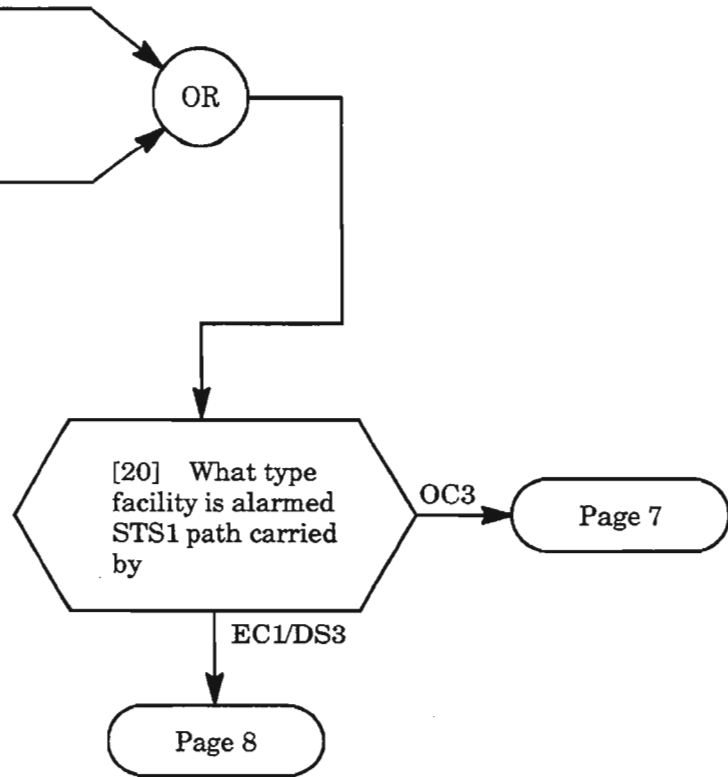


**NOTE: 1.** The AISP typically indicates) that an upstream NE has inserted AIS into the STS1 path to switch downstream cross-connect selectors away from a failure, unterminated path, or removed facility (pst = OOS-MT).

# BERP-HT, BERP-LT

[18] The STS1 path has a BERP-HT condition; the number of bits in error to the number of bits transmitted has degraded to the point of exceeding a set threshold,  $10^{-5}$  to  $10^{-9}$  (signal failure is imminent)

[19] The STS1 path has a BERP-LT condition, a bit error ratio exceeding a threshold setting between  $10^{-3}$  to  $10^{-4}$



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 28	034

**CLEAR STS1 PATH ALARM**



**BERP-HT, BERP-LT (cont)**

[21] **CAUTION:** Follow the replacement procedure in DLP-101 for the HIF to avoid loss of traffic.

[22] Replace the HIF per DLP-101 for the alarmed STS1 path

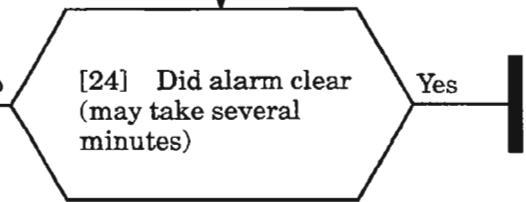
[23] Enter command:

**RTRV-COND-STS1:[tid]:aid:[ctag]::;**

where: aid = alarmed STS1 path

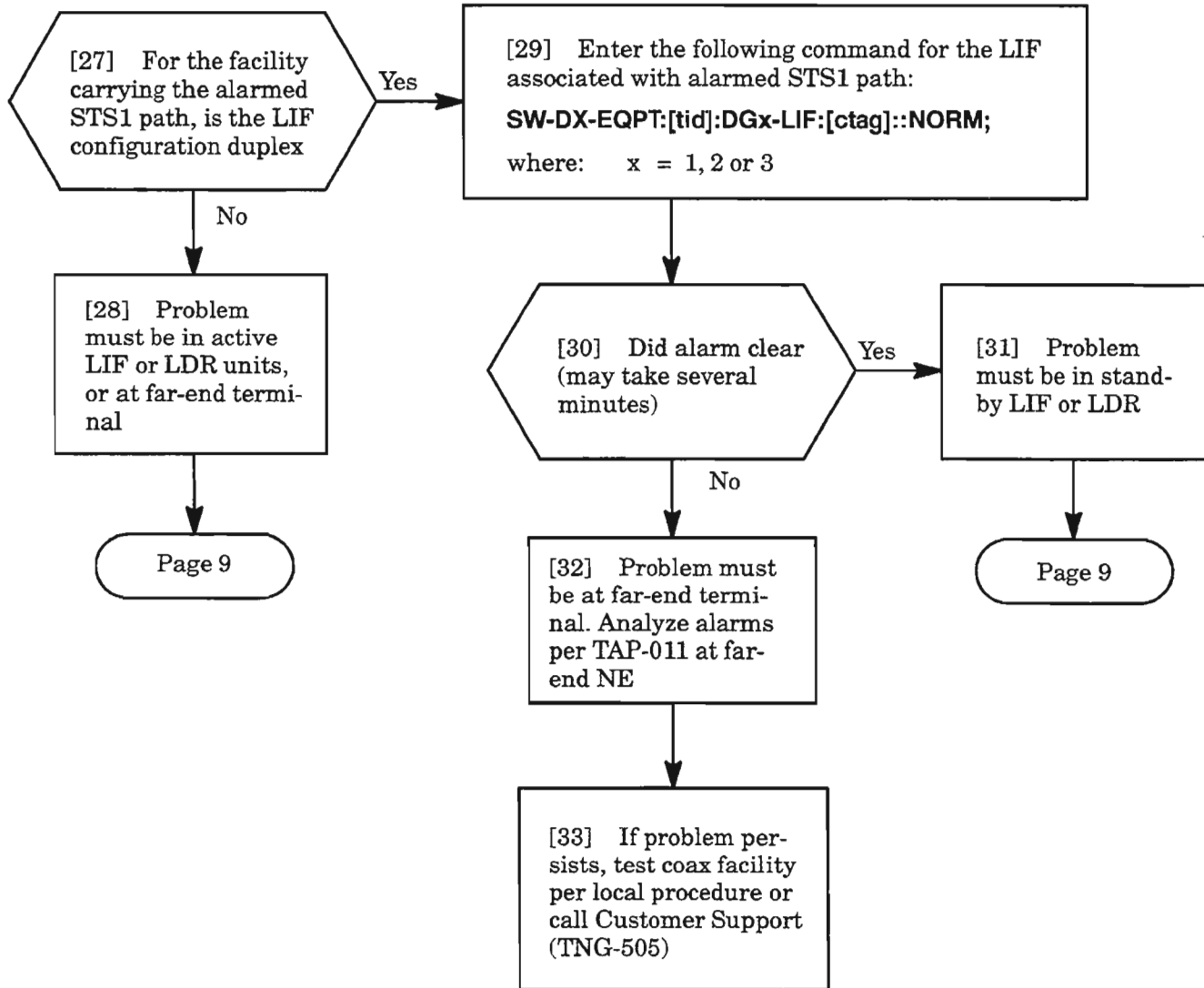
[25] Problem must be at far-end terminal. Analyze alarms per TAP-011 at far-end NE

[26] If problem persists, test fiber facility per local procedure or call Customer Support (TNG-505)

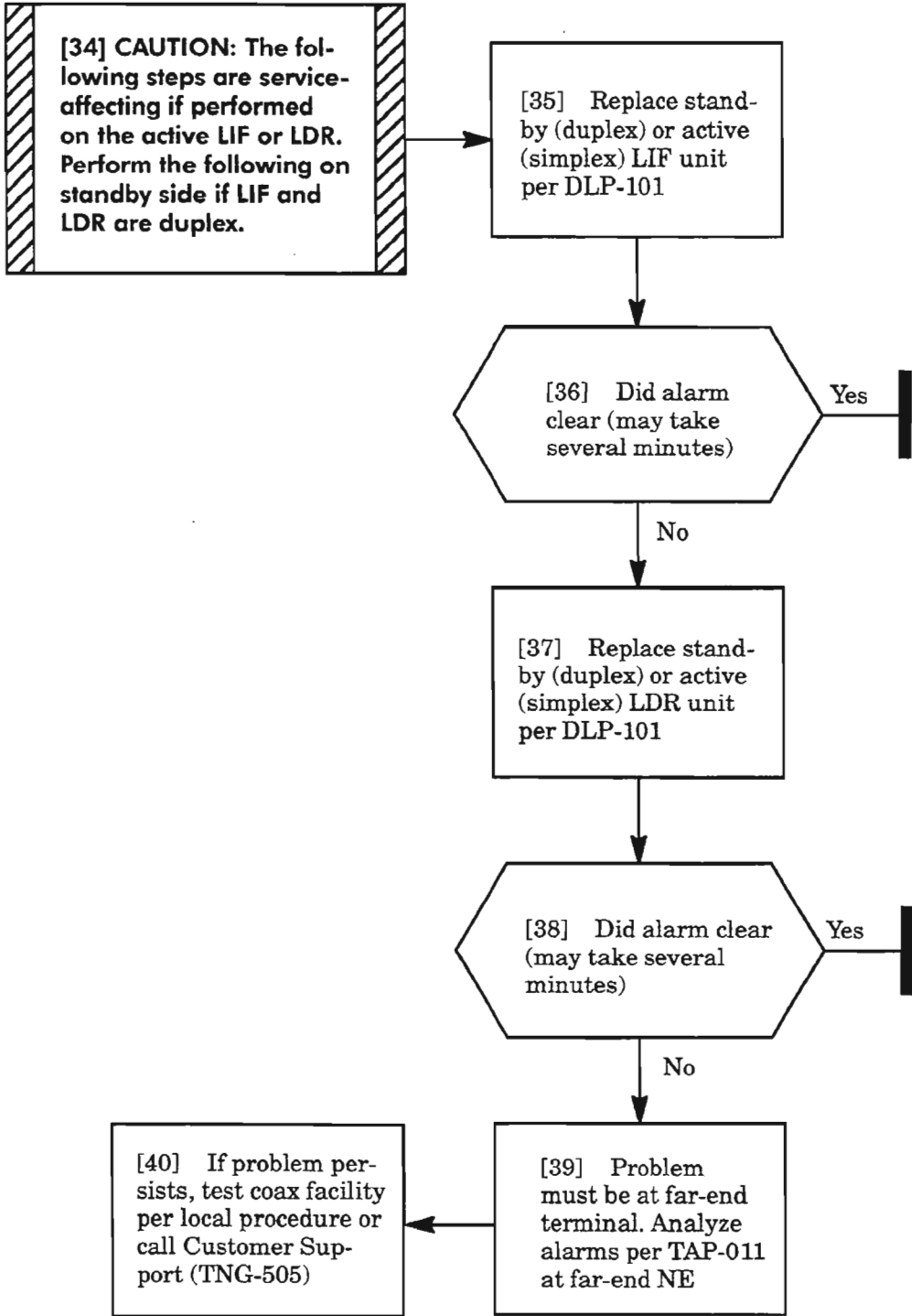


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 7 of 28	034

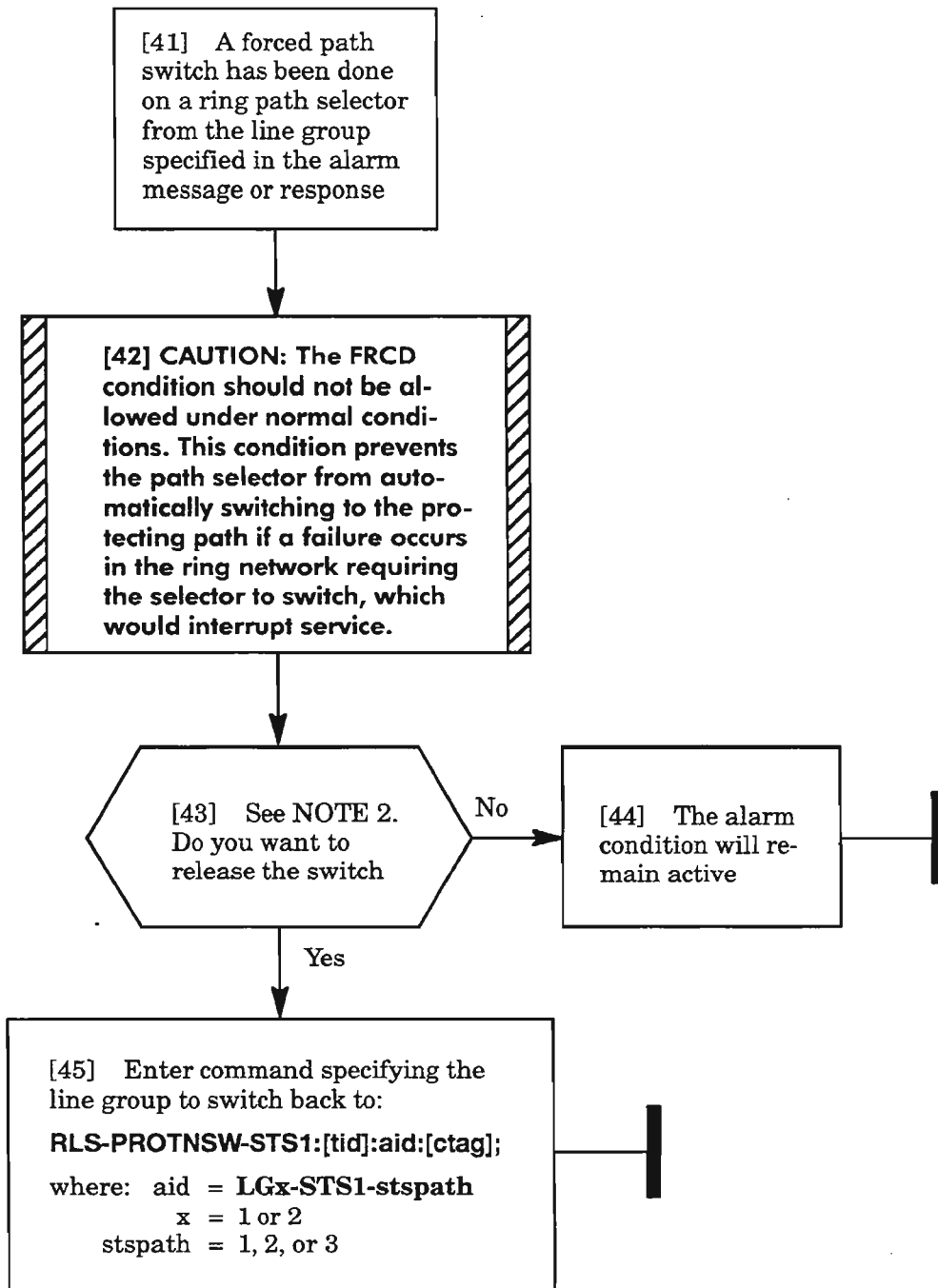
**BERP-HT, BERP-LT (cont)**



**BERP-HT, BERP-LT (cont)**



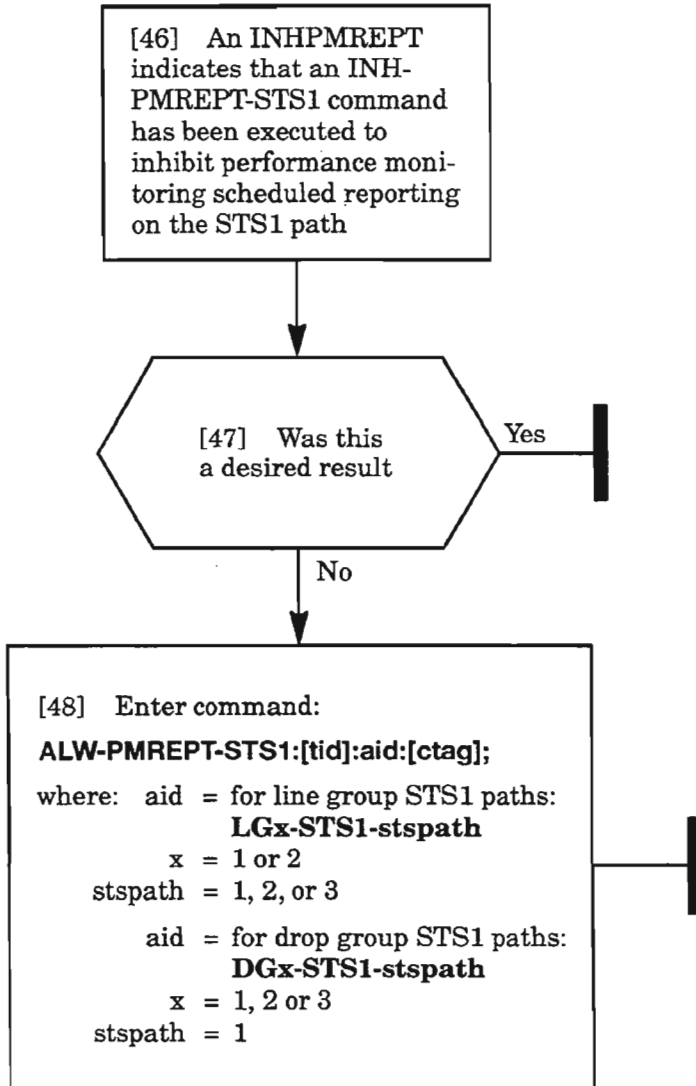
# FRCD



**NOTE: 2.** If revertive switching is not enabled (see *RTRV-FFP-STS1* command), the switch can be released and the selected path remains active.

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 28	034

# INHMPREPT



# LOP

[49] An LOP indicates that a valid pointer value cannot be obtained for the STS1 SPE (NOTE 3)

[50] Log in at the NE with the LOP alarm

[51] Enter the following command. If the response provides alarm data, resolve those alarms before continuing this procedure:

**RTRV-ALM-ALL:[tid]:ALL:[ctag];**

[52] Resolve any other facility, path, or equipment alarms before proceeding

[53] Enter command for the alarmed STS1 path:

**RTRV-STS1:[tid]:aid:[ctag];**

where: aid = for line group STS1 paths:

**LGx-STS1-stspath**

x = 1 or 2

stspath = 1, 2, or 3

aid = for drop group STS1 paths:

**DGx-STS1-stspath**

x = 1, 2 or 3

stspath = 1

[54] Analyze the response:

**"aid:[ststype]:sts\_nblk]:pst,[sst],[ast]"**

where: aid = alarmed STS1 path

ststype = STS or VT

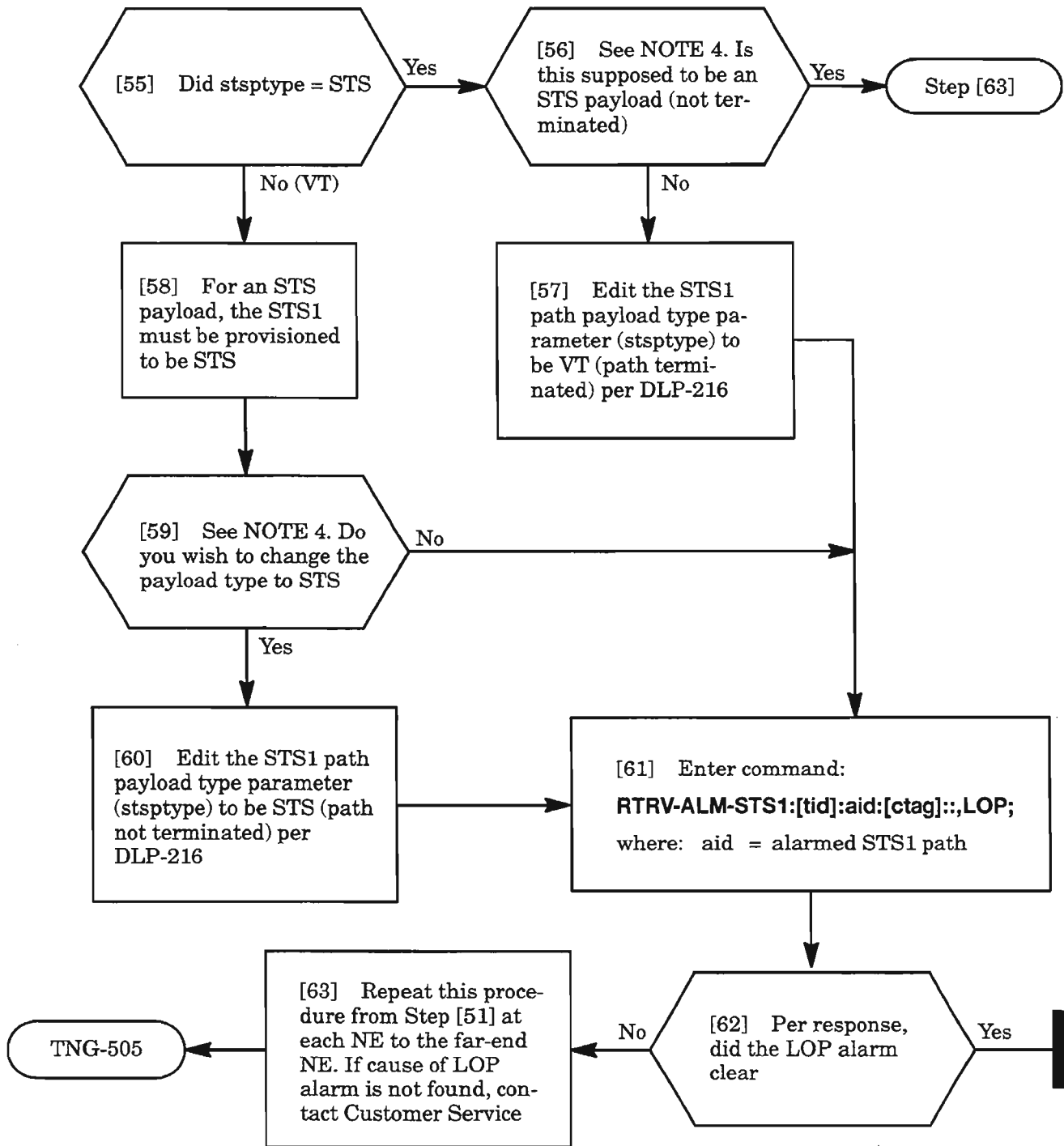
AND

Page 13

**NOTE: 3.** Verify that there are no equipment alarms in the STS1 path throughout the network before proceeding.

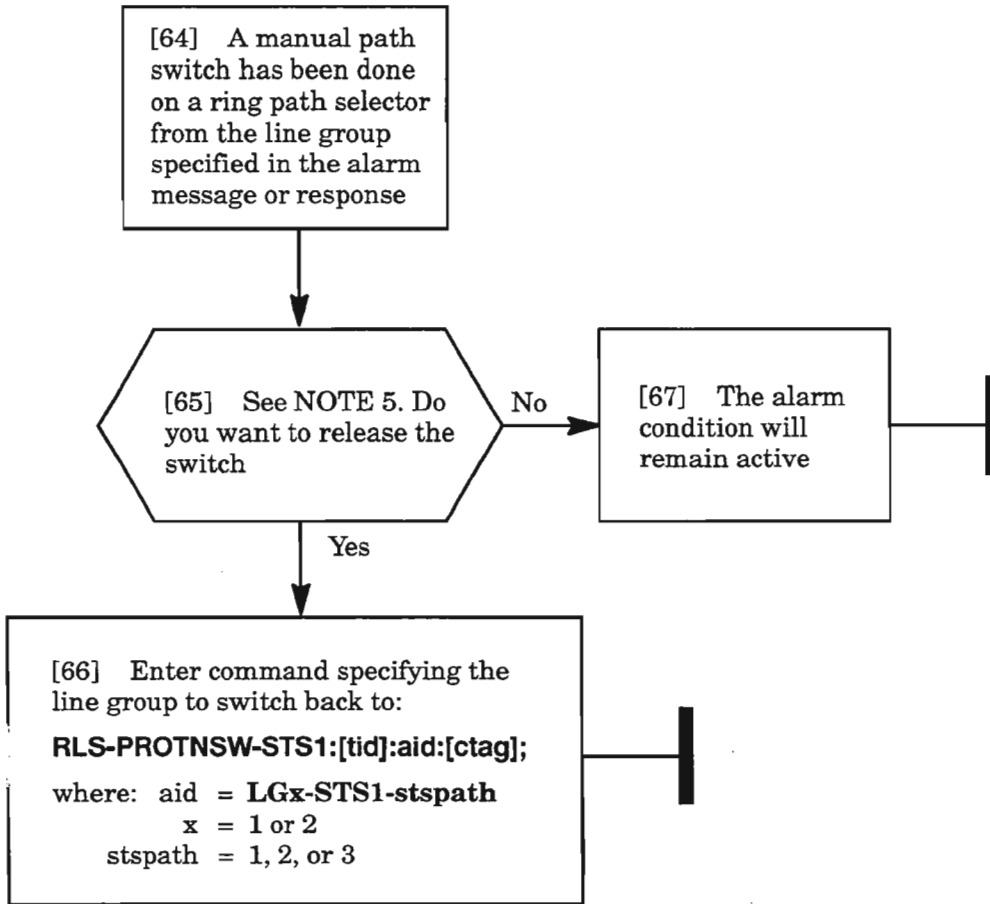
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 28	034

**LOP (cont)**



**NOTE: 4.** The LOP alarm can occur if STS1 paths are cross-connected and do not have the same payload type. This could happen with the VSCC20X fixed-path cross-connects (the VSCC101 will not allow you enter a cross-connection between STS1 paths with different payload types).

# MAN



**NOTE: 5.** The MAN condition is the lowest priority level and will not affect service if left active (alarm will remain, however). If revertive switching is not enabled (see RTRV-FFP-STS1 command), the switch can be released and the selected path remains active.

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 14 of 28	034



# PATHSEL

[68] A PATHSEL indicates that problems on both rings caused the ring path selector to fail. Causes are: an upstream failure has occurred; facility is removed or unassigned, network STS1 cross-connections in both paths are not in place

Perform the following steps **at each NE in the network**, starting with the nearest NE

[69] Determine if there are any equipment and/or facility failures. Resolve alarms per TAP-011

[70] Verify facilities are entered into service (not OOS-MA-UAS). Enter facility into service, if necessary (DLP-214 for OC3, DLP-222 for EC1, DLP-224 DS3)

[71] Verify facilities are not in maintenance state (OOS-MT). If necessary, restore facility (DLP-214 for OC3, DLP-222 for EC1, DLP-224 DS3)

[72] Verify the cross-connection to the STS1 path is in place by entering command:

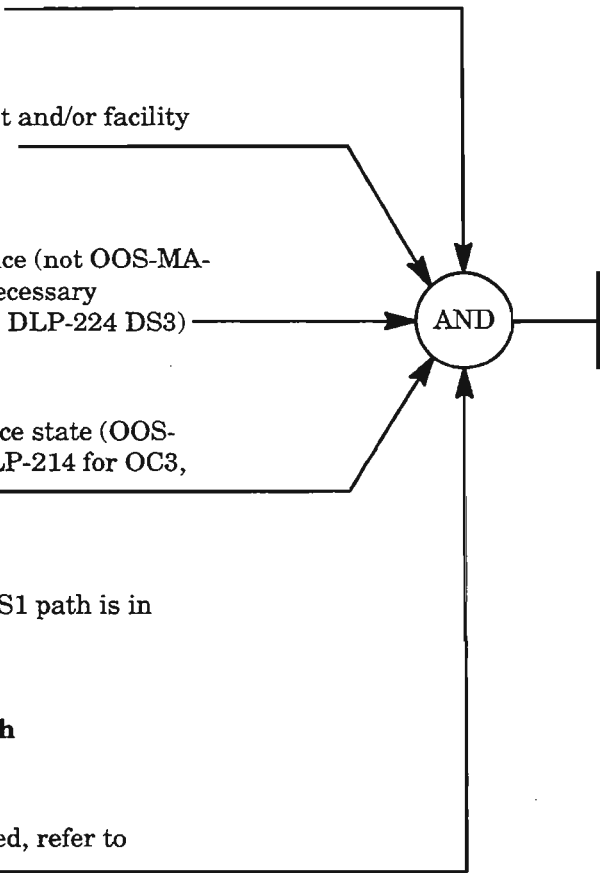
**RTRV-CRS-STS1:[tid]:aid:[ctag];**

where: aid = **LGx-STs1-stspath**

x = 1 or 2

stspath = 1, 2, or 3

If cross-connection needs to be entered, refer to DLP-220



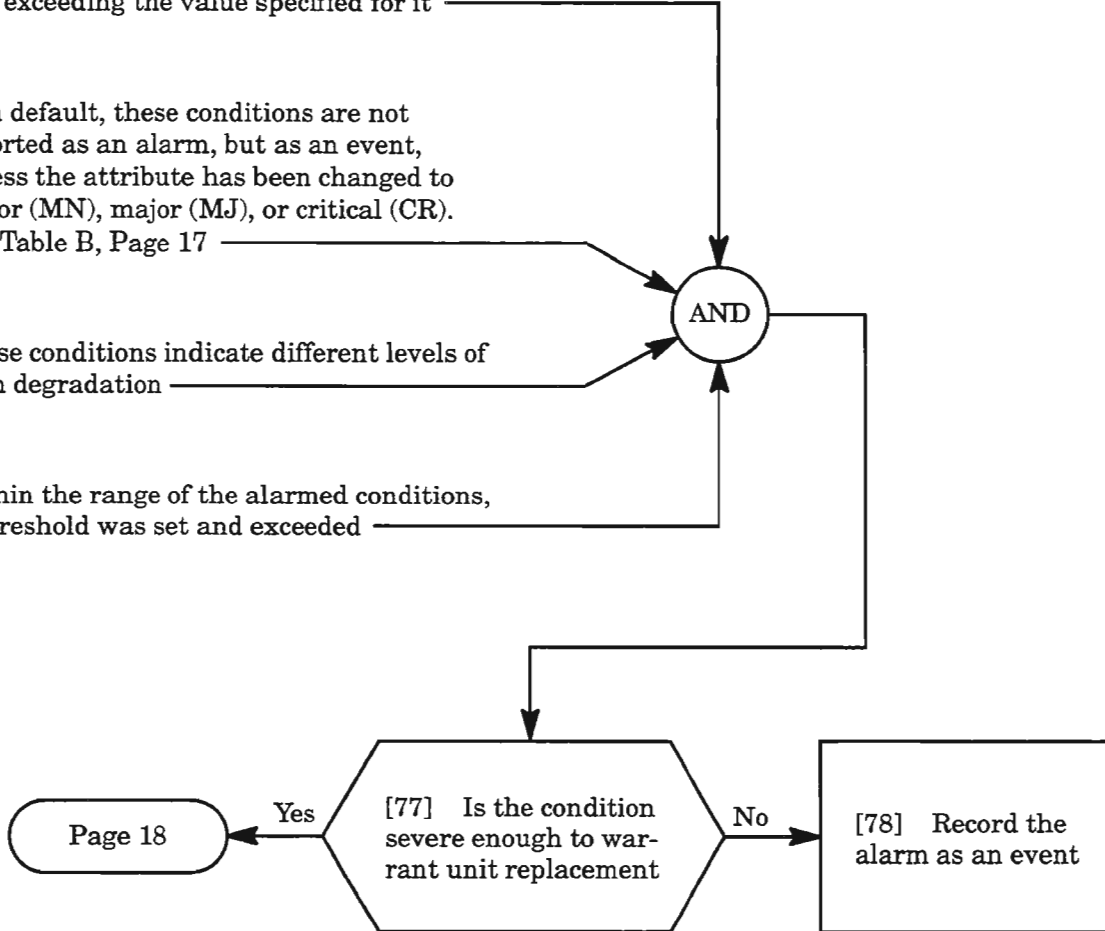
**T-XXX**

[73] A threshold crossover alert has been generated due to one of the performance parameters exceeding the value specified for it

[74] As a default, these conditions are not reported as an alarm, but as an event, unless the attribute has been changed to minor (MN), major (MJ), or critical (CR). See Table B, Page 17

[75] These conditions indicate different levels of path degradation

[76] Within the range of the alarmed conditions, a threshold was set and exceeded



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 16 of 28	034

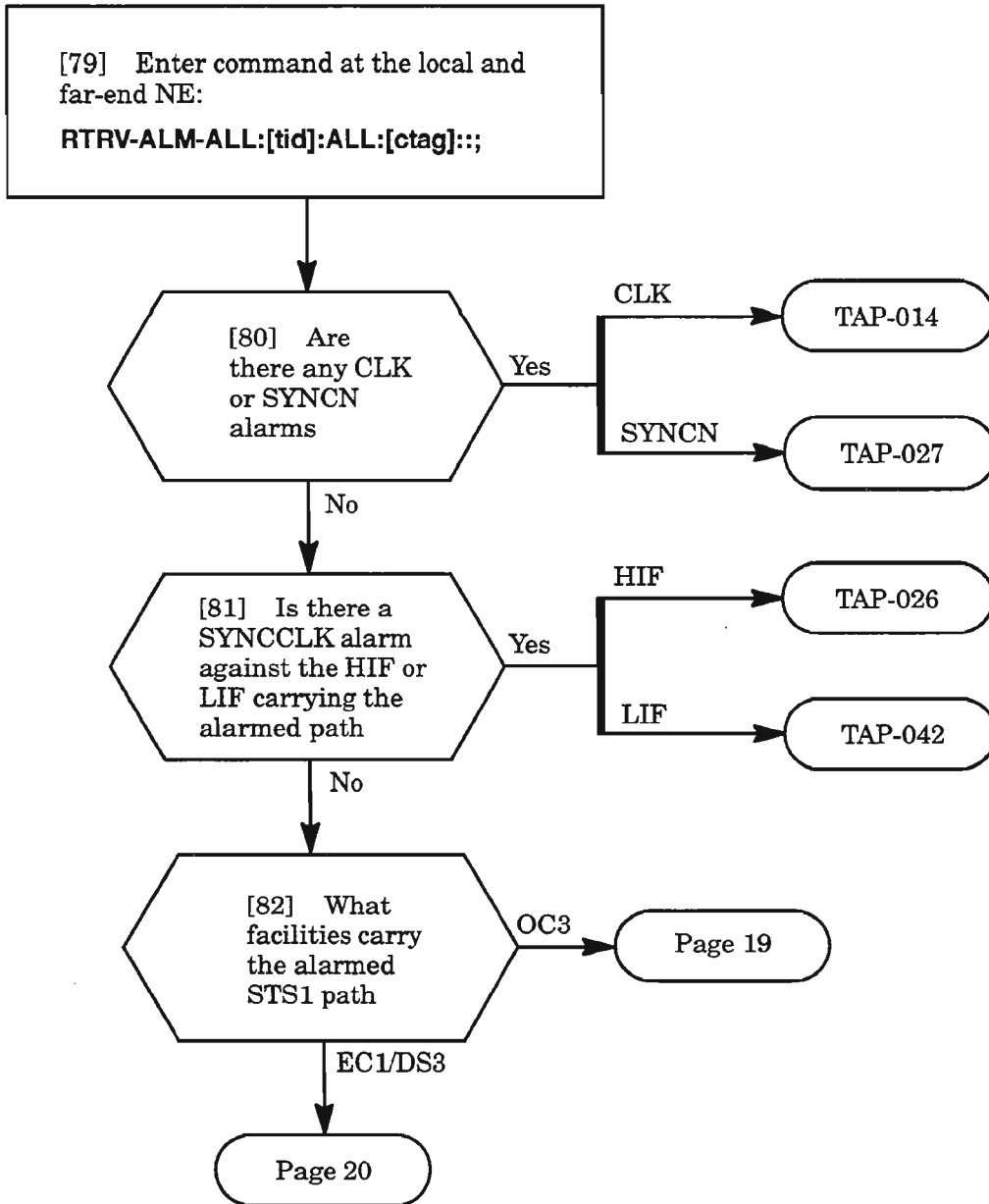
**Table B. Threshold Table – STS-1**

MONITOR TYPE	DEFAULT		RANGE	DESCRIPTION
	15-MIN	1-DAY		
BERP-HT	4	4	3...4	Bit Error Ratio Path – high threshold (SFBER)
BERP-LT	7	7	5...9	Bit Error Ratio Path – low threshold (DGBER)
CVP	433	4330	1...4,294,967,295	STS Path Coding violations errors (near end or far end)
ESP	87	864	1...65535	STS Path Errored Seconds (near end or far end)
PJC	433	4330	1...4,294,967,295	STS Pointer Justification Counter
SESP	1	4	1...65535	STS Path Severely Errored Seconds (near end or far end)
UASP	3	10	1...65535	STS Path Unavailable Seconds (near end)
DSESP	2400	2400	1...65535	Number of coding violations to make one SESP (one threshold used by both near end or far end counts)

**CLEAR STS1 PATH ALARM**

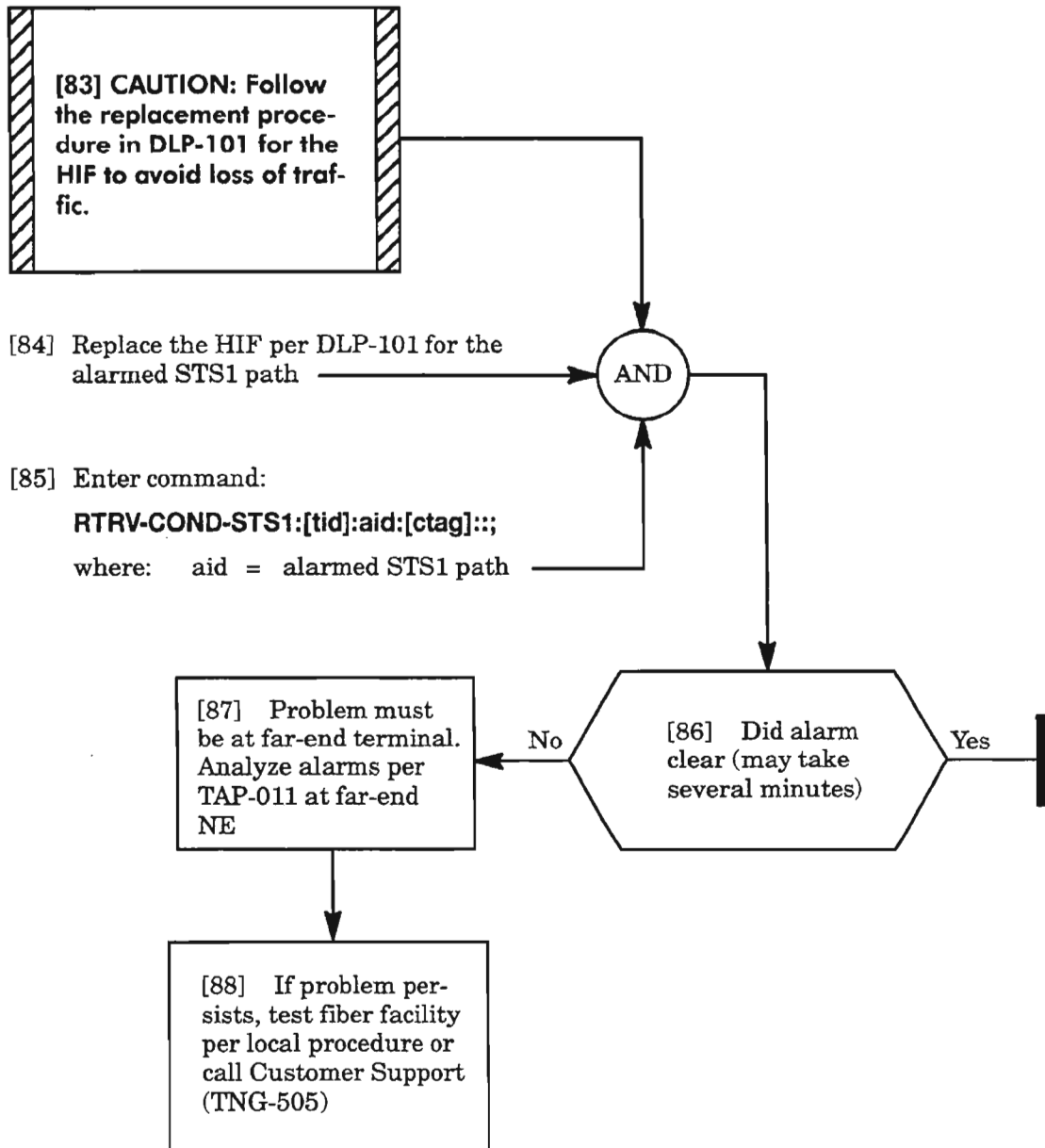
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 17 of 28	034

**T-XXX (cont)**

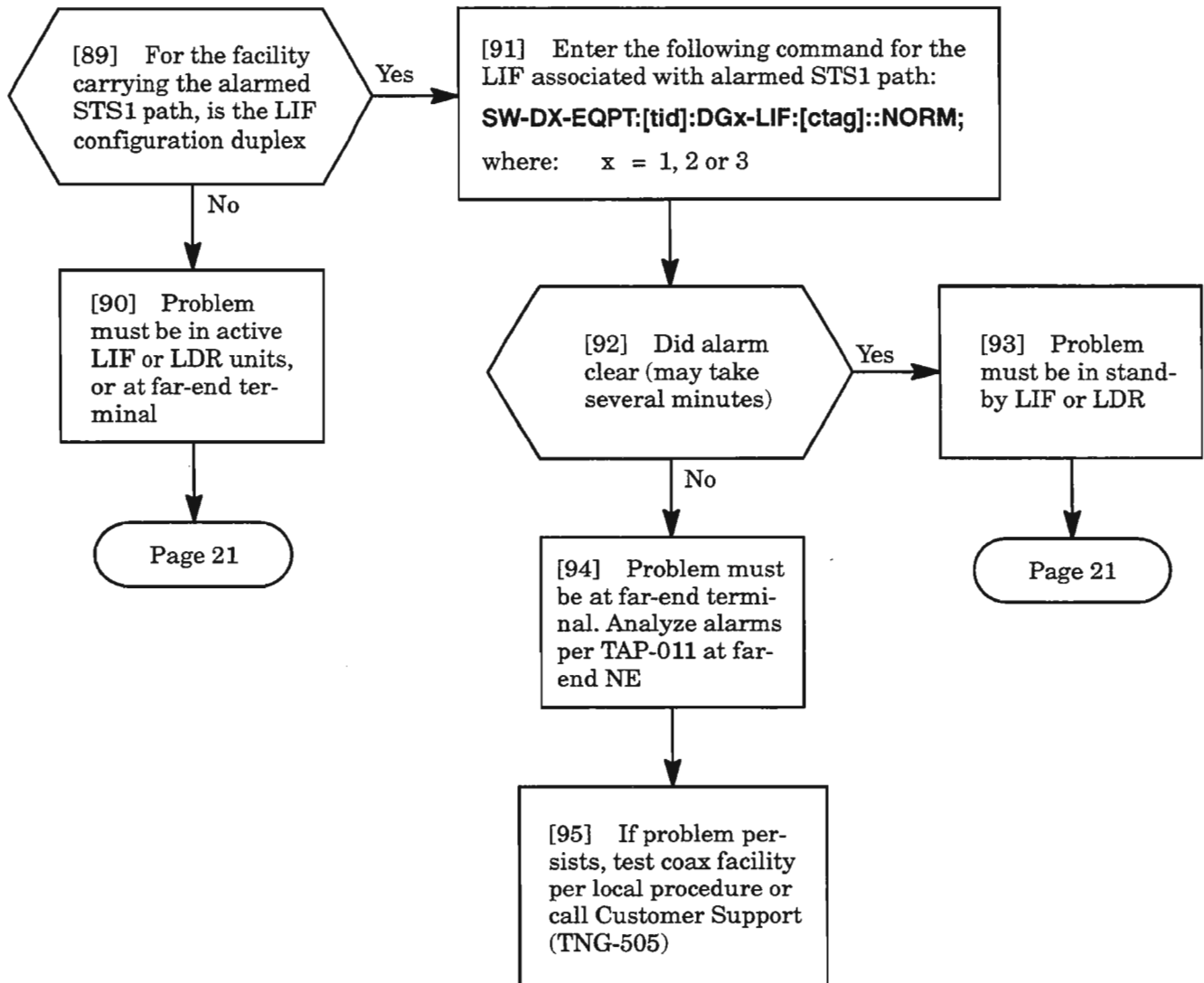


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 18 of 28	034

**T-XXX (cont)**



**T-XXX (cont)**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 20 of 28	034

**T-XXX (cont)**

**[96] CAUTION:** The following steps are service-affecting if performed on the active LIF or LDR. Perform the following on standby side if LIF and LDR are duplex.

[97] Replace standby (duplex) or active (simplex) LIF unit per DLP-101

[98] Did alarm clear (may take several minutes)

[99] Replace standby (duplex) or active (simplex) LDR unit per DLP-101

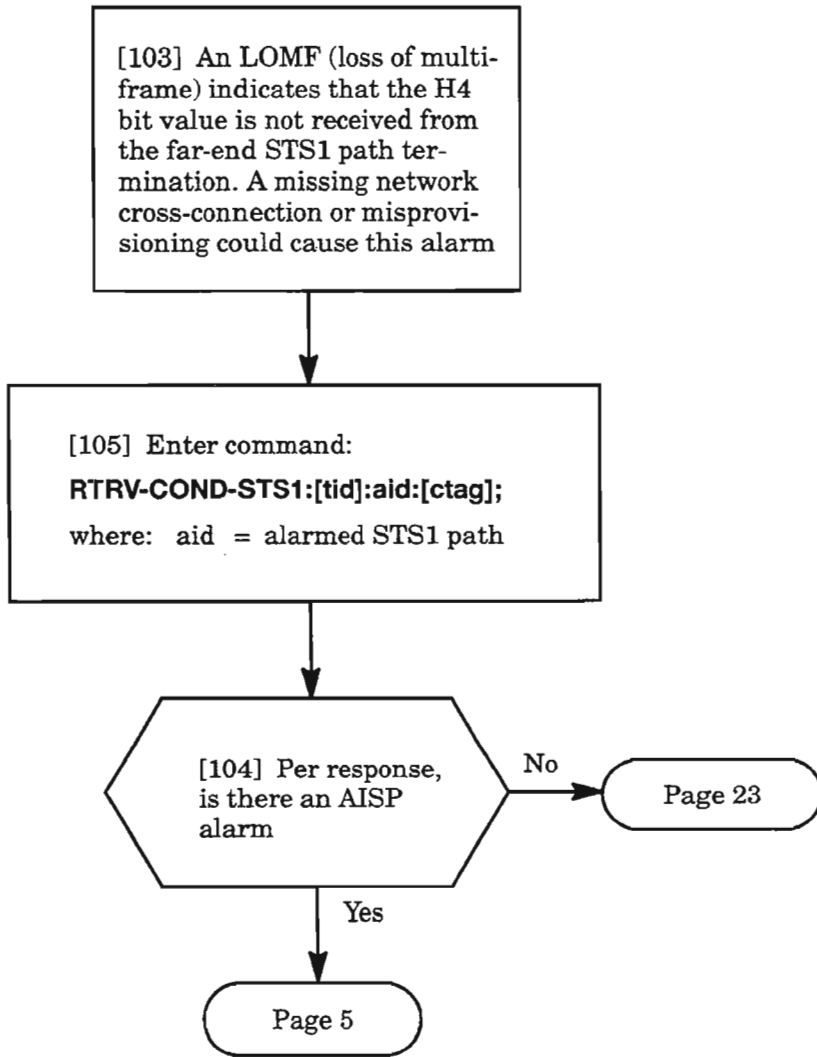
[100] Did alarm clear (may take several minutes)

[102] If problem persists, test coax facility per local procedure or call Customer Support (TNG-505)

[101] Problem must be at far-end terminal. Analyze alarms per TAP-011 at far-end NE

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 21 of 28	034

# LOMF



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 22 of 28	034



## LOMF (cont)

[106] At the far-end NE that is supposed to terminate the STS path, enter the command for associated STS1 path:

**RTRV-STIS1:[tid]:aid:[ctag];**

where: aid = **DGx-STIS1-stspath**

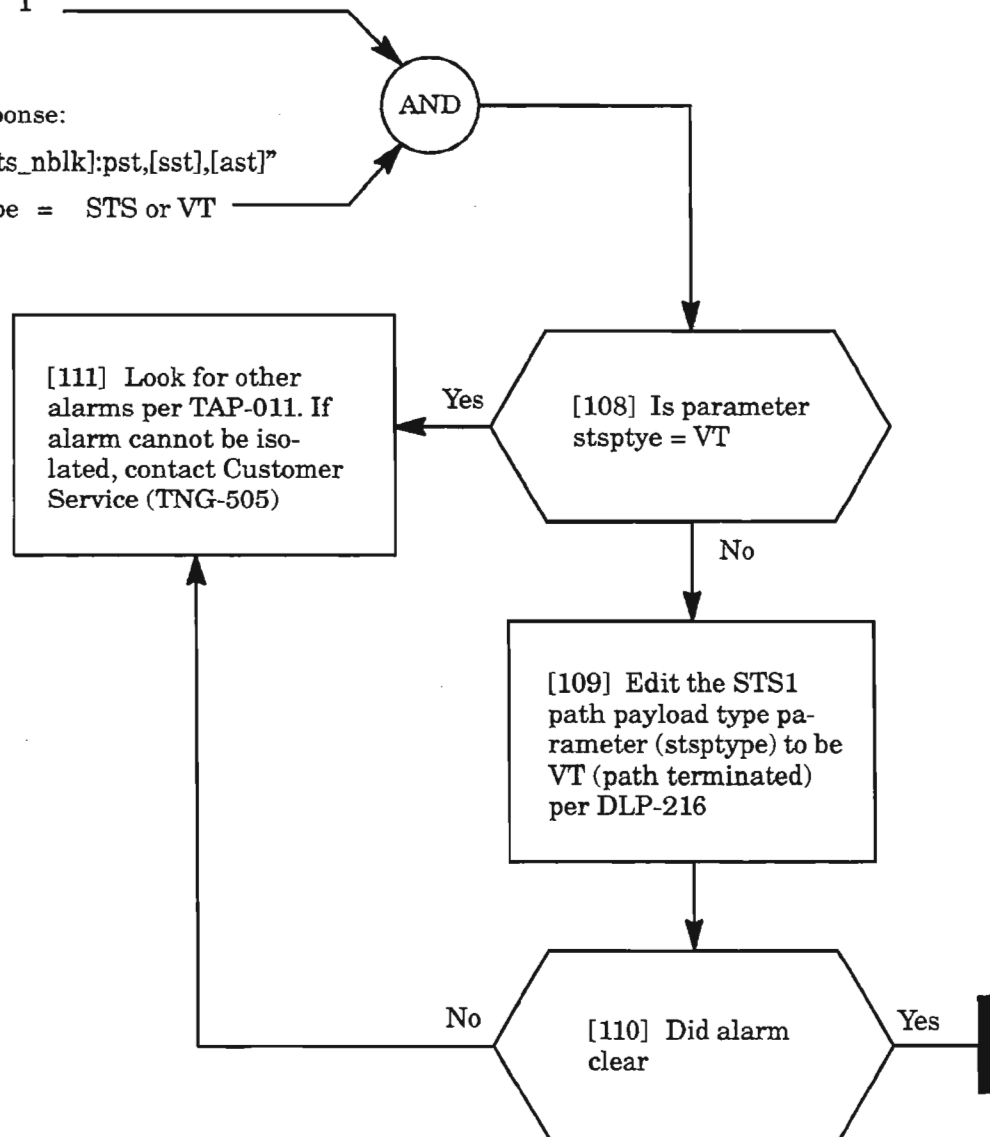
x = 1, 2 or 3

stspath = 1

[107] Analyze the response:

"aid:[stsptype]:sts\_nblk:pst,[sst],[ast]"

where: stsptype = STS or VT



# PTHTRCMF

[112] A PTHTRCMF indicates that expected STS1 path tracer and the incoming path tracer are different. This indicates that the path tracer is misprovisioned at either end of the path or the intended STS1 traffic is not being received

[113] Retrieve incoming path tracer by entering command:

**RTRV-PTHTRC-STTS1:[tid]:aid:[ctag]::INCTRC;**

where: aid = for line group STS1 path

**LGx-STTS1-stspath**

x = 1 or 2

stspath = 1, 2, or 3

aid = for drop group STS1 path:

**DGx-STTS1-stspath**

x = 1, 2 or 3

stspath = 1

[114] Retrieve (provisioned) expected path tracer by entering the command:

**RTRV-STTS1:[tid]:aid:[ctag];**

where: aid = for line group STS1 path:

**LGx-STTS1-stspath**

x = 1 or 2

stspath = 1, 2, or 3

aid = for drop group STS1 path:

**DGx-STTS1-stspath**

x = 1, 2 or 3

stspath = 1

[115] From the response, compare the EXPTRC string (Step [114]) with the actual incoming string in Step [113]. Determine if provisioned path tracer (EXPTRC) is wrong or incoming path tracer is wrong

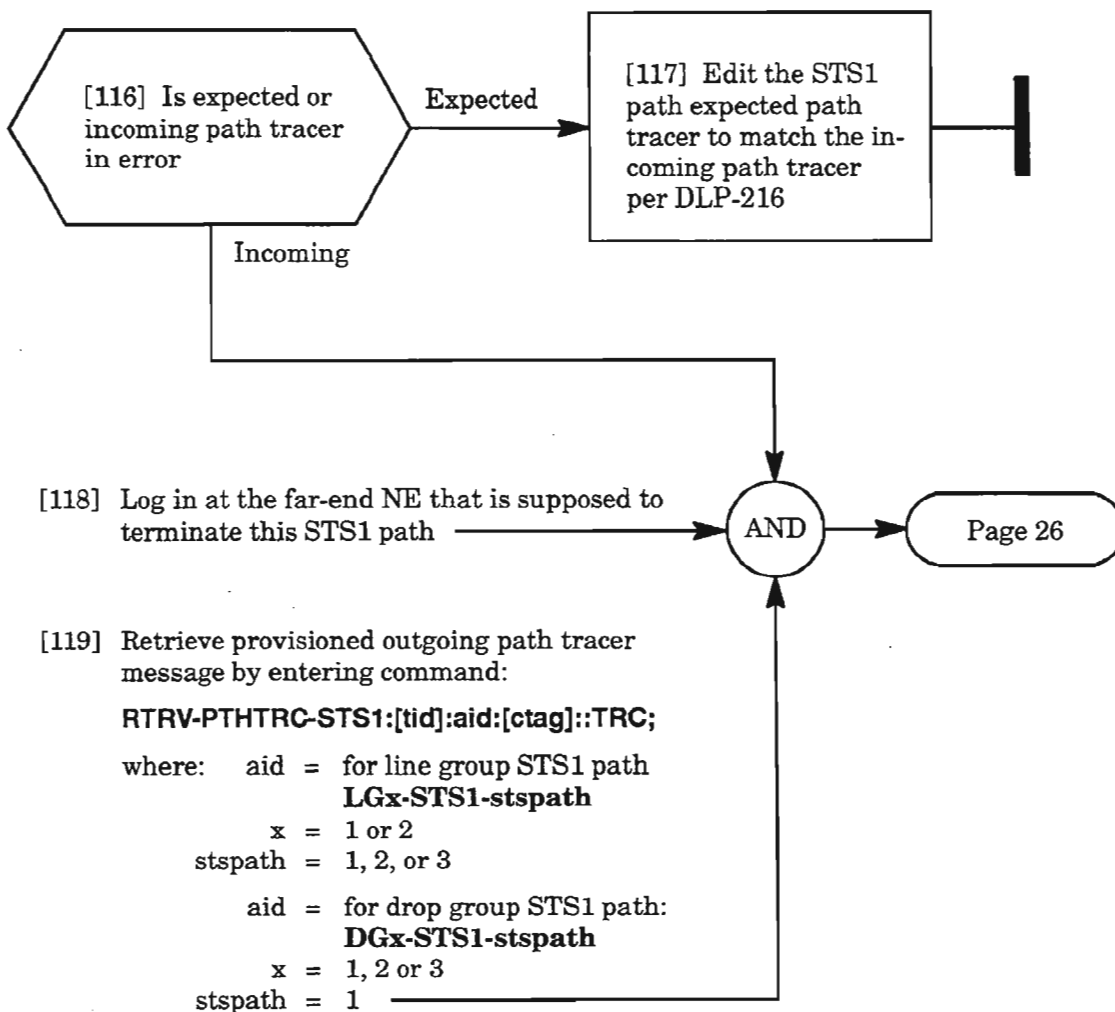
AND

Page 25

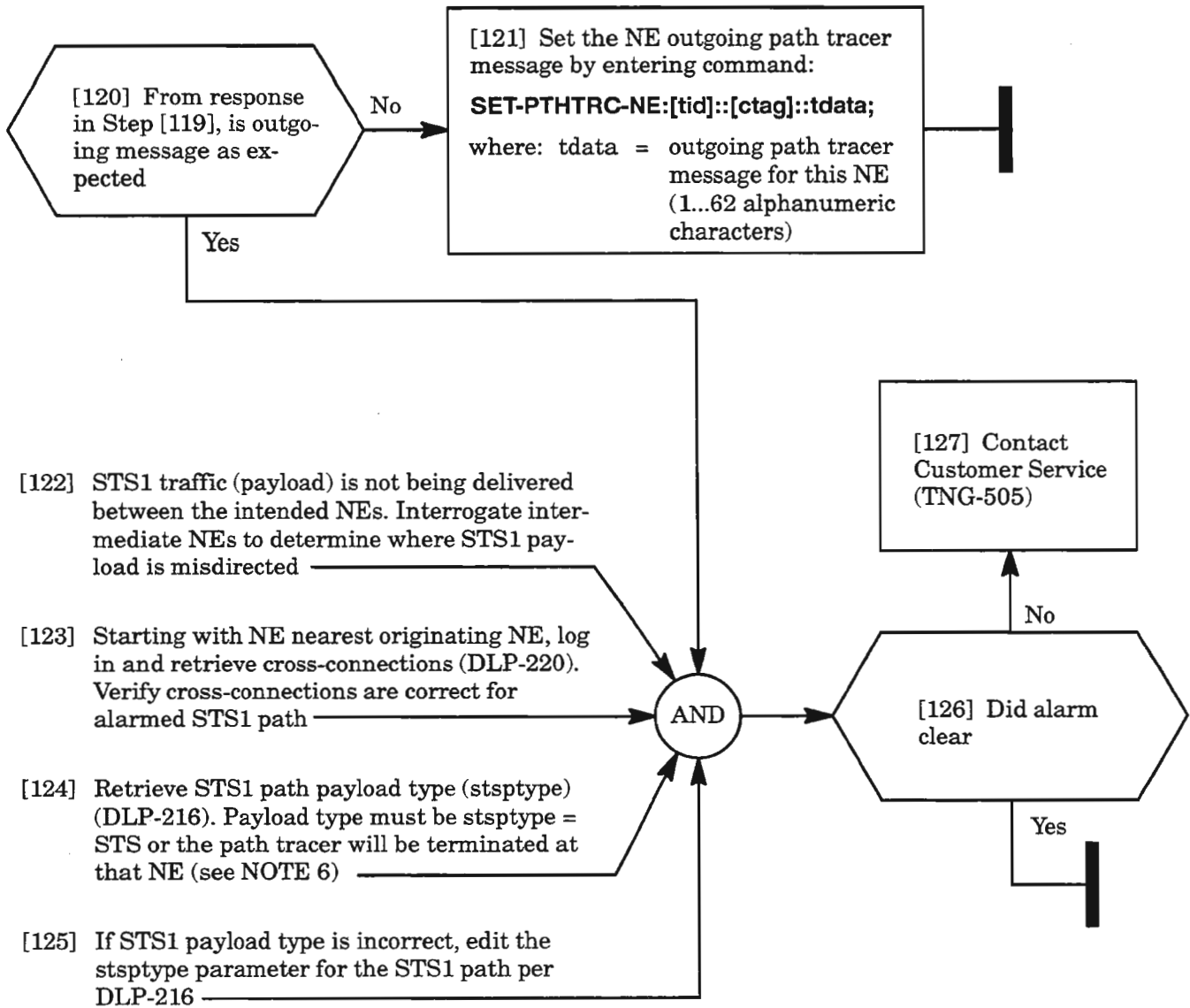
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 24 of 28	034

CLEAR STS1 PATH ALARM

**PTHTRCMF (cont)**



**PTHTRCMF (cont)**



**NOTE: 6.** STS1 path will be terminated if it is interfacing a DS3 drop group port (LIF301) or if path is provisioned for VT payload (stsptype = VT).

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 26 of 28	034

# SLMF

[128] The condition SLMF indicates the SONET C2 byte contents are inconsistent or invalid. Probable cause is the originating end of the STS1 path is incorrect payload type (does not match payload type at terminating end). This could be caused by a cross-connect problem in the network

[129] For alarmed STS1 path, enter the command:

**RTRV-COND-STS1:[tid]:aidsts:[ctag];**

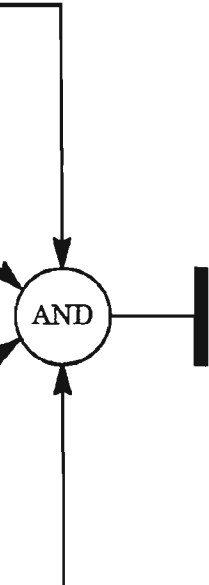
where: aidsts = STS1 path

[130] From the response, determine the signal label content from the SIGLBUEQ-(label) parameter

where: label = 1...255 (see Table C)

If SIGLBUEQ condition is returned, the path is not terminated at the originating end

[131] Look for missing cross-connection at this NE and intermediate NEs. Repeat Step [129] at each NE, including the originating NE, and verify that the proper type of payload is provided



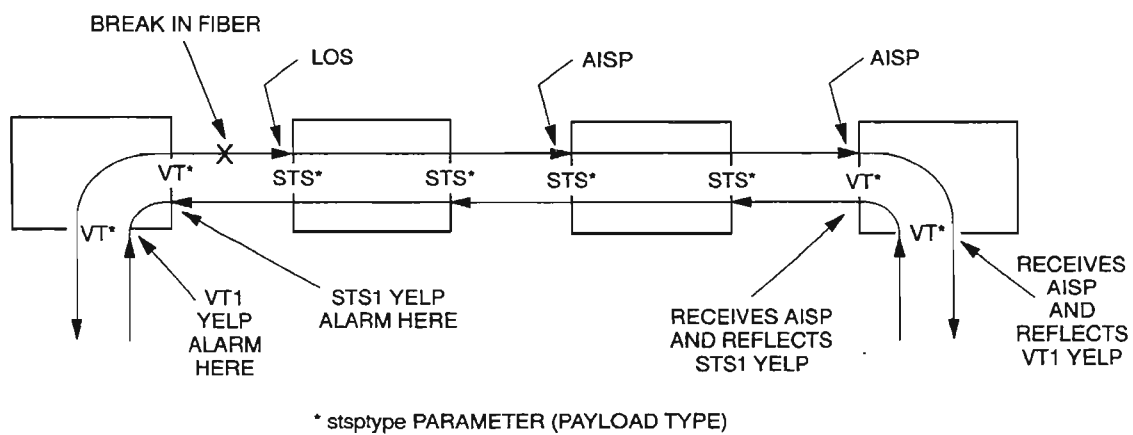
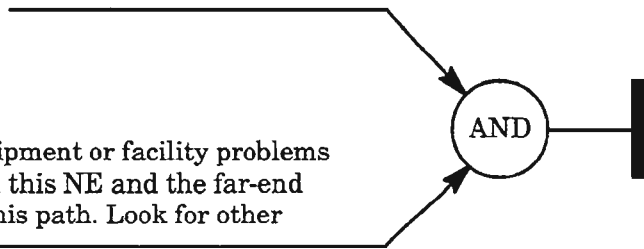
**Table C. STS Path Signal Label Assignments\***

BYTE C2 CODE (HEX)	CONTENTS OF THE STS SPE
00	Unequipped
01	Equipped – nonspecific payload
02	Floating VT mode (EC1 and HIF STS1 paths edited for VT payload)
03†	Locked VT mode
04	Asynchronous mapping for DS3 (T3 port)
05†	Mapping for byte observable SYNTRAN
12†	Asynchronous mapping for DS4NA
13†	Mapping for ATM
14†	Mapping for DQDB
15†	Asynchronous mapping for FDDI
*From BellCore Document TA-NWT-000253, Issue 8, Oct. 1993	
†Not currently supported by 1603/12 SM	

# YELP

[132] A YELP is an alarm indicator for a failure detected along the downstream STS path (see Figure 1 for example)

[133] Probable cause is equipment or facility problems at this NE or between this NE and the far-end NE that terminates this path. Look for other alarms per TAP-011

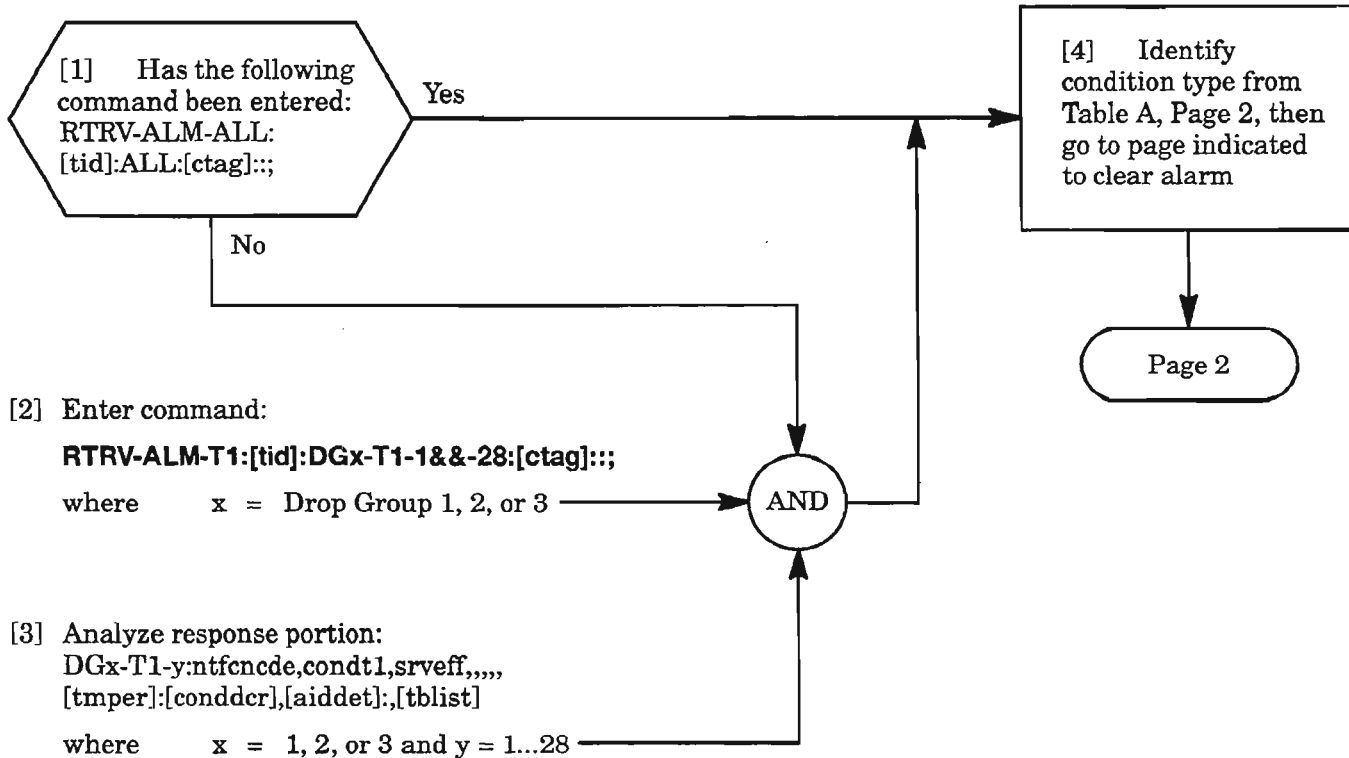


A8084

Figure 1. Example Network

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 28 of 28	034

CLEAR STS1 PATH ALARM



**Table A.**

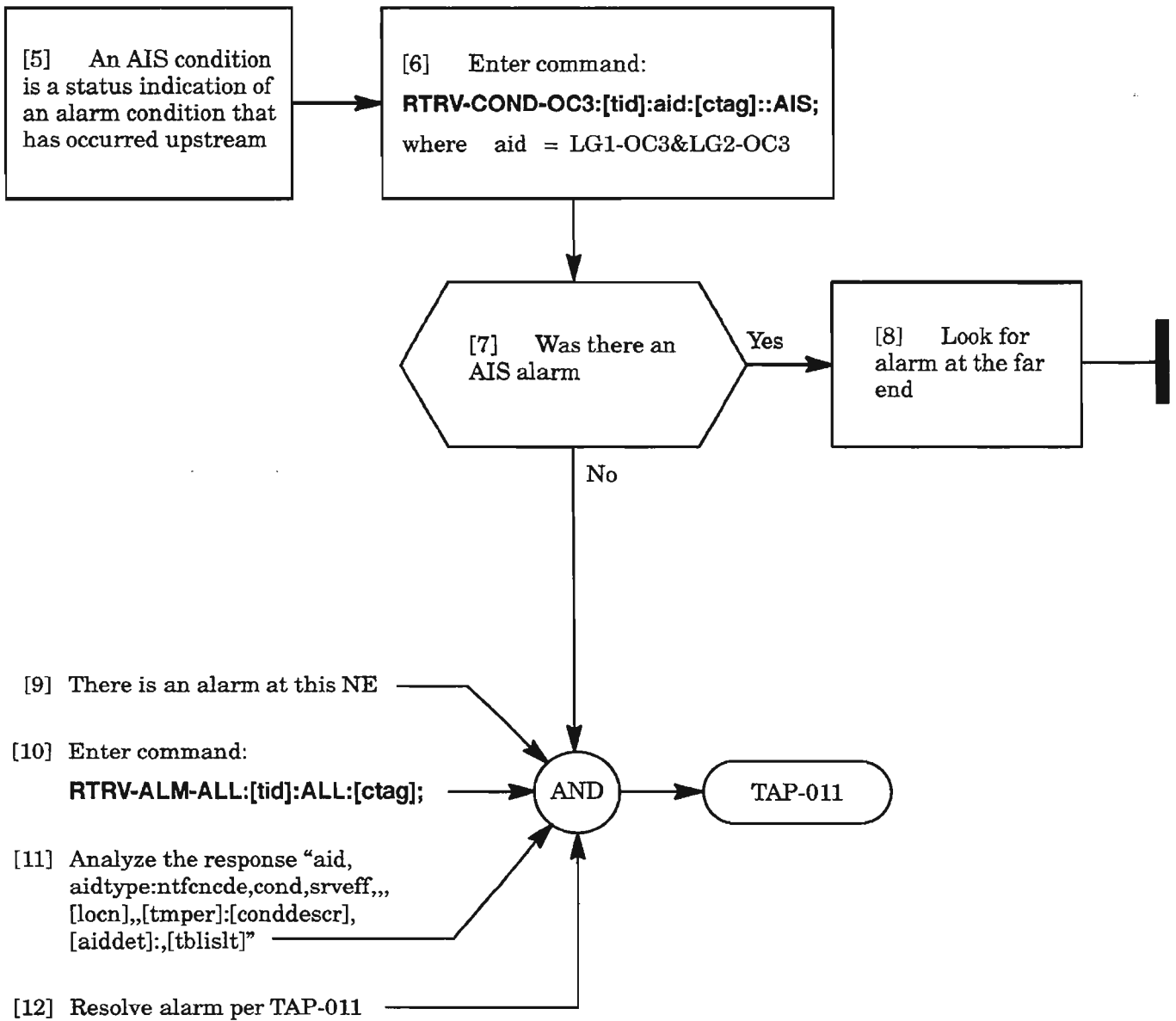
<b>CONDITION</b>	<b>SERVICE-AFFECTING</b>	<b>DEFAULT NOTIFICATION</b>	<b>DESCRIPTION</b>	<b>PAGE</b>
AIS	SA	NA	Alarm Indication Signal, all ones	3
INHLPBK	NSA	MN	Inhibit loopback	4
INHMPREPT	NSA	MN	Inhibit performance monitoring reporting	4
LOS	SA	MJ	Loss of signal	5
MTCE	NSA	MN	Removed from service for maintenance	9
BER-HT	SA	MJ	Bit error ratio has exceeded high threshold value	10
T-BPV	NSA	NA	Bipolar violation threshold crossing	11
T-ESL	NSA	NA	Error seconds threshold crossing	11
T-SESL	NSA	NA	Severely errored seconds threshold crossing	11

<b>ISSUE 1</b>	<b>MAY 1994</b>
<b>ALCL 363-203-502</b>	<b>TAP</b>
<b>PAGE 2 of 15</b>	<b>035</b>

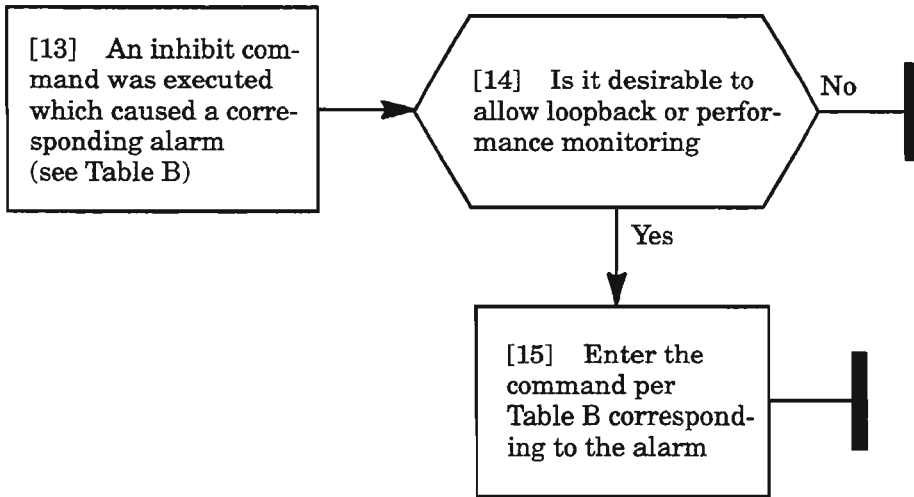
**CLEAR T1 FACILITY ALARM**



**AIS**



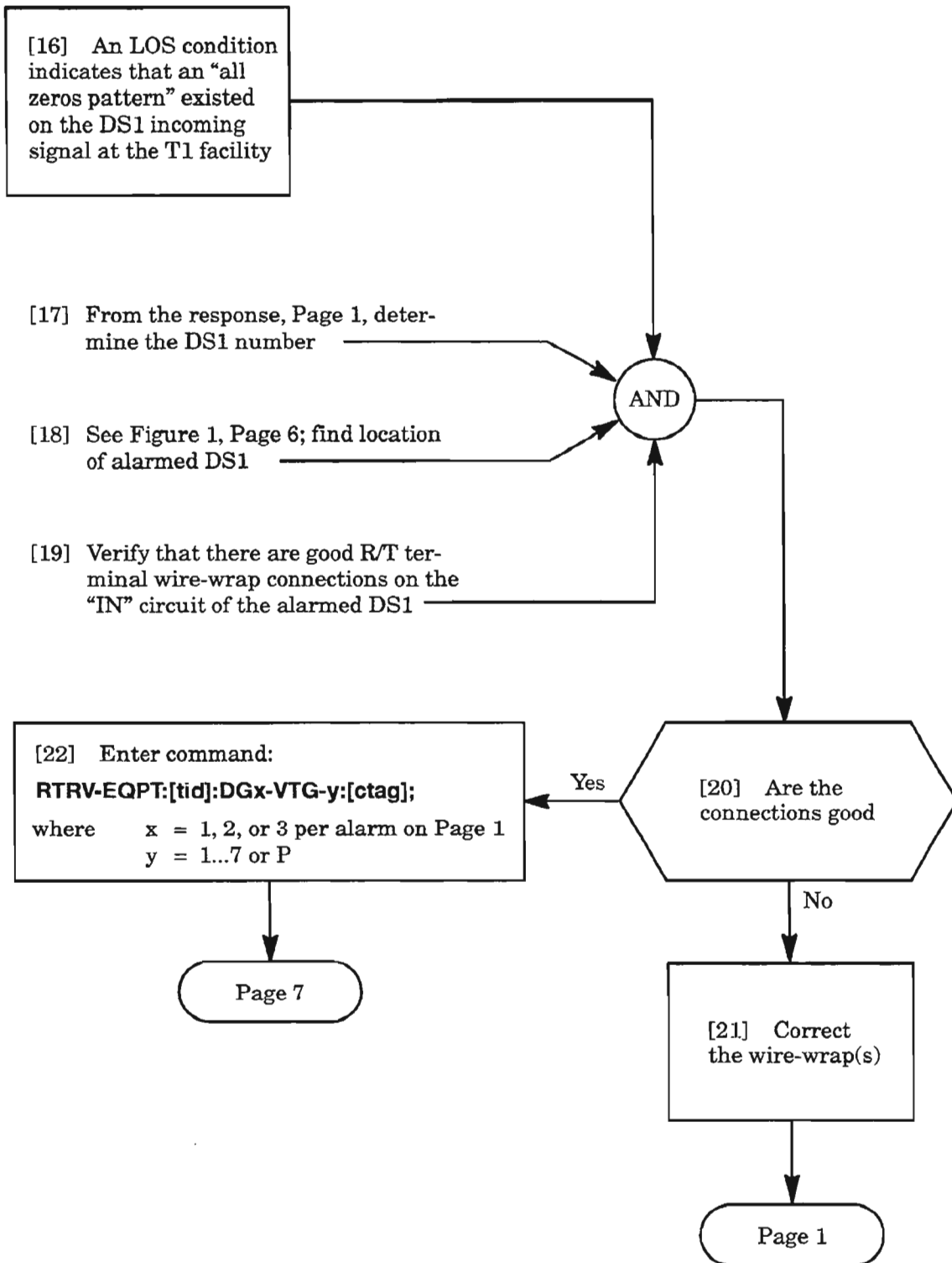
**INHLPBK, INHPMREPT**

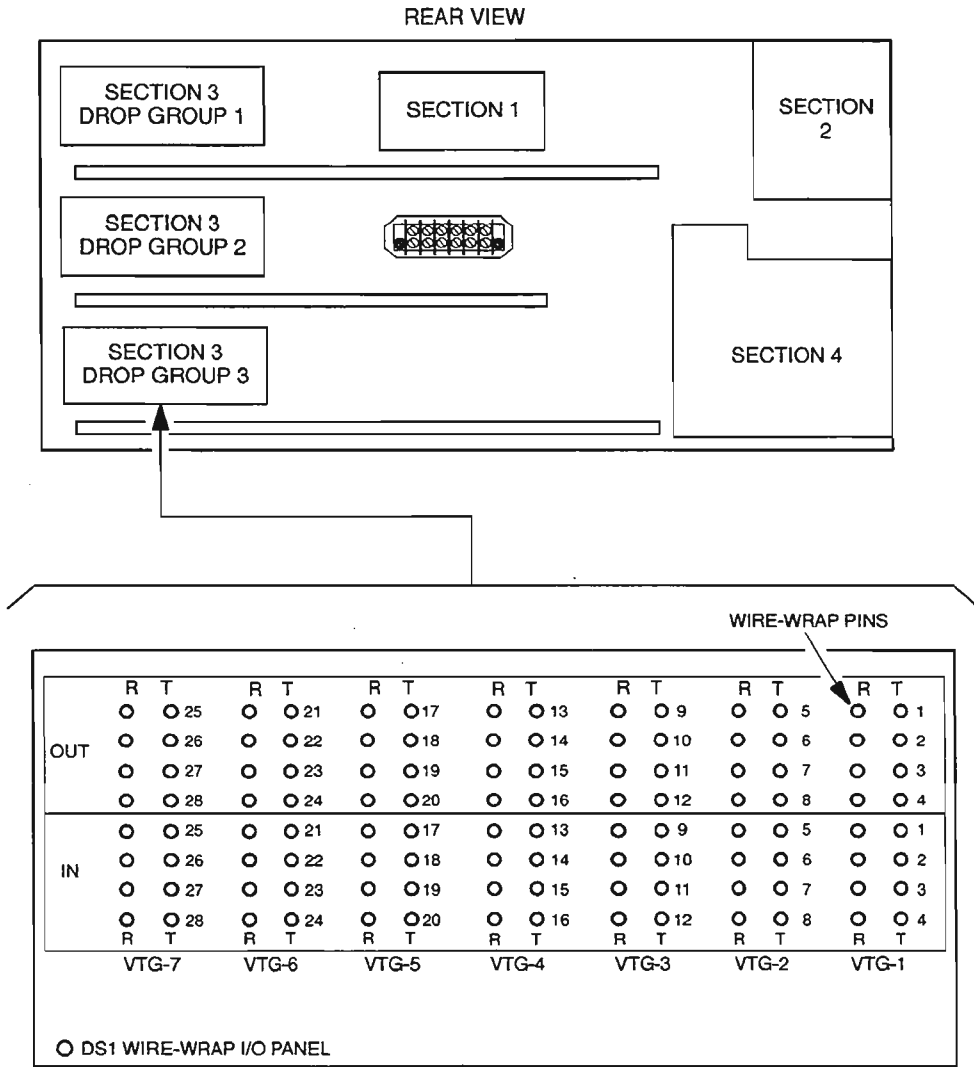


**Table B.**

<b>ALARM</b>	<b>COMMAND</b>
INHLPBK (inhibit loopback on the T1 facility)	<b>ALW-LPBK-T1:[tid]:aid:[ctag];</b> where aid = DGx-T1-y, with x = 1, 2 or 3 and y = 1...28 per alarm
INHPMREPT (inhibit performance monitoring reporting)	<b>ALW-PMREPT-T1:[tid]:aid:[ctag];</b> where aid = DGx-T1-y, with x = 1, 2 or 3 and y = 1...28 per alarm

# LOS





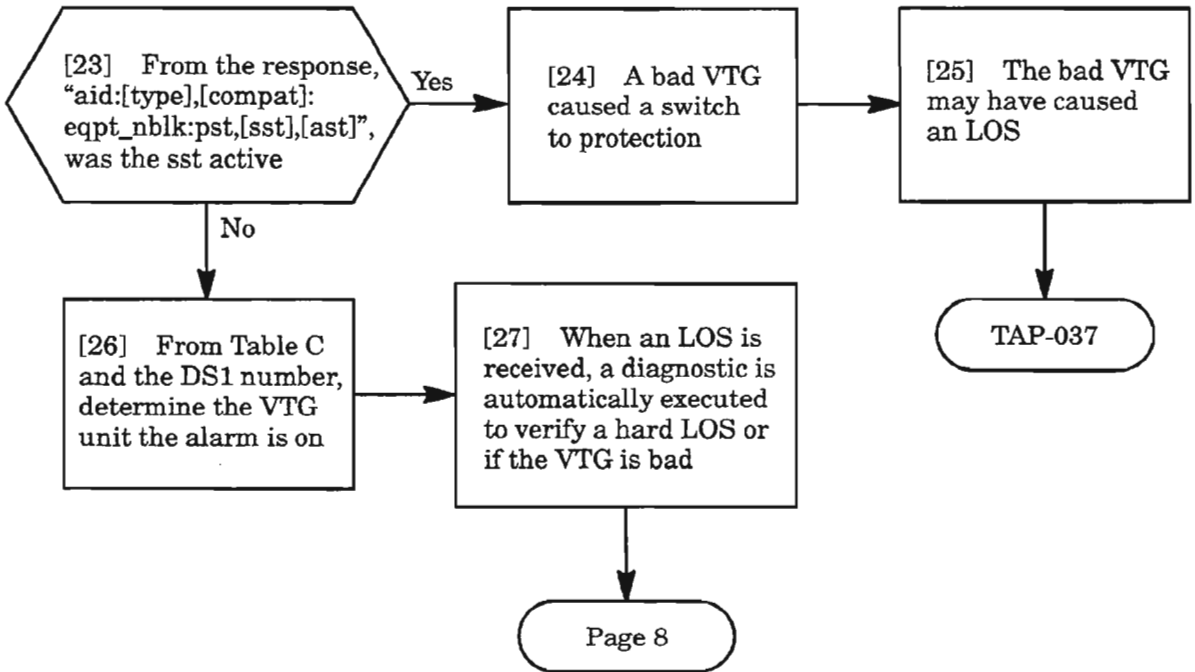
A7049Rev3

Figure 1. DS1 Wire-wrap I/O Panel Layout

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 6 of 15	035

CLEAR T1 FACILITY ALARM

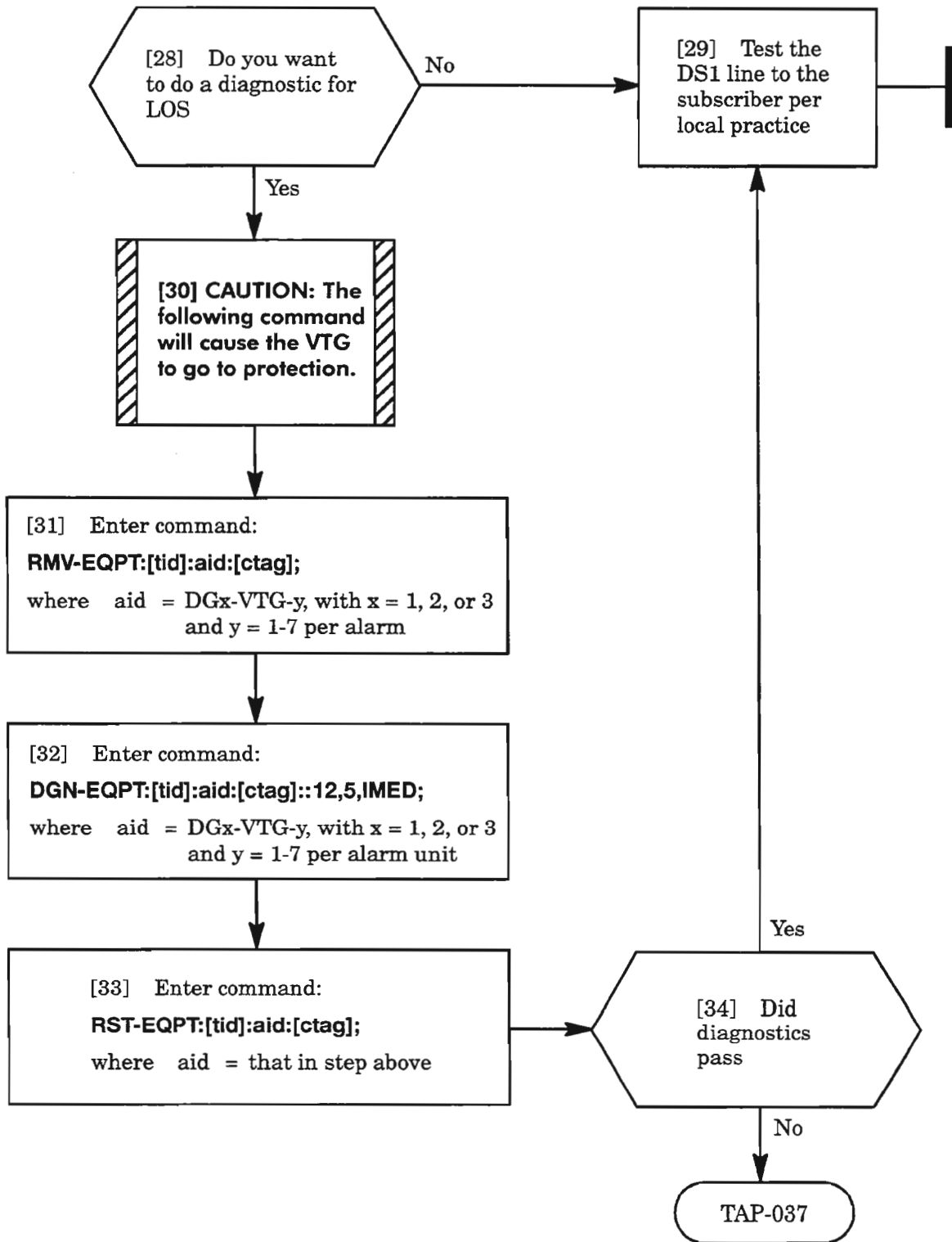
**LOS (cont)**



**Table C.**

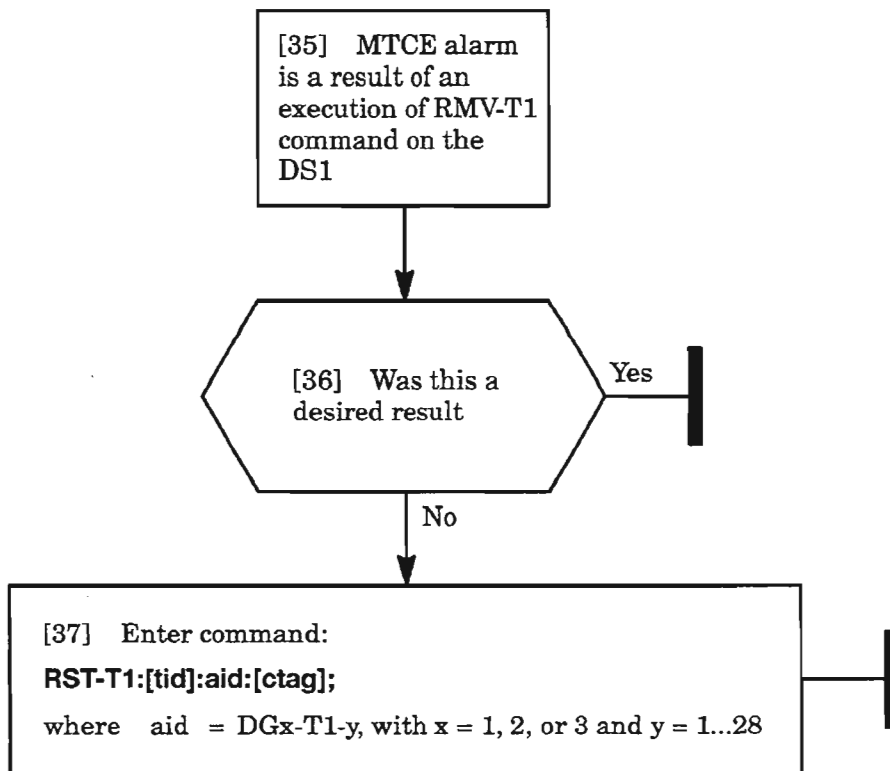
VTG 1		VTG 2		VTG 3		VTG 4		VTG 5		VTG 6		VTG 7	
DS1#	VT#	DS1#	VT#	DS1#	VT#	DS1#	VT#	DS1#	VT#	DS1#	VT#	DS1#	VT#
1	1	5	2	9	3	13	4	17	5	21	6	25	7
2	8	6	9	10	10	14	11	18	12	22	13	26	14
3	15	7	16	11	17	15	18	19	19	23	20	27	21
4	22	8	23	12	24	16	25	20	26	24	27	28	28

**LOS (cont)**

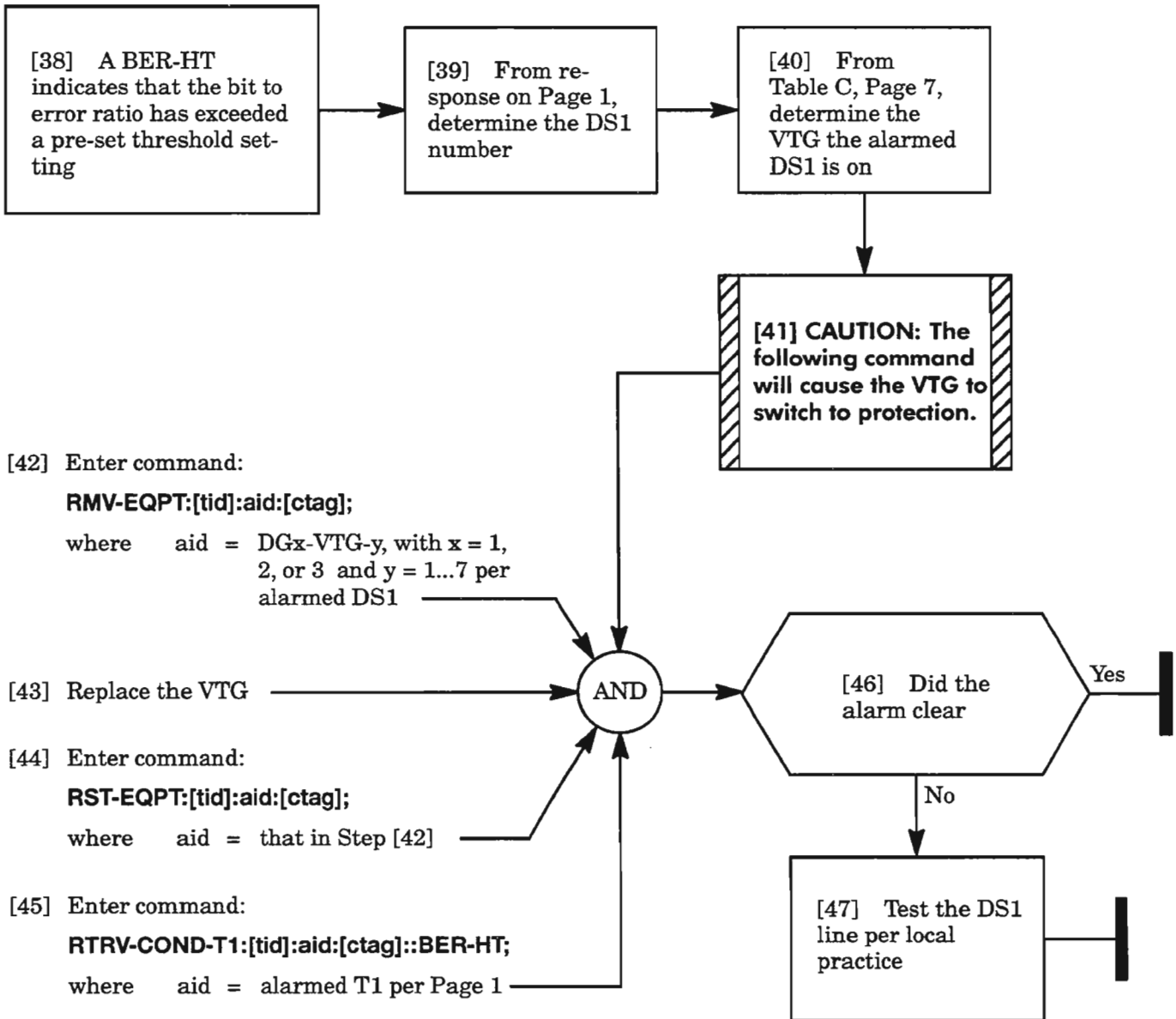


ISSUE 1	MAY 1994
ALCL 363-203-502	TAP 035
PAGE 8 of 15	

# MTCE



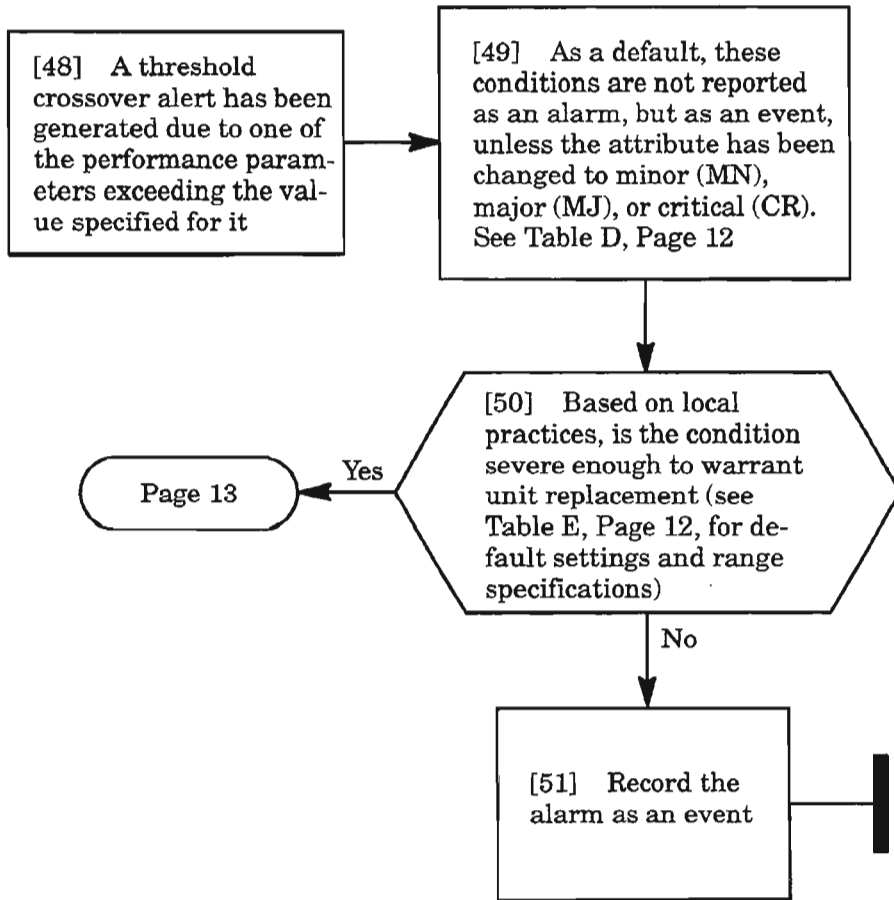
# BER-HT



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 10 of 15	035



# T-BPV, T-ESL, T-SESL



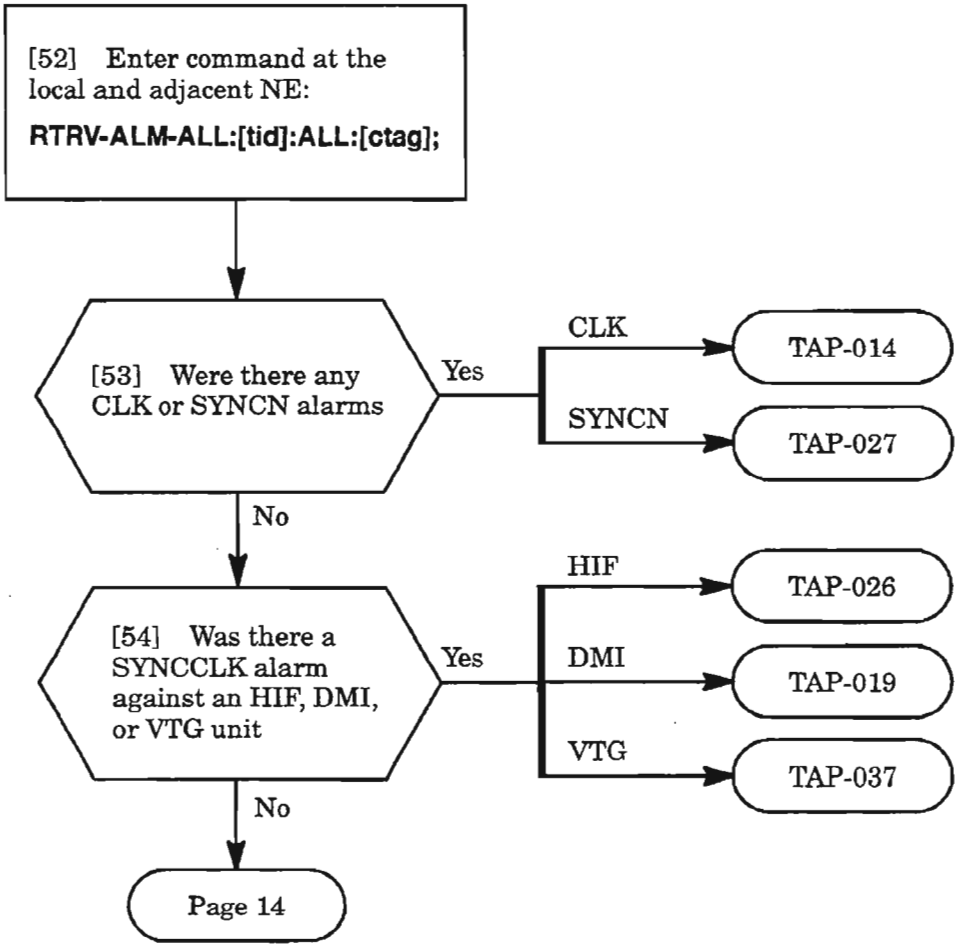
**Table D.**

<b>CONDITION</b>	<b>SERVICE-AFFECTING</b>	<b>DEFAULT NOTIFICATION</b>	<b>DESCRIPTION</b>
AIS	SA	NA	Alarm Indication Signal, all ones
INHLPBK	NSA	MN	Inhibit loopback
INHMPREPT	NSA	MN	Inhibit performance monitoring reporting
LOS	SA	MJ	Loss of signal
MTCE	NSA	MN	Removed from service for maintenance
BER-HT	SA	MJ	Bit error ratio has exceeded high threshold setting
T-BPV	NSA	NA	Bipolar violation threshold crossing
T-ESL	NSA	NA	Error seconds threshold crossing
T-SESL	NSA	NA	Severely errored seconds threshold crossing

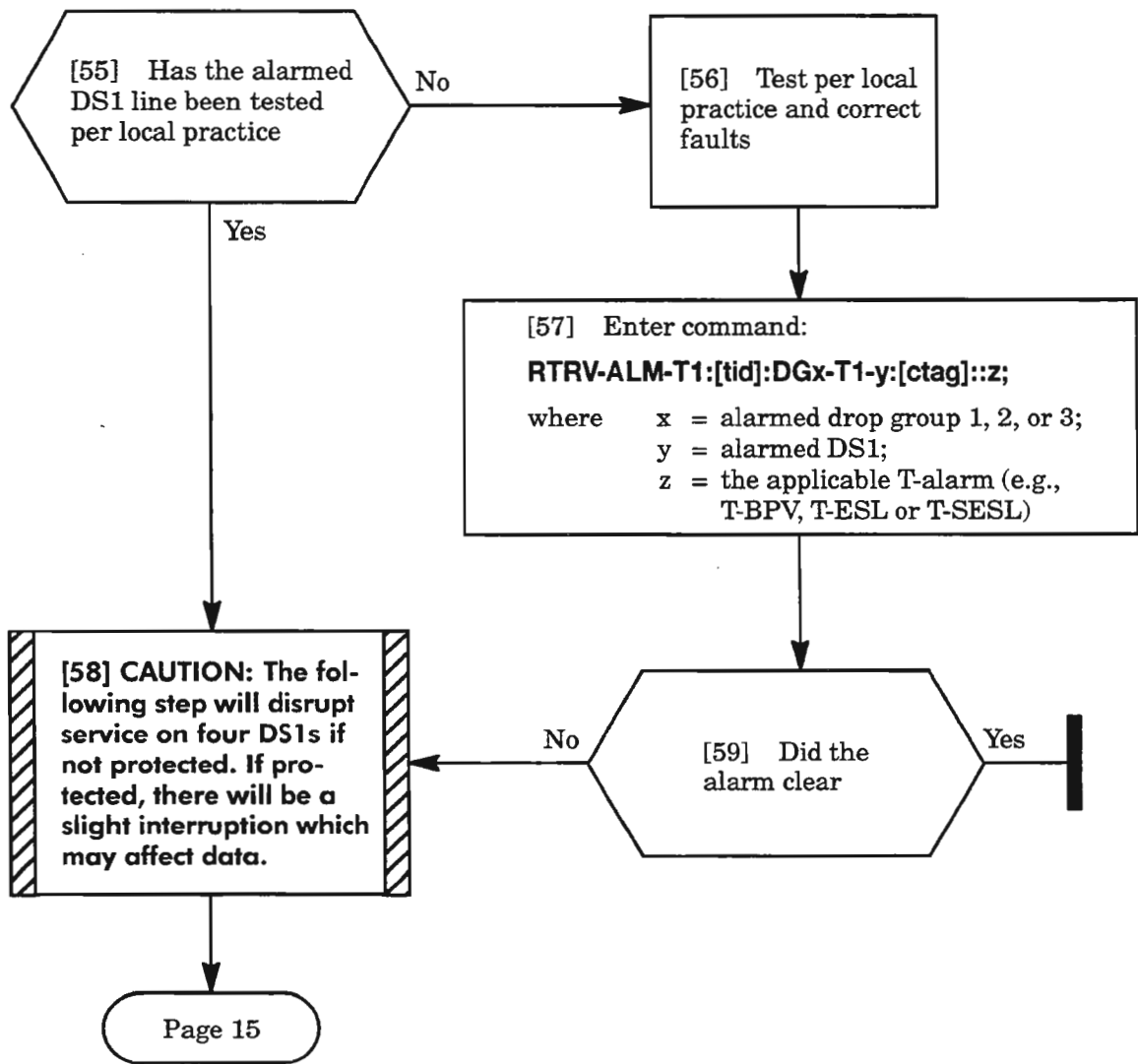
**Table E.**

<b>TYPE</b>	<b>DEFAULT</b>		<b>RANGE</b>	<b>DESCRIPTION</b>
	<b>15-MIN</b>	<b>1-DAY</b>		
BPV	12,240	133,400	1...4,294,967,295	Line BIP errors
ESL	65	648	1...65,535	Line error seconds
SESL	10	100	1...65,535	Line severely errored seconds
BER-HT	4	4	3...6	Bit error ratio - high threshold

**T-BPV, T-ESL, T-SESL (cont)**



**T-BPV, T-ESL, T-SESL (cont)**



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 14 of 15	035

**T-BPV, T-ESL, T-SESL (cont)**

[60] Enter command:

**RMV-EQPT:[tid]:aid:[ctag];**

where aid = DGx-VTG-y, with x = 1, 2, or 3  
and y = 1-7, the corresponding  
VTG path number per Table C,  
Page 7

[61] Replace the VTG

[62] Enter command:

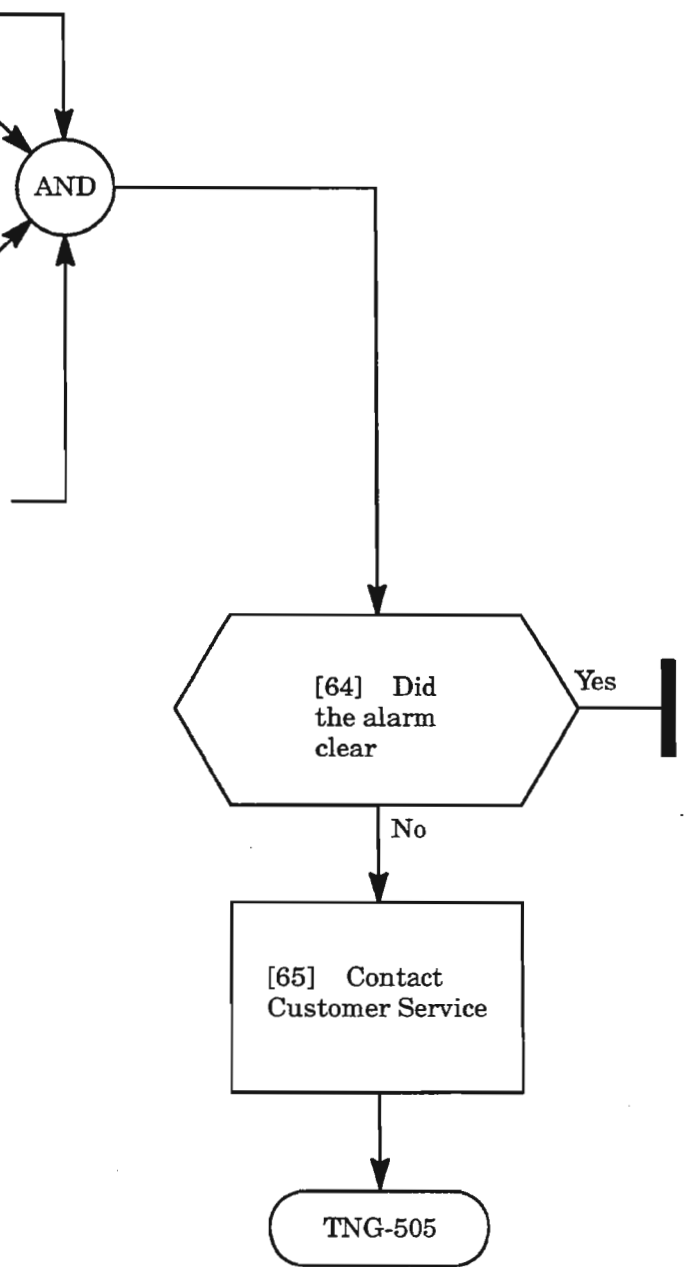
**RST-EQPT:[tid]:aid:[ctag];**

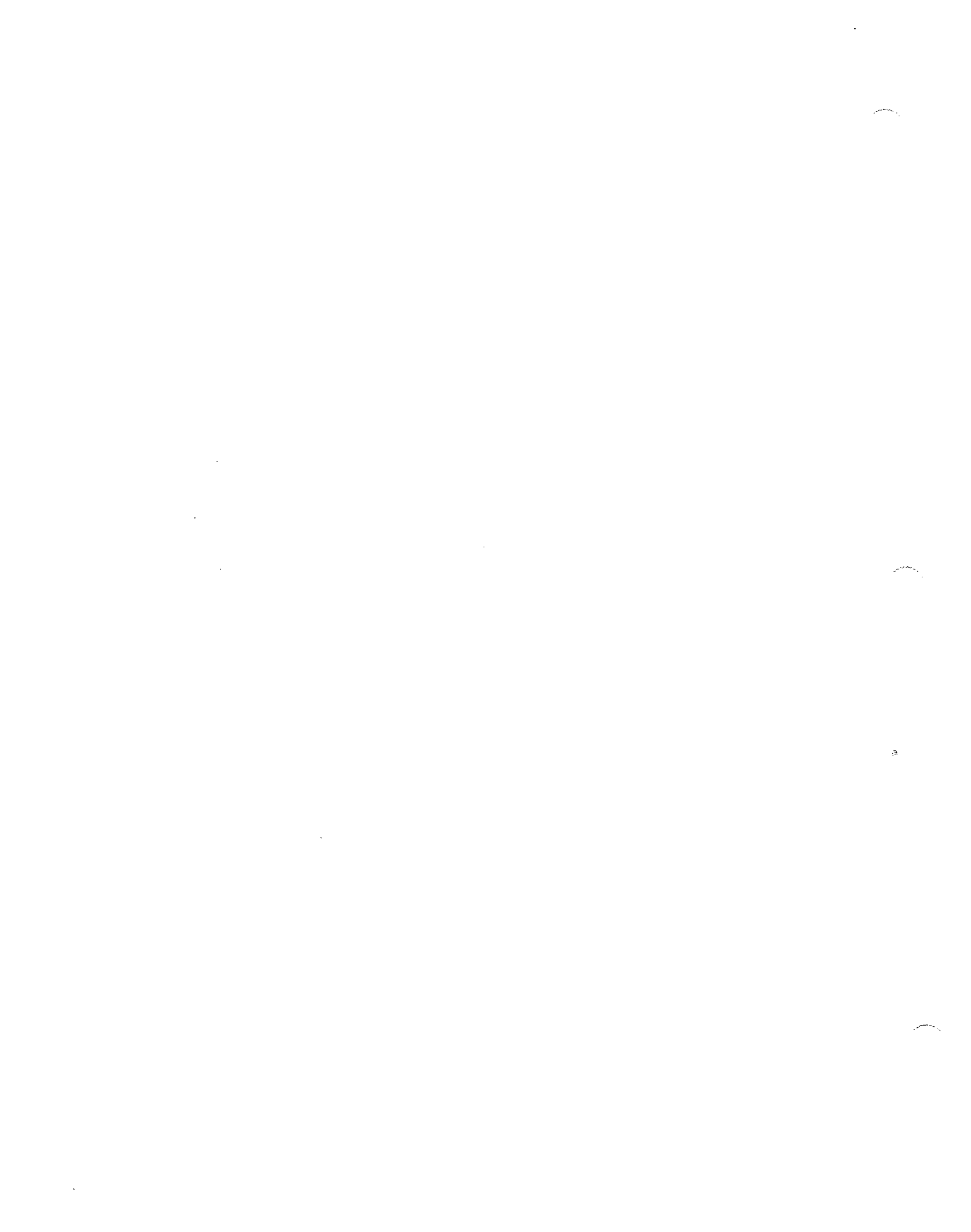
where aid = that in Step [61]

[63] Enter command:

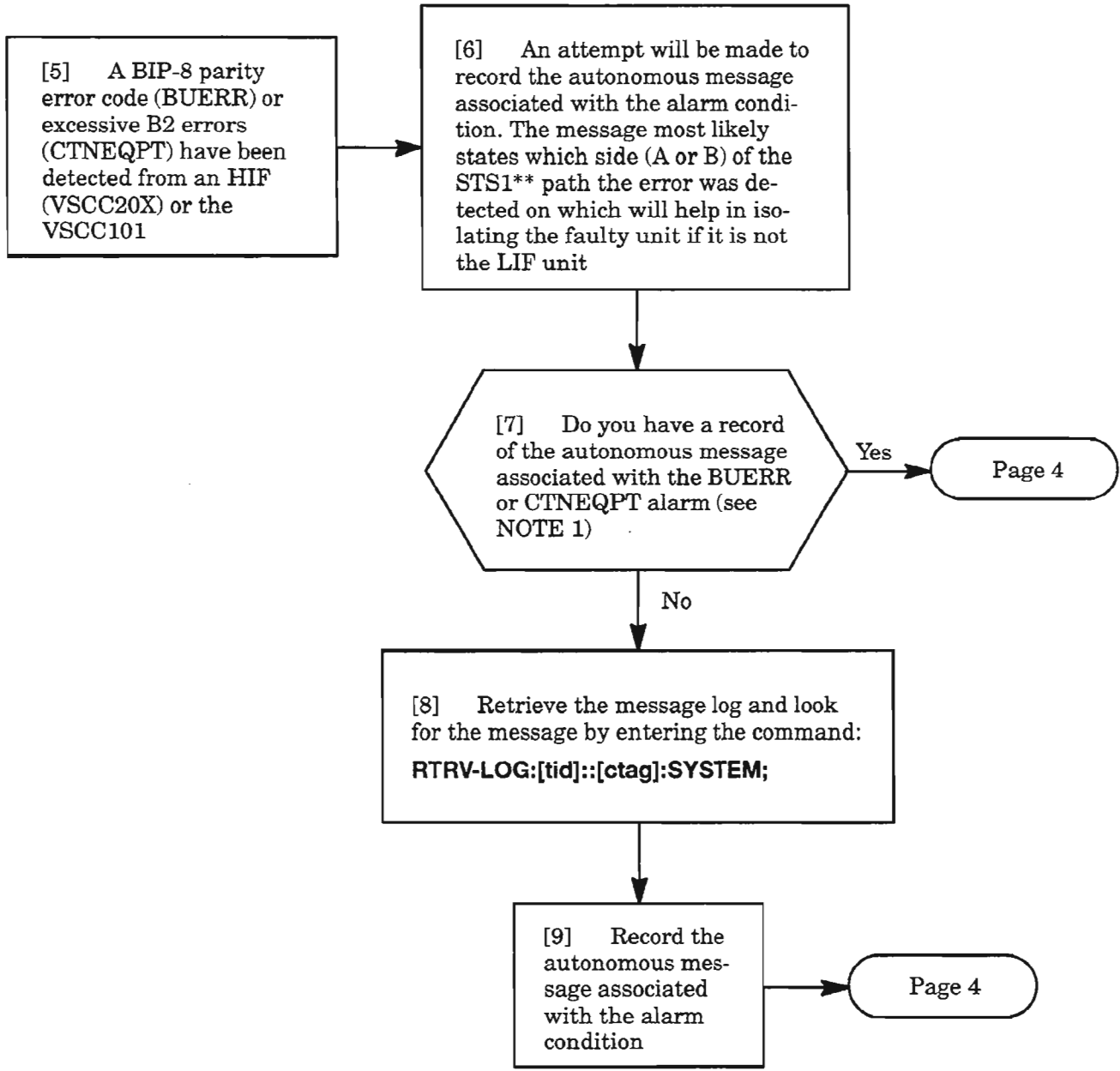
**RTRV-COND-T1:[tid]:aid:[ctag]::z;**

where aid = that in Step [4], Page 1;  
z = the applicable T-alarm  
(e.g., T-BPV, T-ESL or T-SESL)



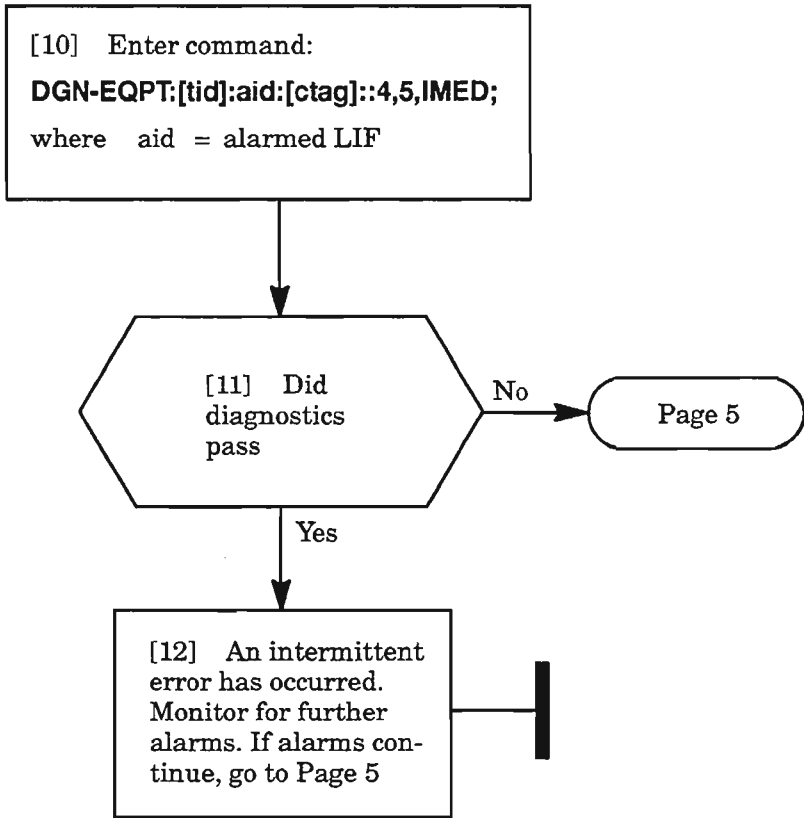


# BUERR/CTNEQPT



**NOTE: 1.** The autonomous message will be of the type REPT-ALM-EQPT with the aid format of DGx-LIFy (where x = 1, 2, or 3, and y = A or B). If BUERR alarm, the conddescr parameter will contain B2ERRORA or B2ERRORB. If CTNEQPT alarm, the conddescr parameter will contain STS1AFAIL, STS1BFAIL, STSAINERX or STSBINERX. The highlighted A or B in the conddescr indicates which STS\*\* bus (Side A or Side B) the error was detected on (see TAP-052).

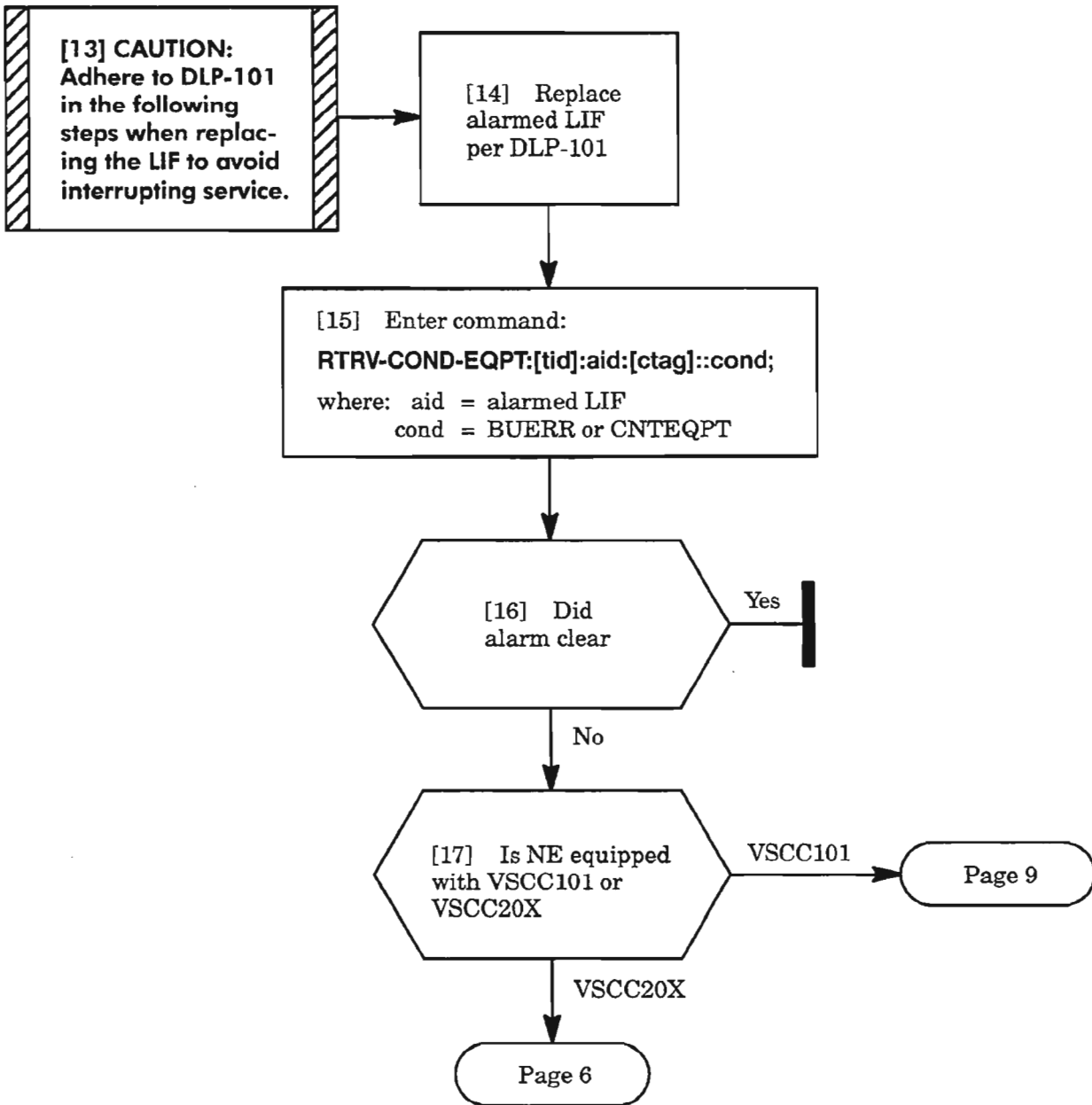
# BUERR/CTNEQPT (cont)



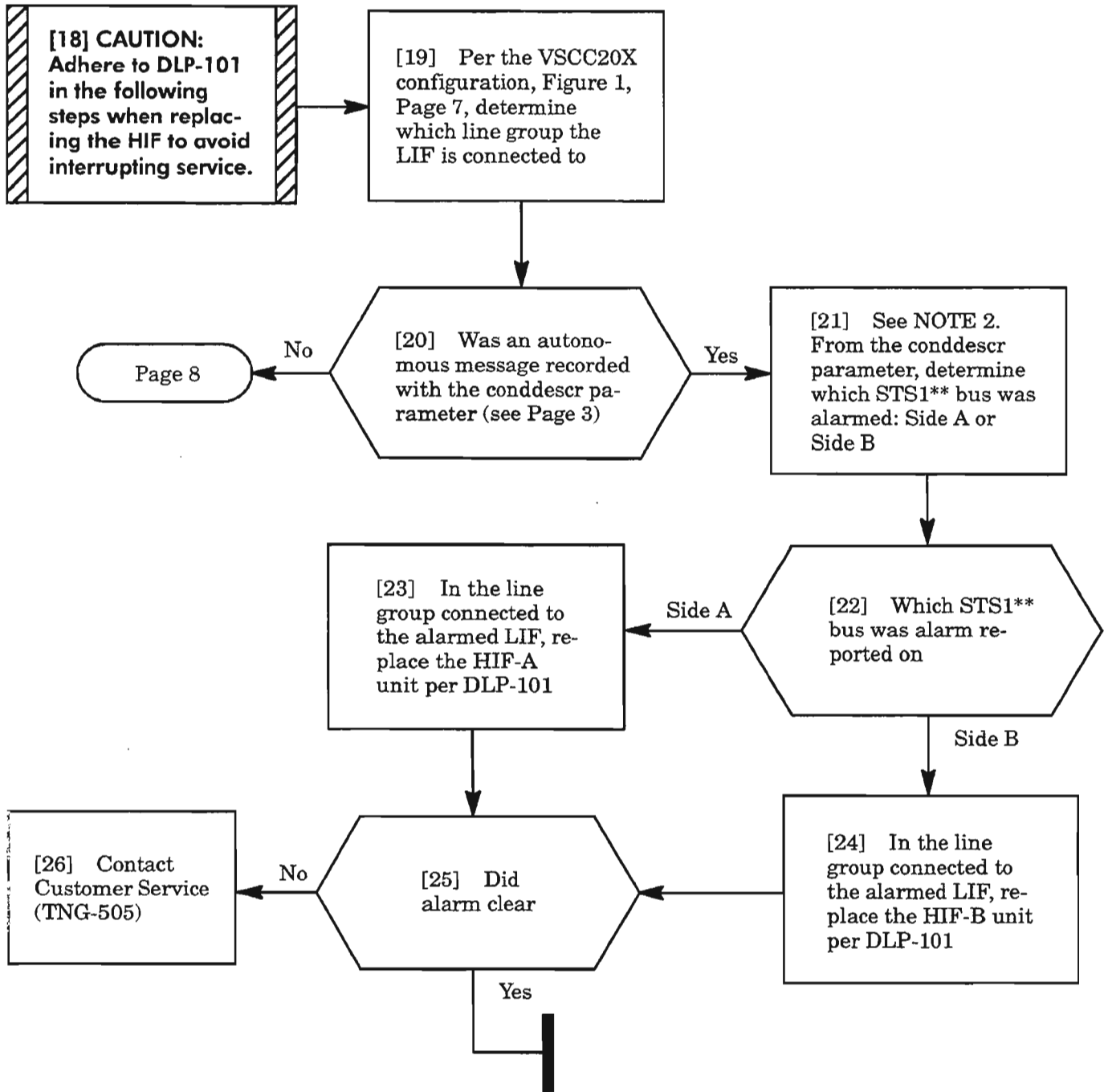
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 34	042



**BUERR/CTNEQPT (cont)**

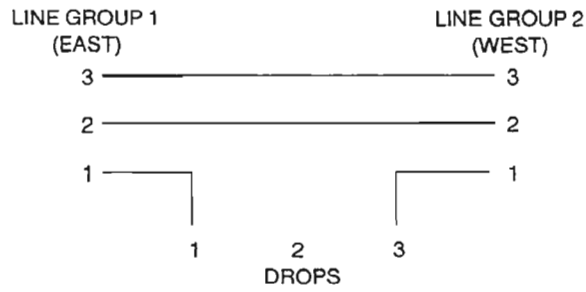


**BUERR/CTNEQPT (cont)**

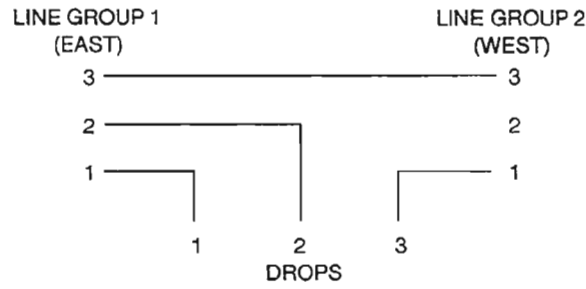


**NOTE: 2.** If BUERR alarm, the conddescr parameter will contain B2ERRORA or B2ERRORB. If CTNEQPT alarm, the conddescr parameter will contain STS1AFAIL, STS1BFAIL, STSAINERX or STSBINERX. The highlighted A or B in the conddescr indicates which STS\*\* bus (Side A or Side B) the error was detected on.

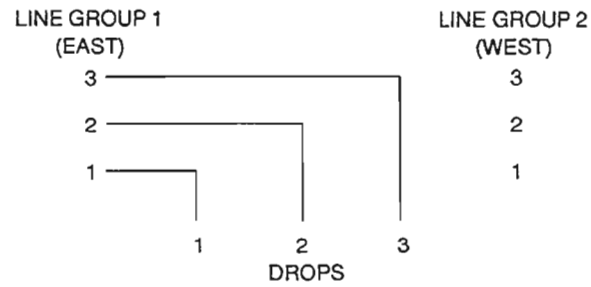
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 34	042



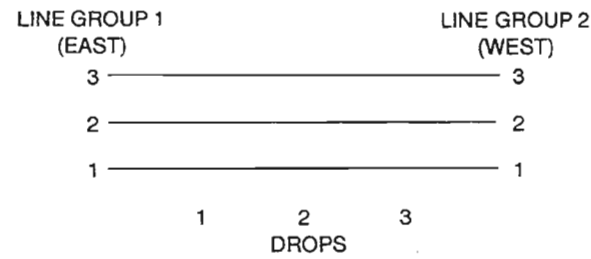
Detail A - VSCC201, Routing Diagram



Detail B - VSCC202, Routing Diagram



Detail C - VSCC203, Routing Diagram



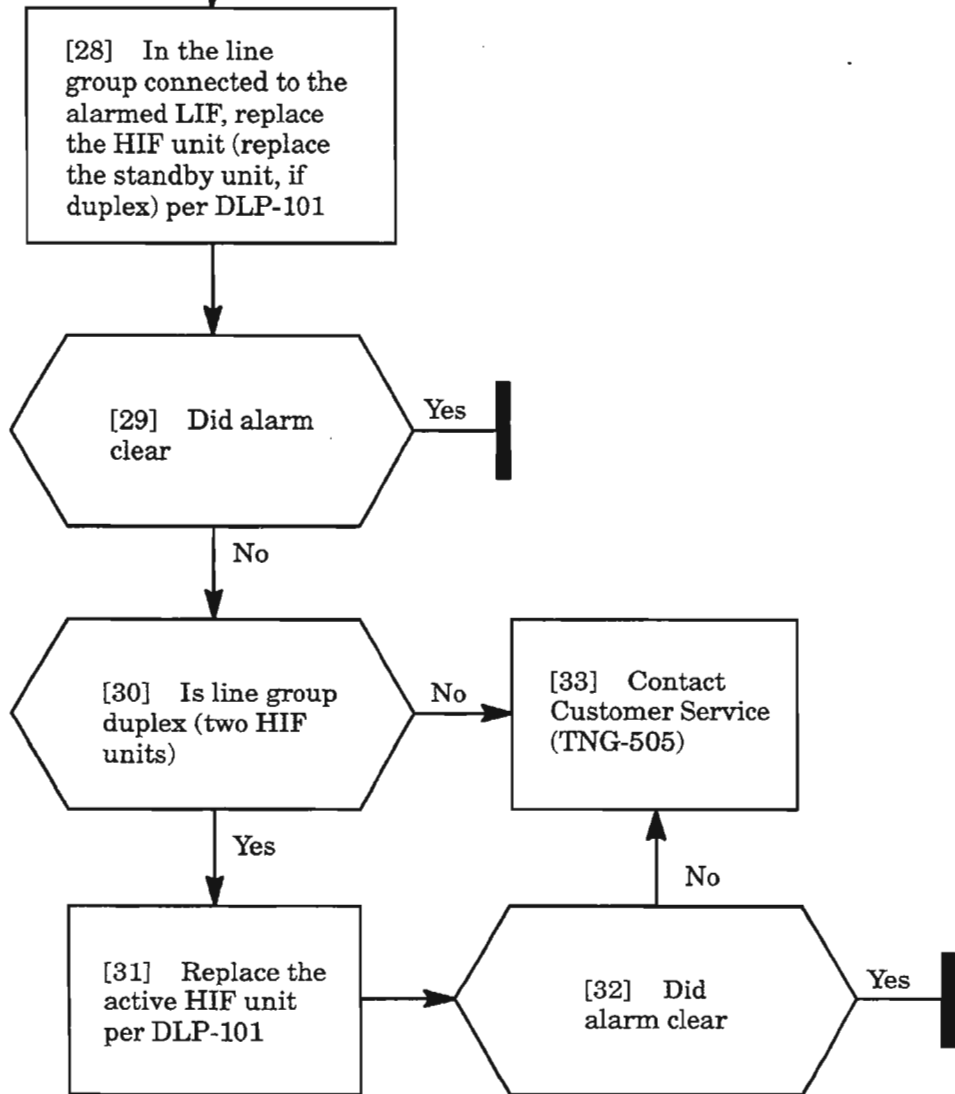
Detail D - VSCC204, Routing Diagram

A7395

Figure 1. VSCC20X, 625618-000-00X, Traffic Routing Diagrams

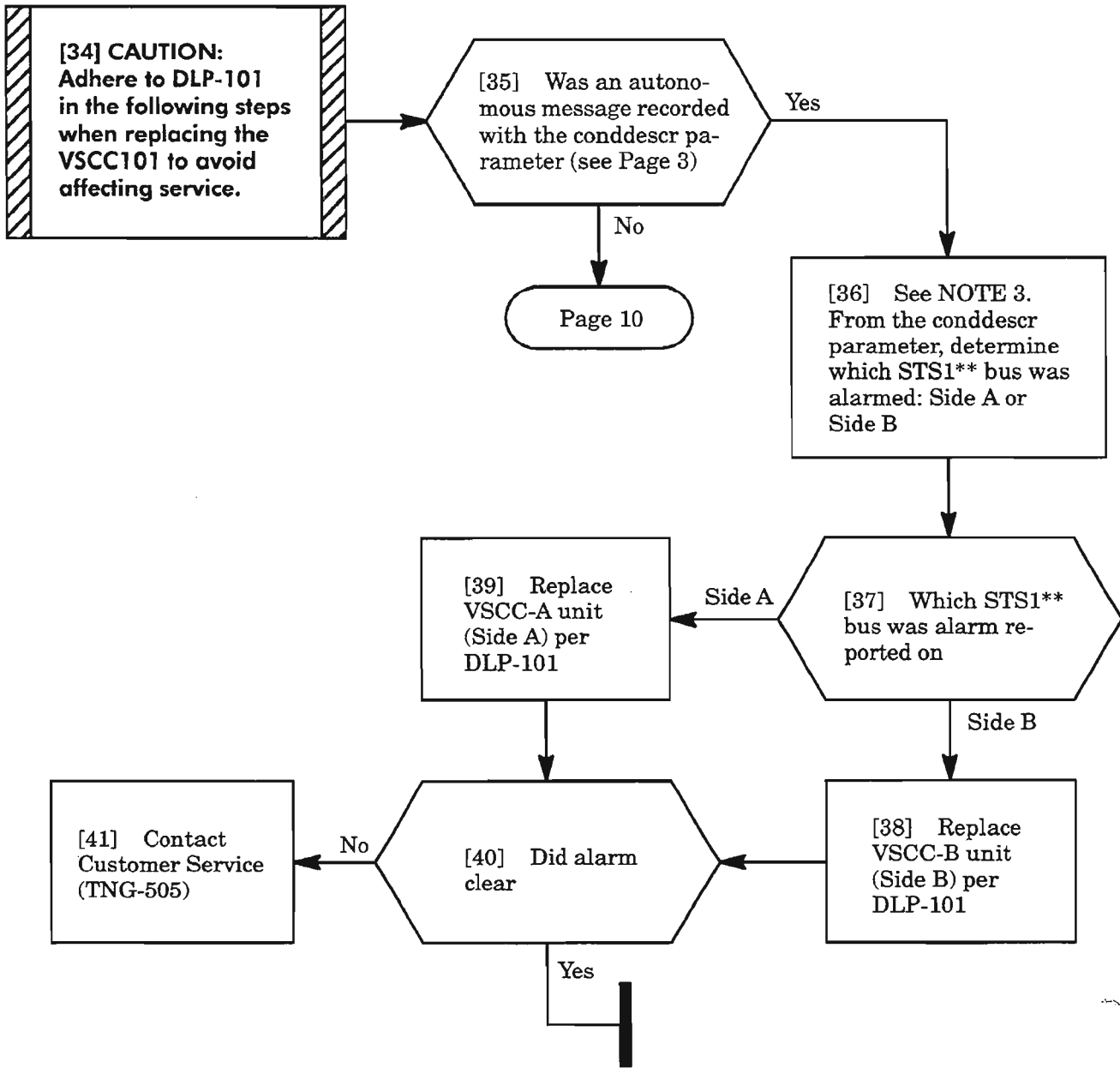
**BUERR/CTNEQPT (cont)**

**[27] CAUTION:**  
Adhere to DLP-101  
in the following  
steps when replac-  
ing the HIF to avoid  
interrupting service.



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 8 of 34	042

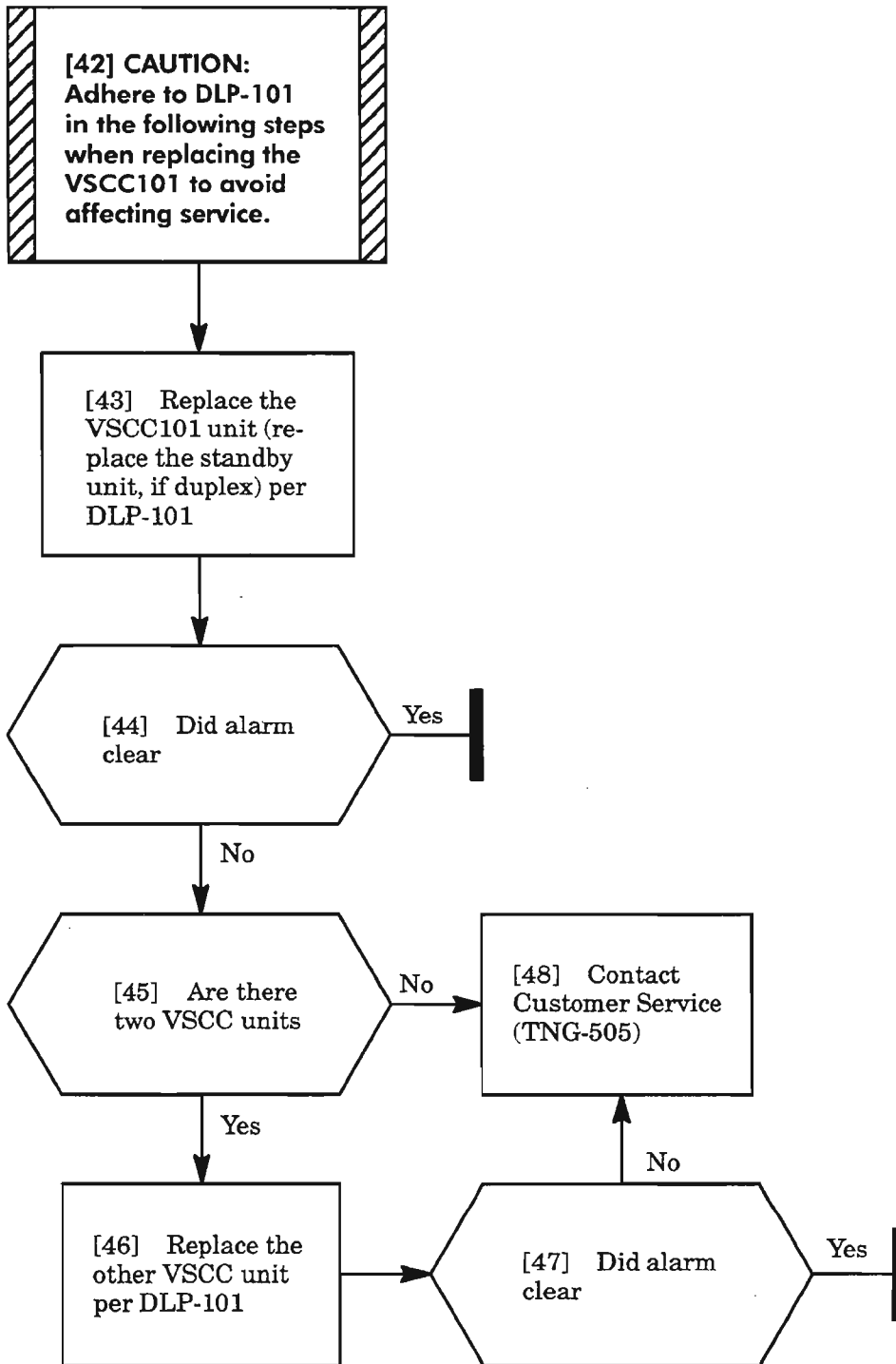
**BUERR/CTNEQPT (cont)**



**NOTE: 3.** *If BUERR alarm, the conddescr parameter will contain B2ERRORA or B2ERRORB. If CTNEQPT alarm, the conddescr parameter will contain STS1AFAIL, STS1BFAIL, STSAIN-ERX or STSBINERX. The highlighted A or B in the conddescr indicates which STS\*\* bus (Side A or Side B) the error was detected on.*

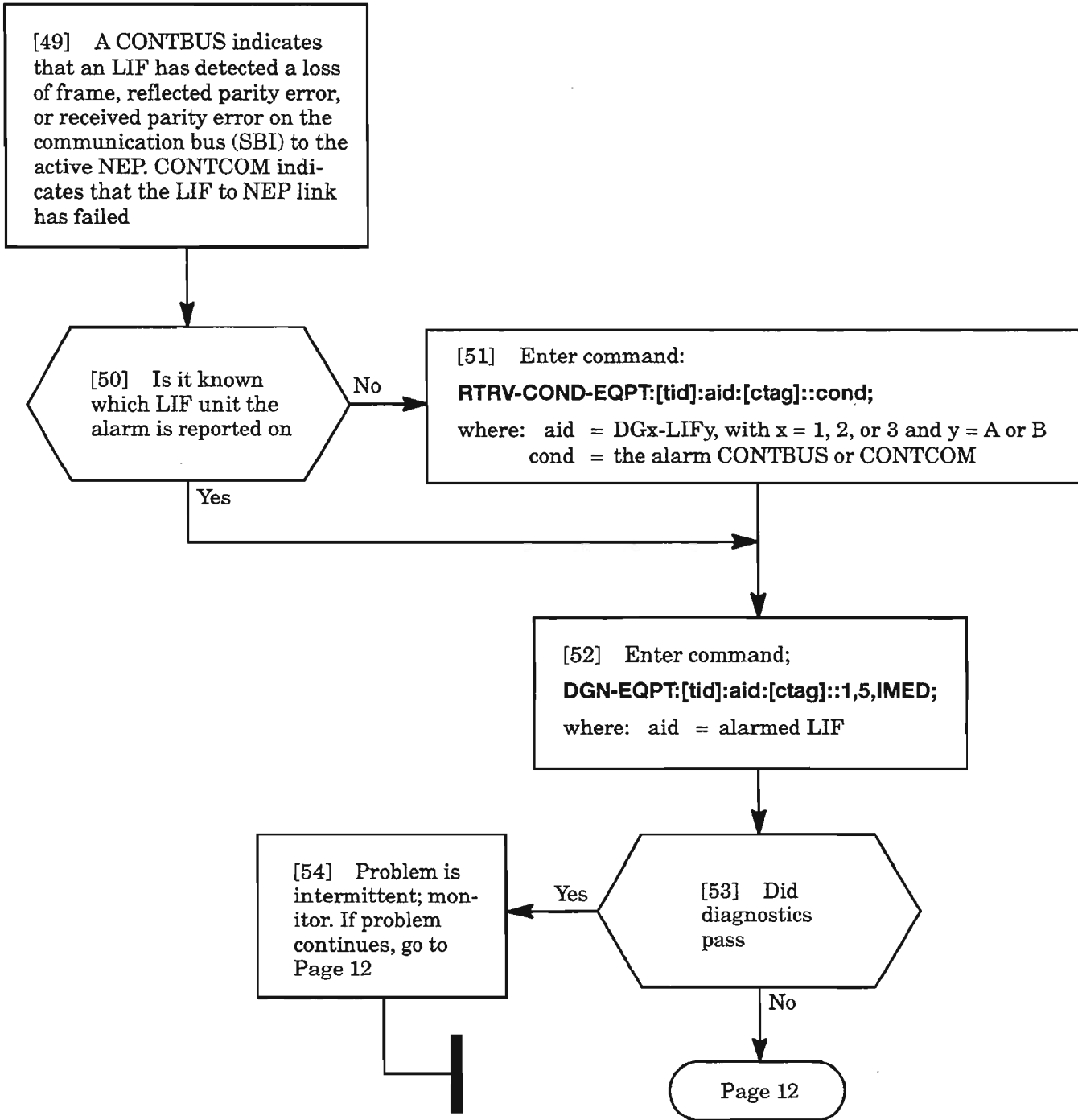
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 9 of 34	042

**BUERR/CTNEQPT (cont)**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 10 of 34	042

# CONTBUS/CONTCOM



# CONTBUS/CONTCOM (cont)

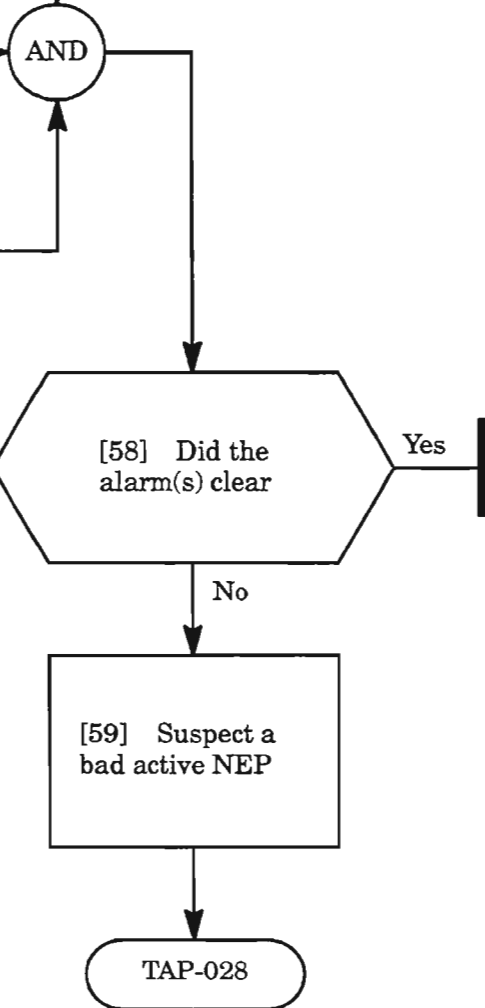
**[55] CAUTION:**  
Adhere to DLP-101  
in the following  
steps when replac-  
ing the LIF to avoid  
interrupting service.

[56] Replace alarmed LIF per DLP-101

[57] Enter command:

**RTRV-ALM-EQPT:[tid]:aid:[ctag]::;**

where: aid = alarmed LIF

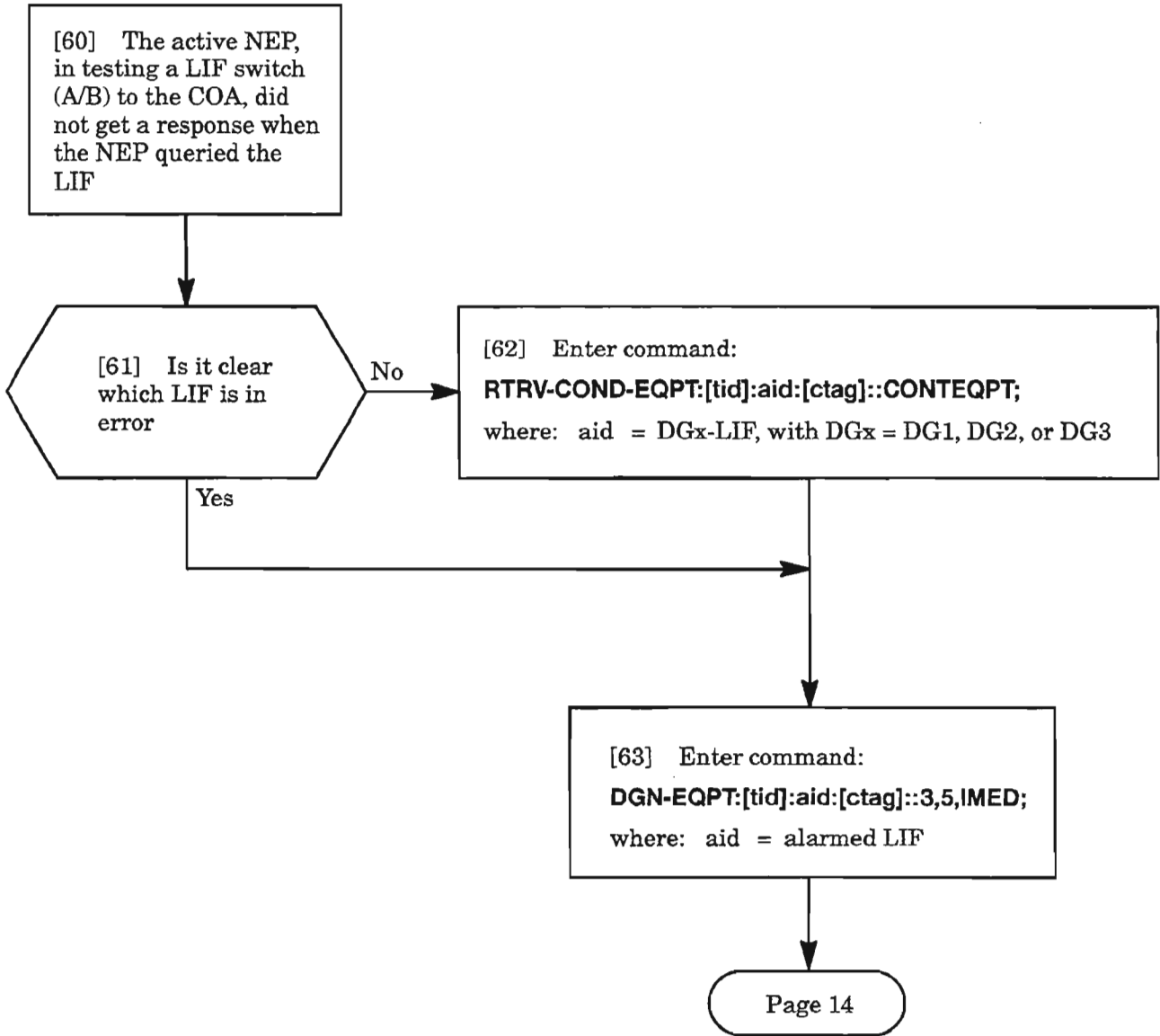


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 34	042

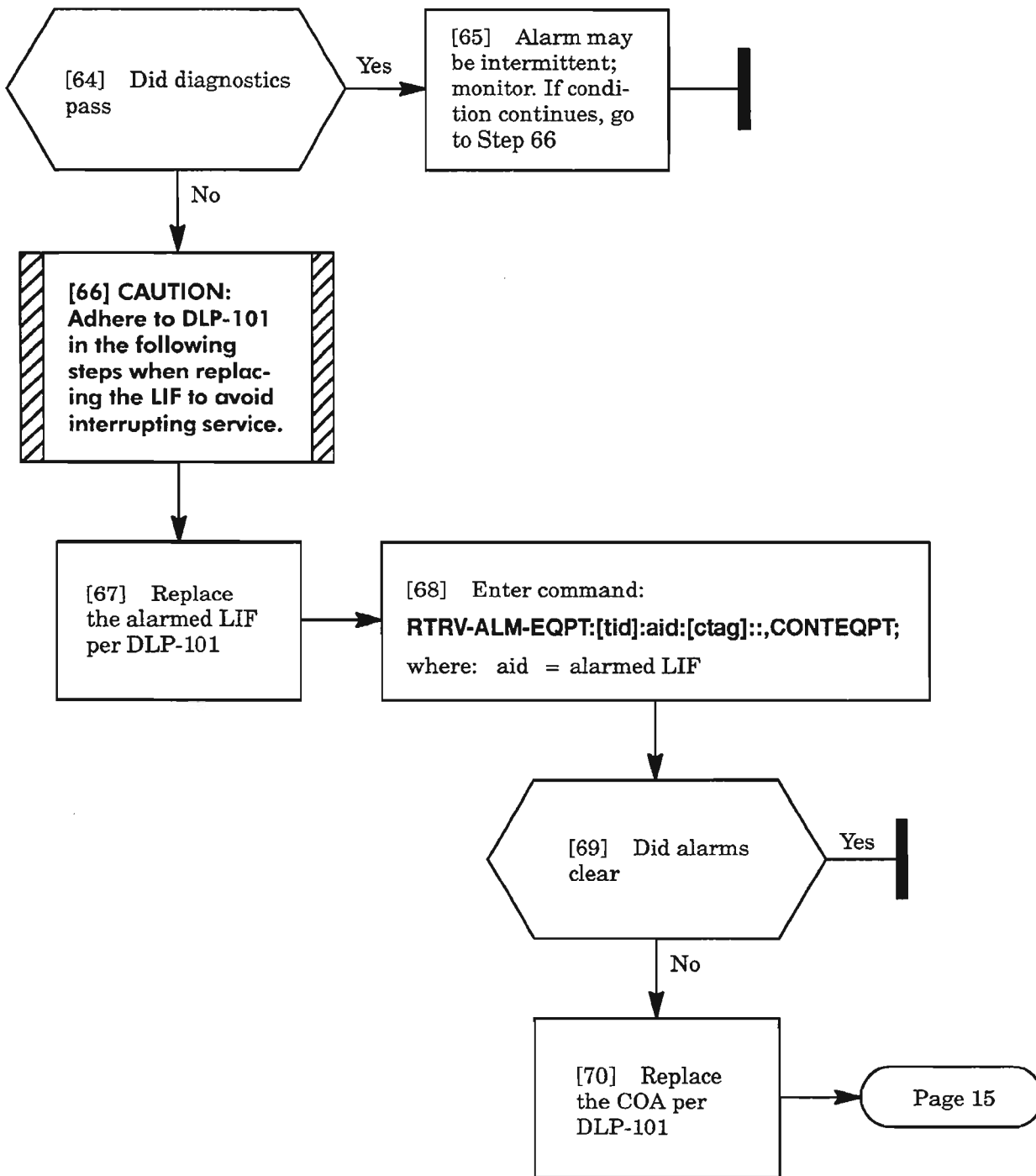
**CLEAR LIF UNIT ALARM**



# CONTEQPT

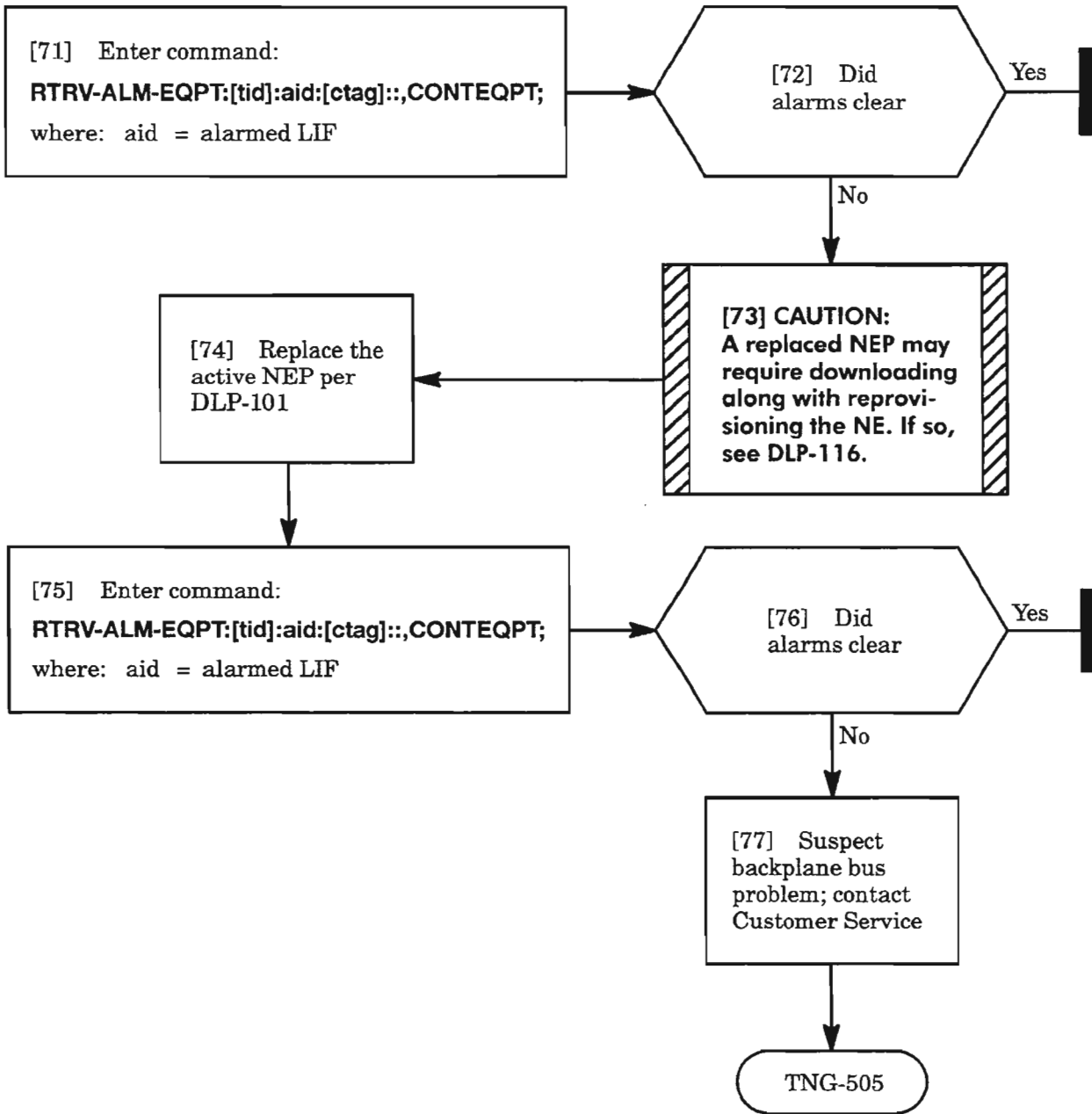


**CONTEQPT (cont)**

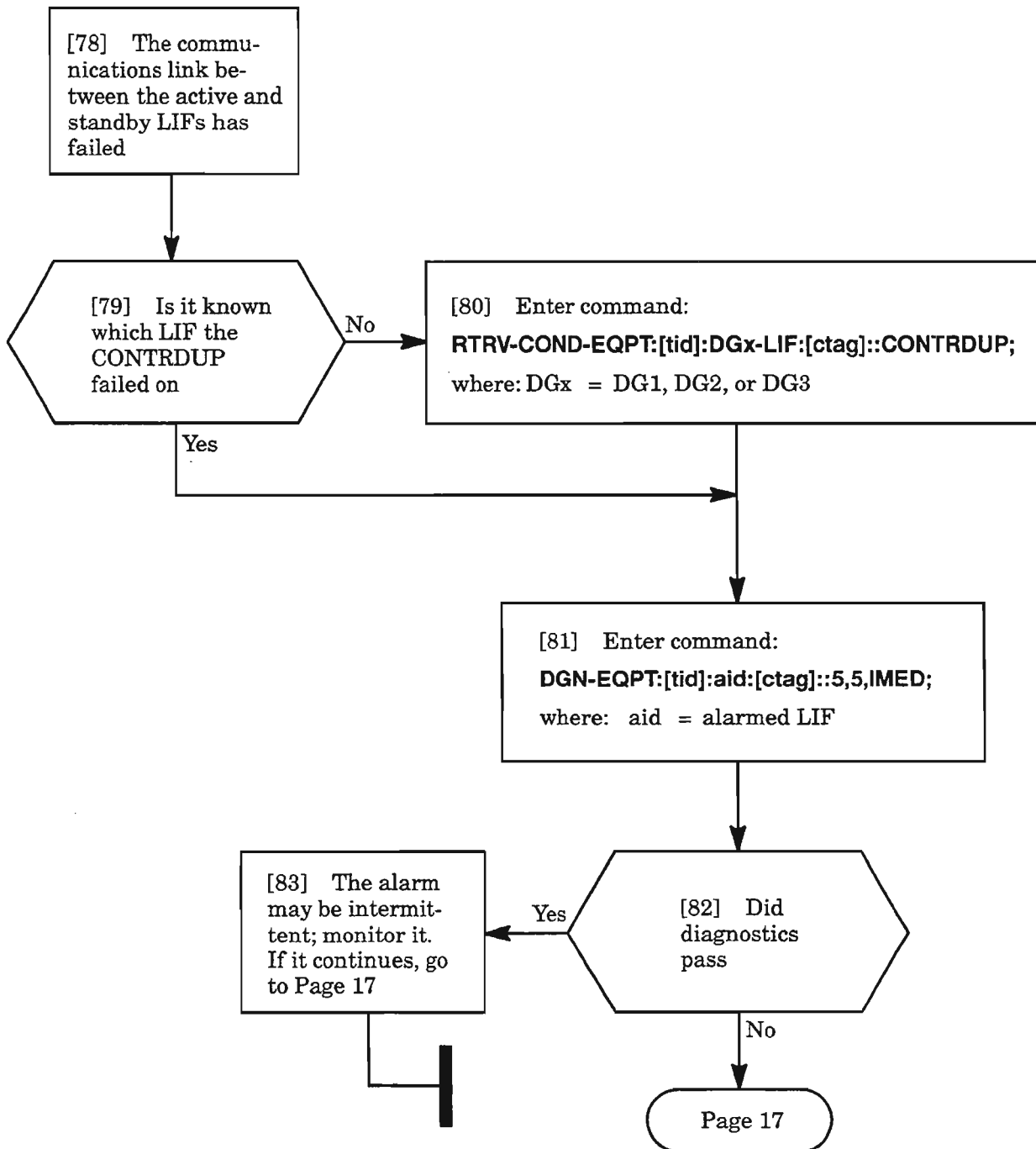


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP 042
PAGE 14 of 34	

# CONTEQPT (cont)

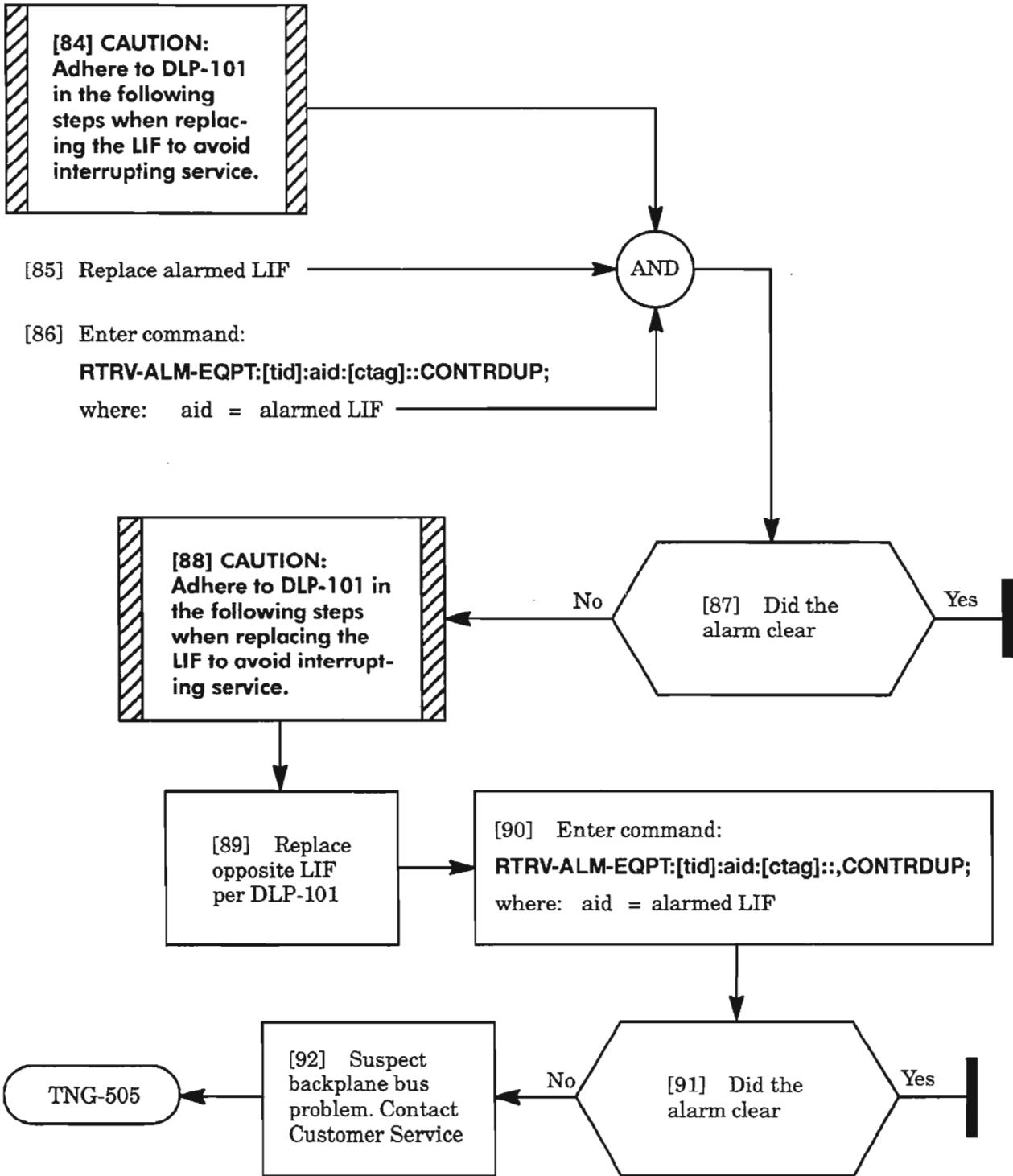


# CONTRDUP

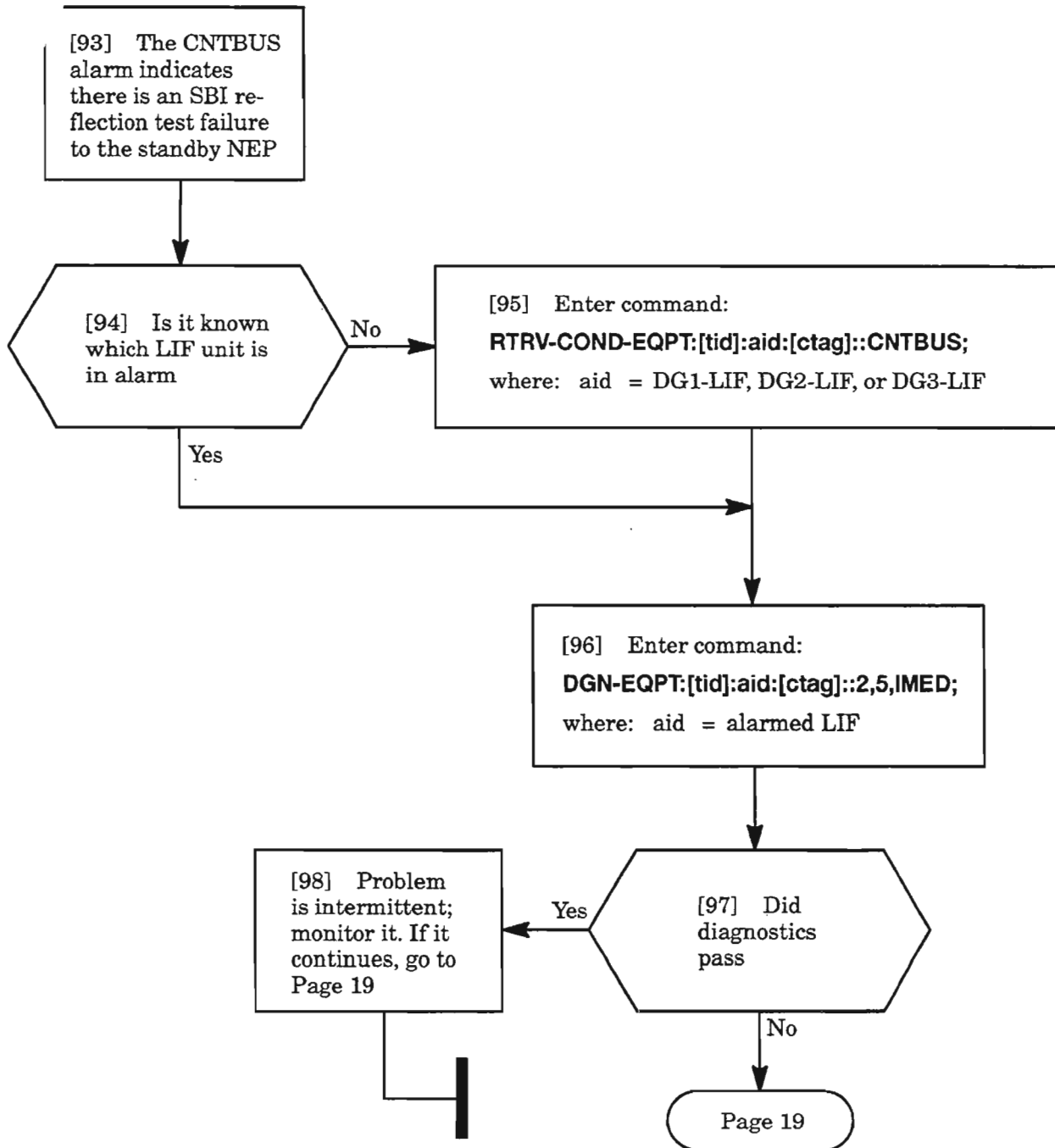


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 16 of 34	042

**CONTRDUP (cont)**



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 17 of 34	042



**CNTBUS (cont)**

**[99] CAUTION:**  
Adhere to DLP-101  
in the following  
steps when replacing  
the LIF to avoid  
interrupting service.

[100] Replace  
alarmed LIF unit  
per DLP-101

[101] Enter command:  
**RTRV-ALM-EQPT:[tid]:aid:[ctag]::CNTBUS;**  
where: aid = alarmed LIF

[103] Replace the  
LDR that is on  
the same side as  
the alarmed LIF,  
per DLP-101

[102] Did the  
alarm clear

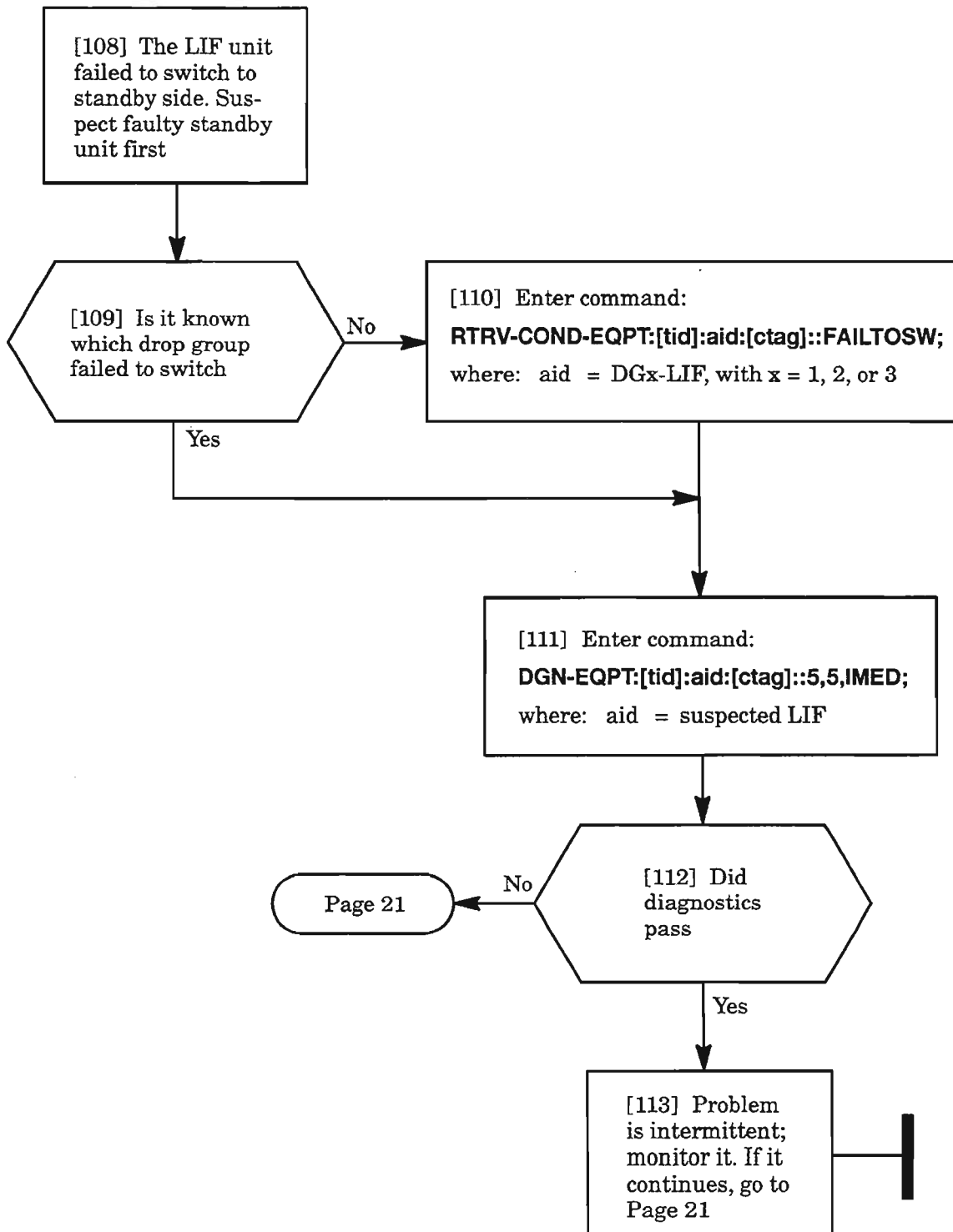
[104] Did the  
alarm clear

[105] Repeat Step  
100, then Step 103  
on the non-alarmed  
side

[106] Did the  
alarm clear

[107] Suspect  
backplane bus  
problem. Contact  
Customer Service  
(TNG-505)

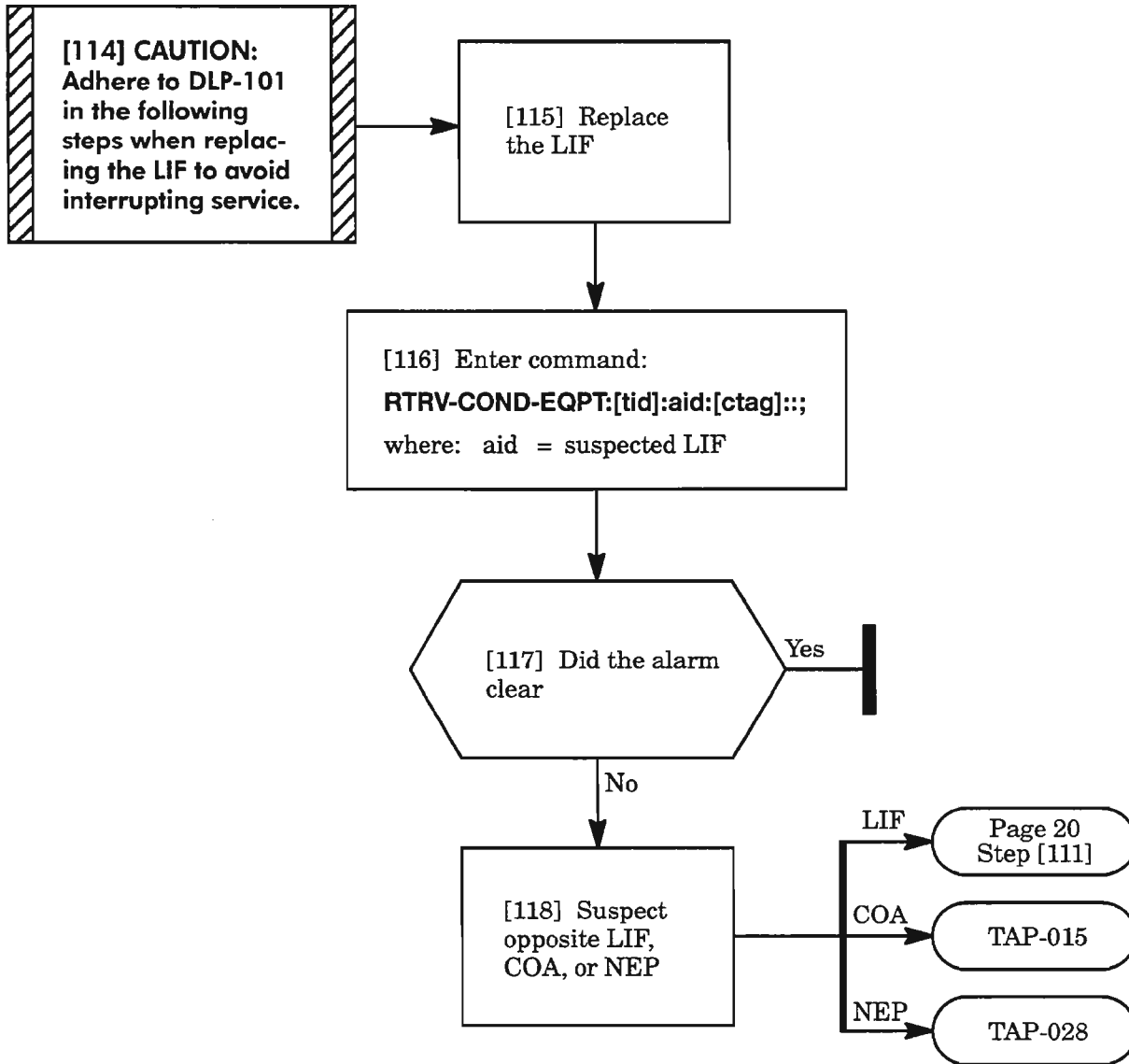
# FAILTOSW



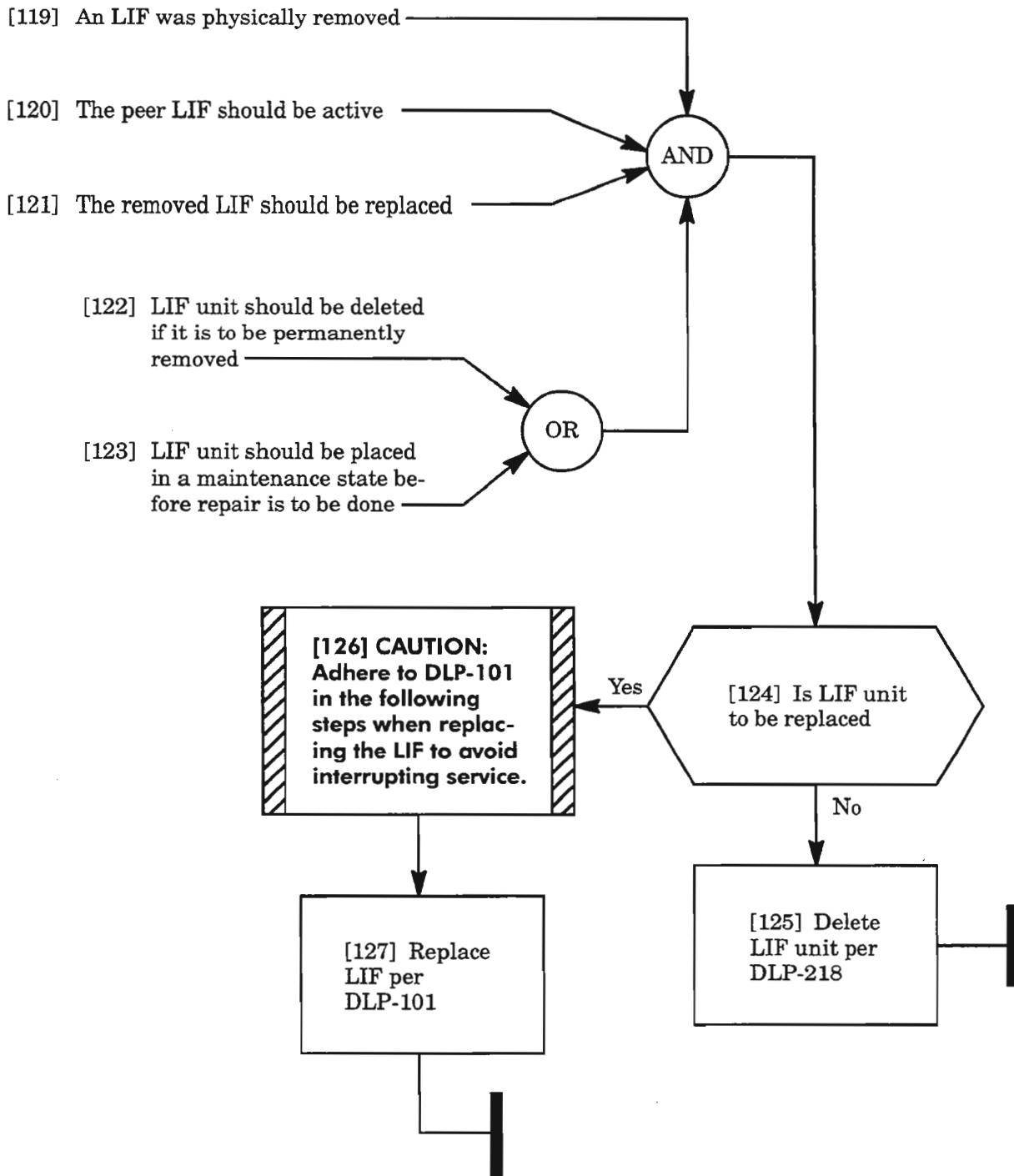
ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 20 of 34	042



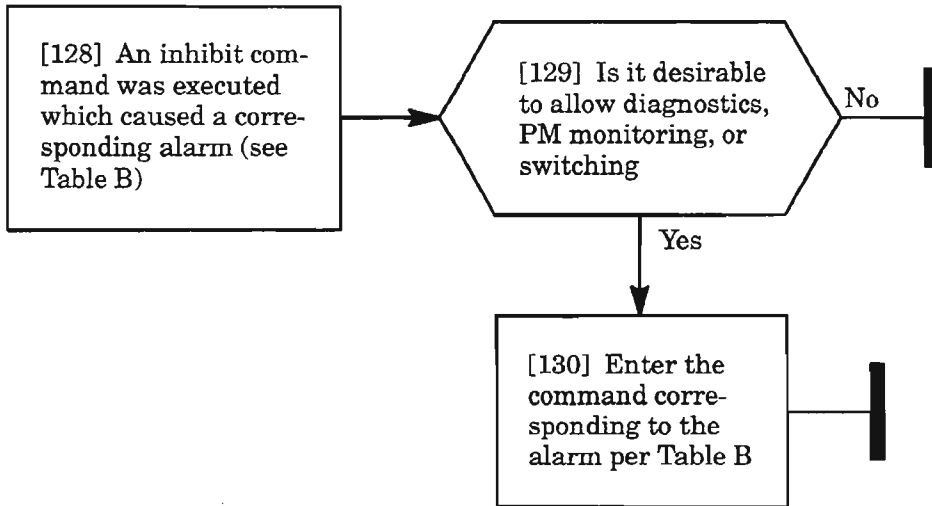
# FAILTOSW (cont)



# IMPROPRMVL



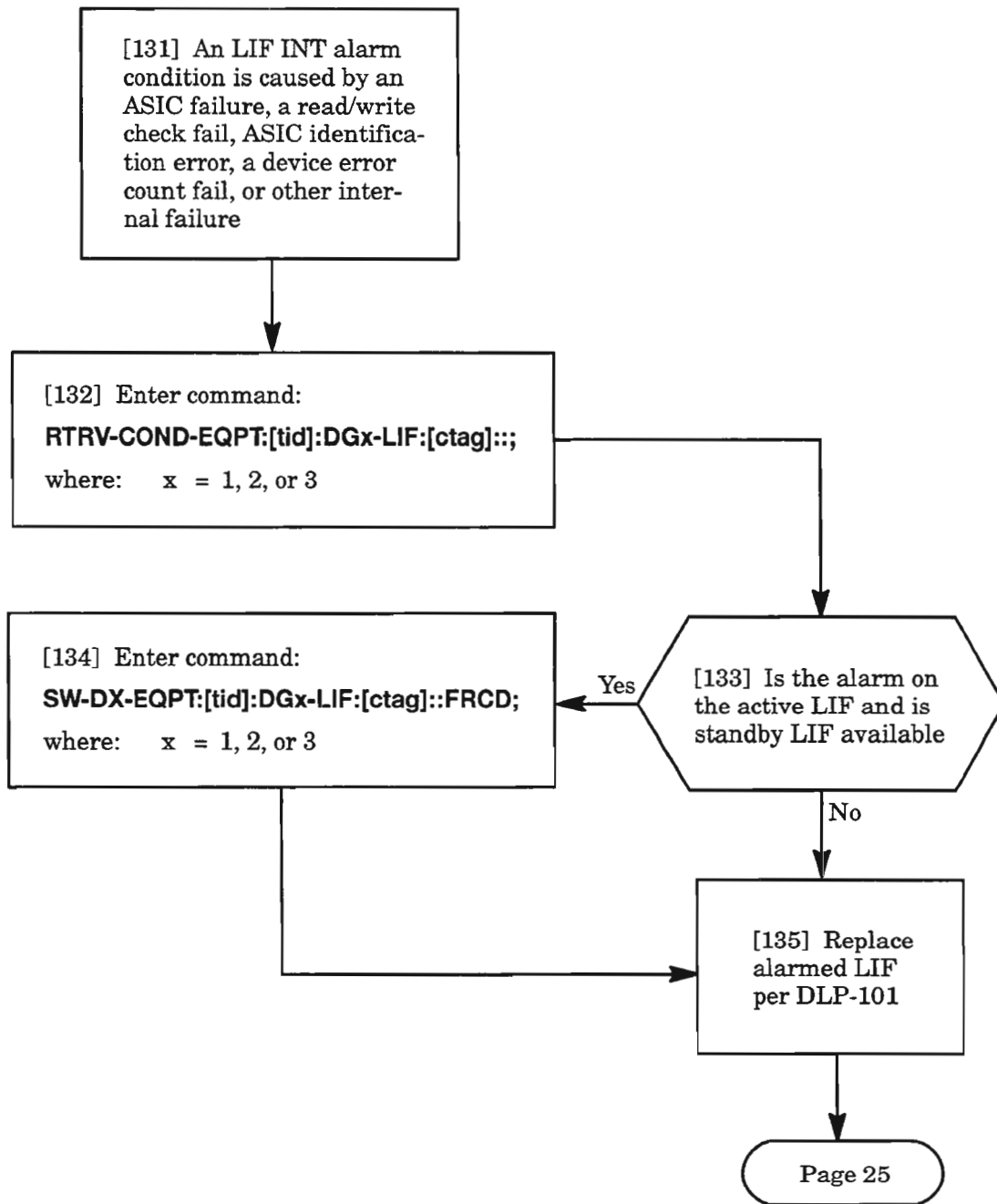
**INH DGN, INHPMREPT, INHSWDX**



**Table B.**

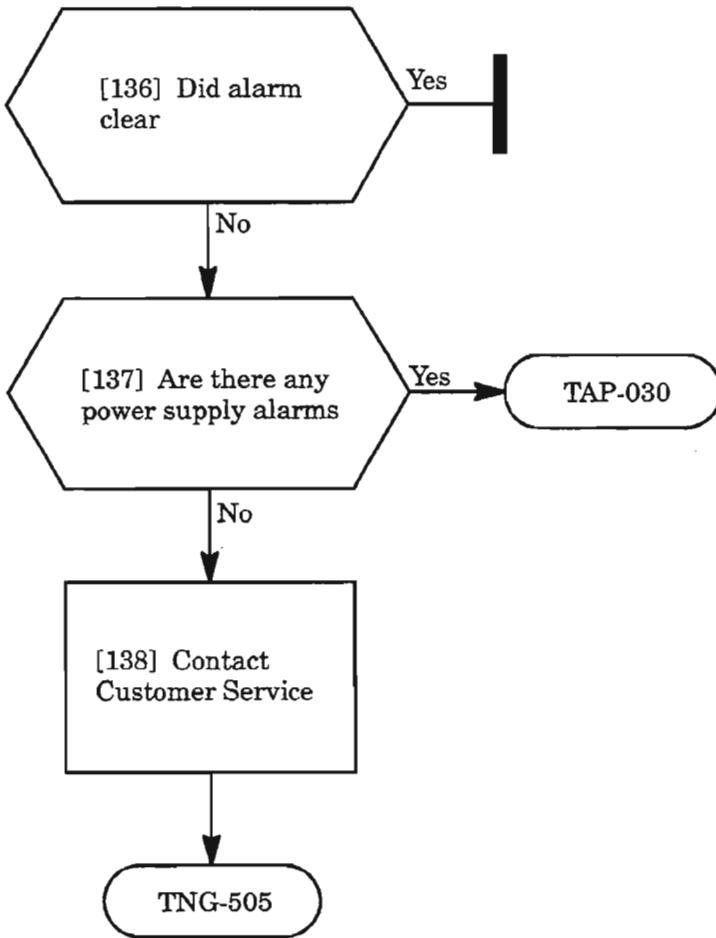
<b>ALARM</b>	<b>COMMAND</b>
INH DGN (inhibit diagnostics)	<b>ALW-DGN-EQPT:[tid]:aid:[ctag];</b> where: aid = DGx-LIF <sub>y</sub> with x = 1, 2, or 3 and y = A or B
INHPMREPT (inhibit performance monitoring reporting)	<b>ALW-PMREPT-EQPT:[tid]:aid:[ctag];</b> where: aid = DGx-LIF with x = 1, 2, or 3
INHSWDX (inhibit duplex switching)	<b>ALW-SWDX-EQPT:[tid]:aid:[ctag];</b> where: aid = DGx-LIF with x = 1, 2, or 3

# INT



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 24 of 34	042

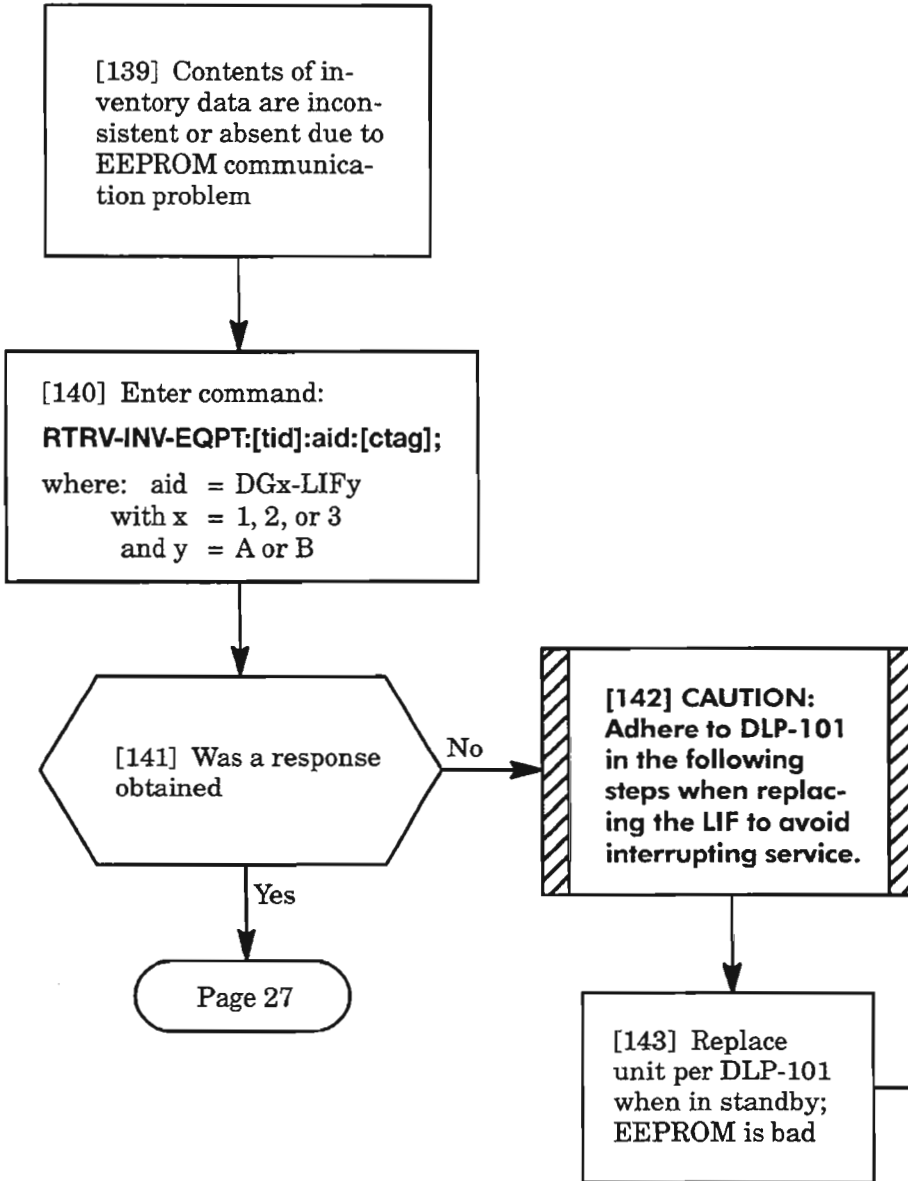
**INT (cont)**



**CLEAR LIF UNIT ALARM**

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 25 of 34	042

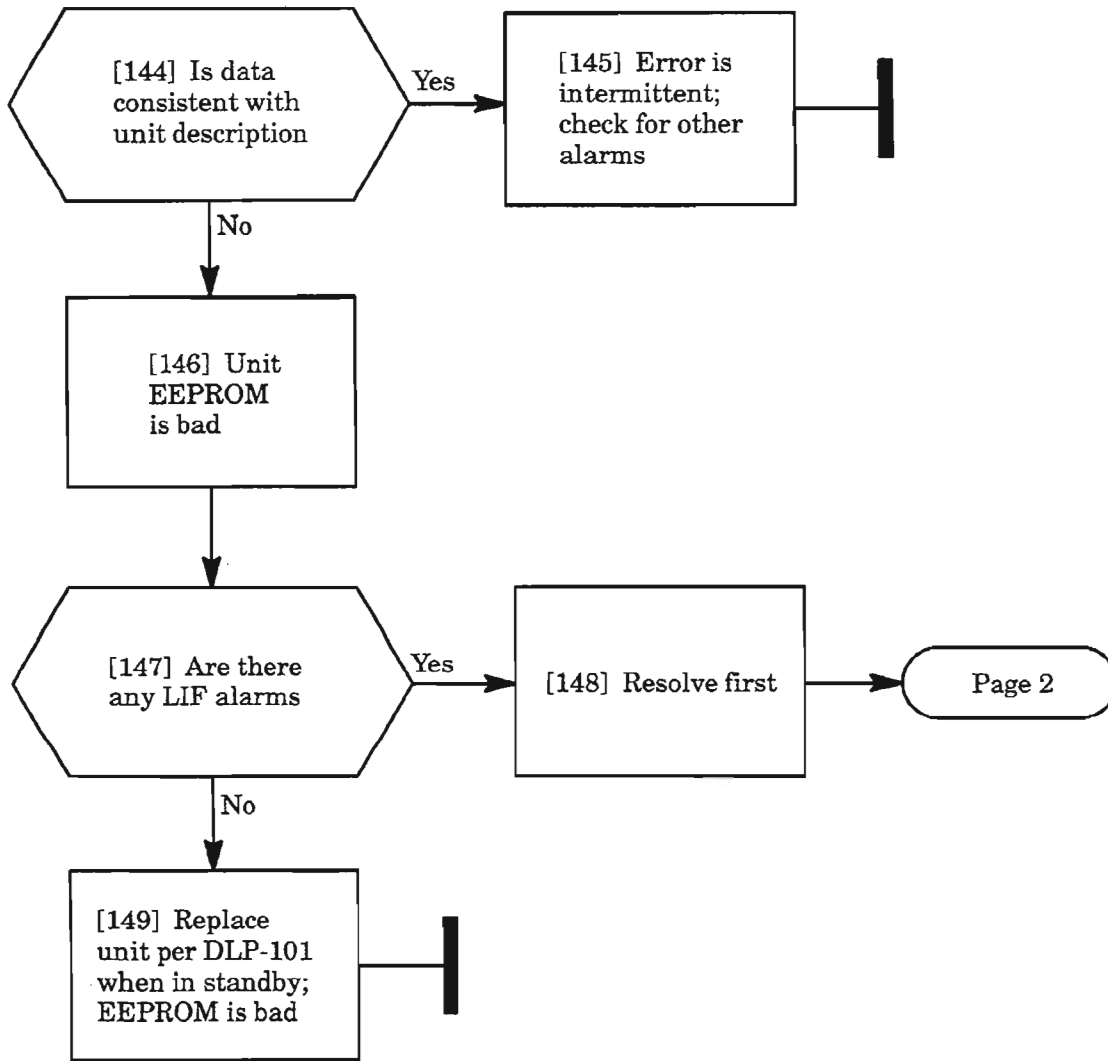
# INVERR



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 26 of 34	042

CLEAR LIF UNIT ALARM

# INVERR (cont)



CLEAR LIF UNIT ALARM

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 27 of 34	042

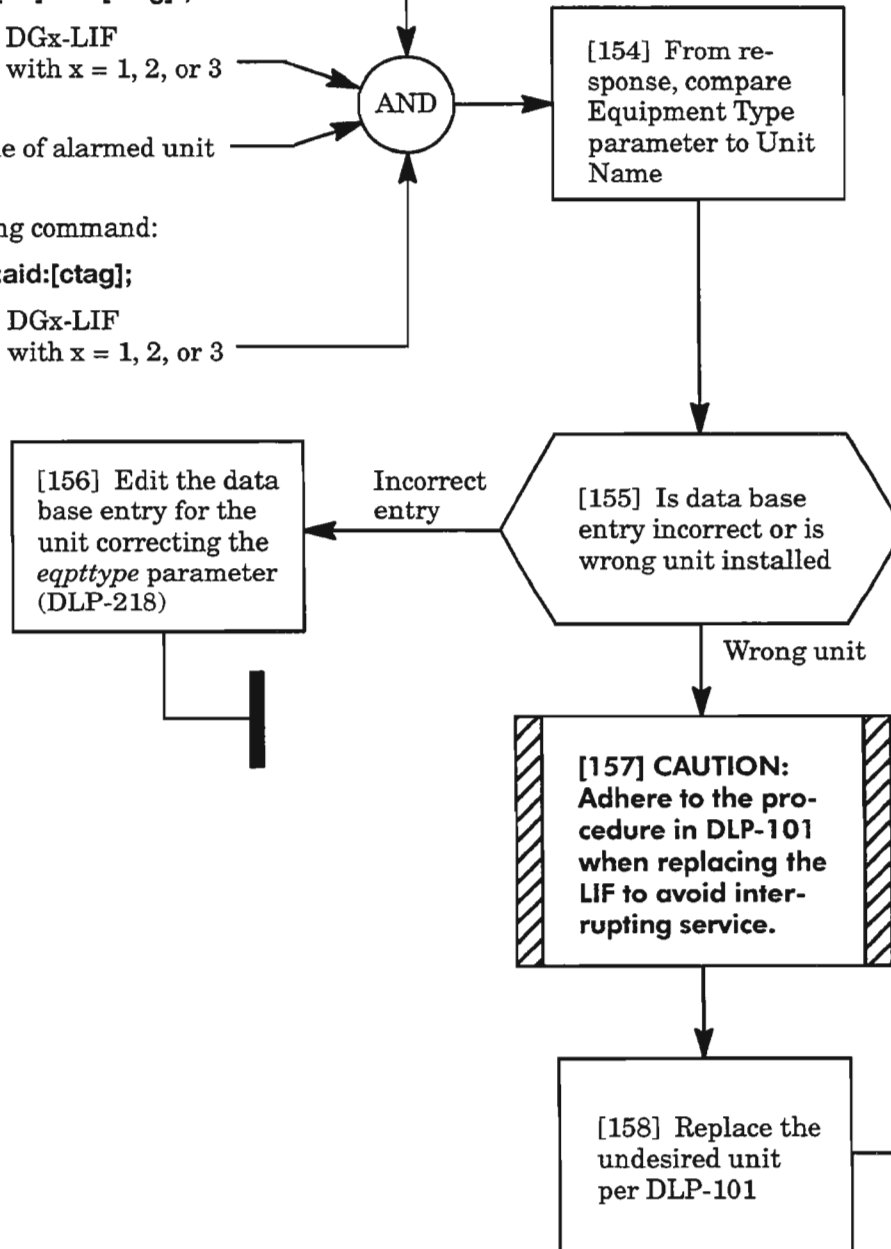
**MEA**

[150] The data base entry for the alarmed unit does not match equipment type parameter on unit EEPROM

[151] Enter the following command:  
**RTRV-INV-EQPT:[tid]:aid:[ctag];;**  
 where: aid = DGx-LIF  
           with x = 1, 2, or 3

[152] Record Unit Name of alarmed unit

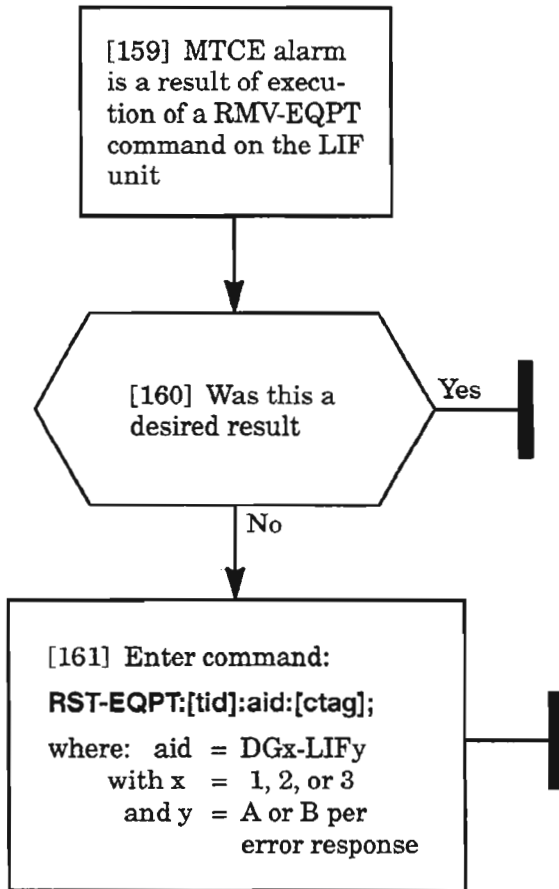
[153] Enter the following command:  
**RTRV-EQPT:[tid]:aid:[ctag];**  
 where: aid = DGx-LIF  
           with x = 1, 2, or 3



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 28 of 34	042



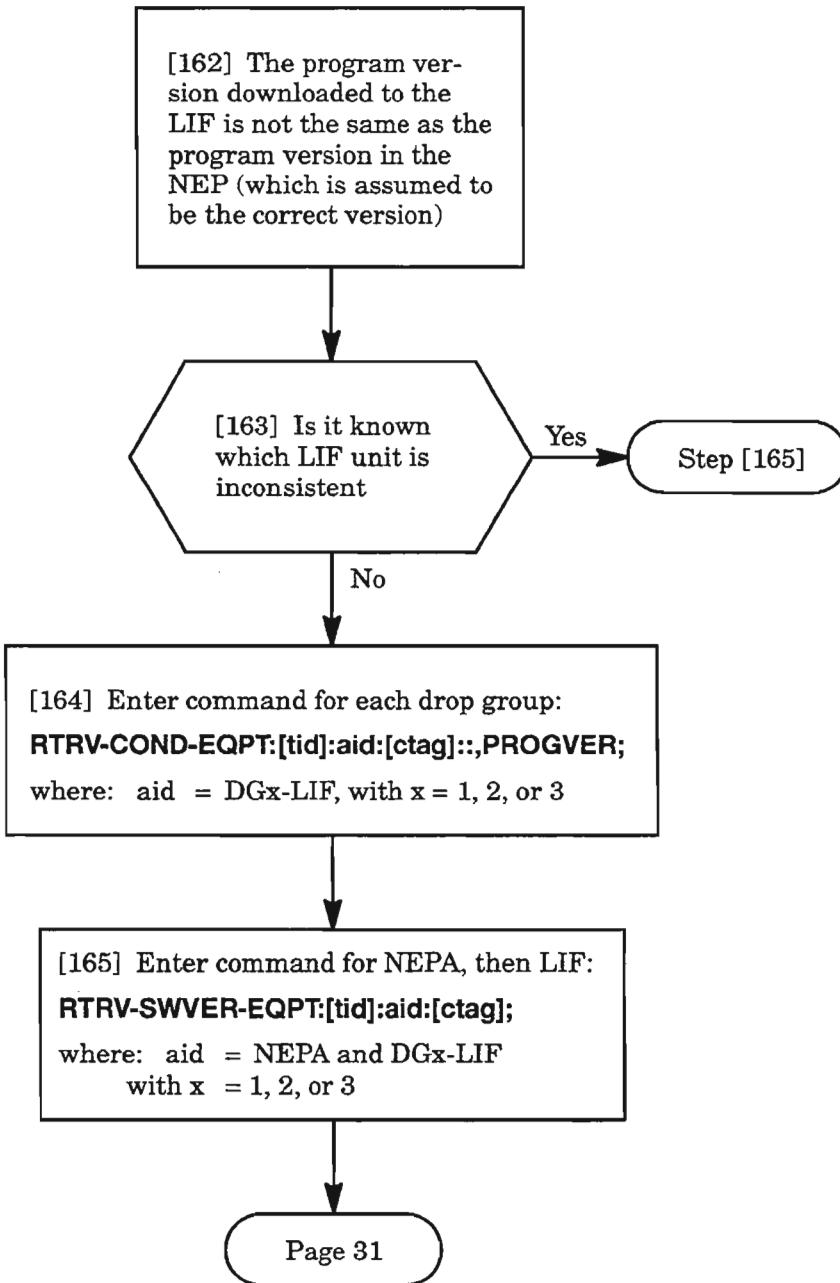
# MTCE



## CLEAR LIF UNIT ALARM

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 29 of 34	042

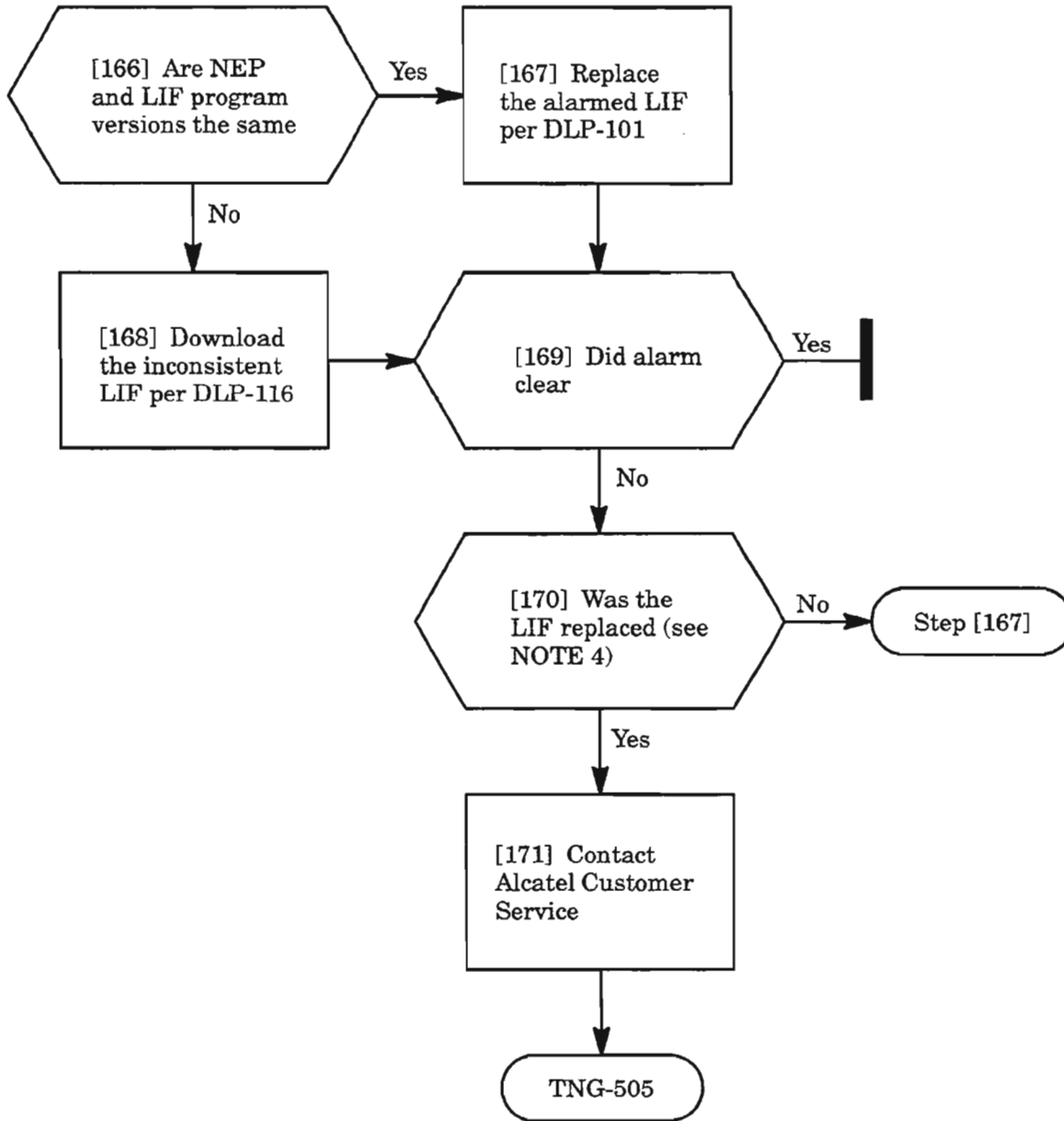
# PROGVER



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 30 of 34	042

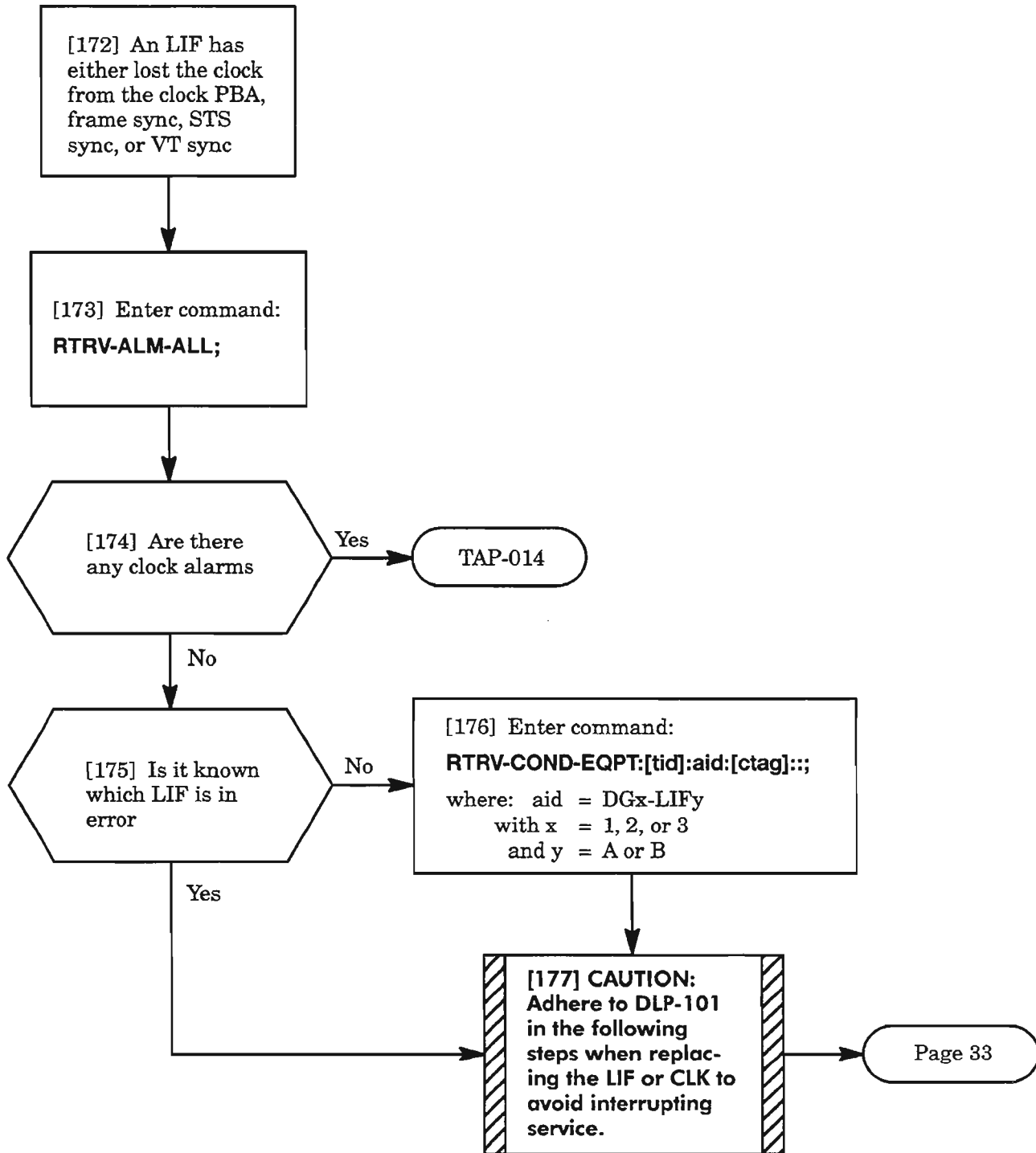
CLEAR LIF UNIT ALARM

**PROGVER (cont)**



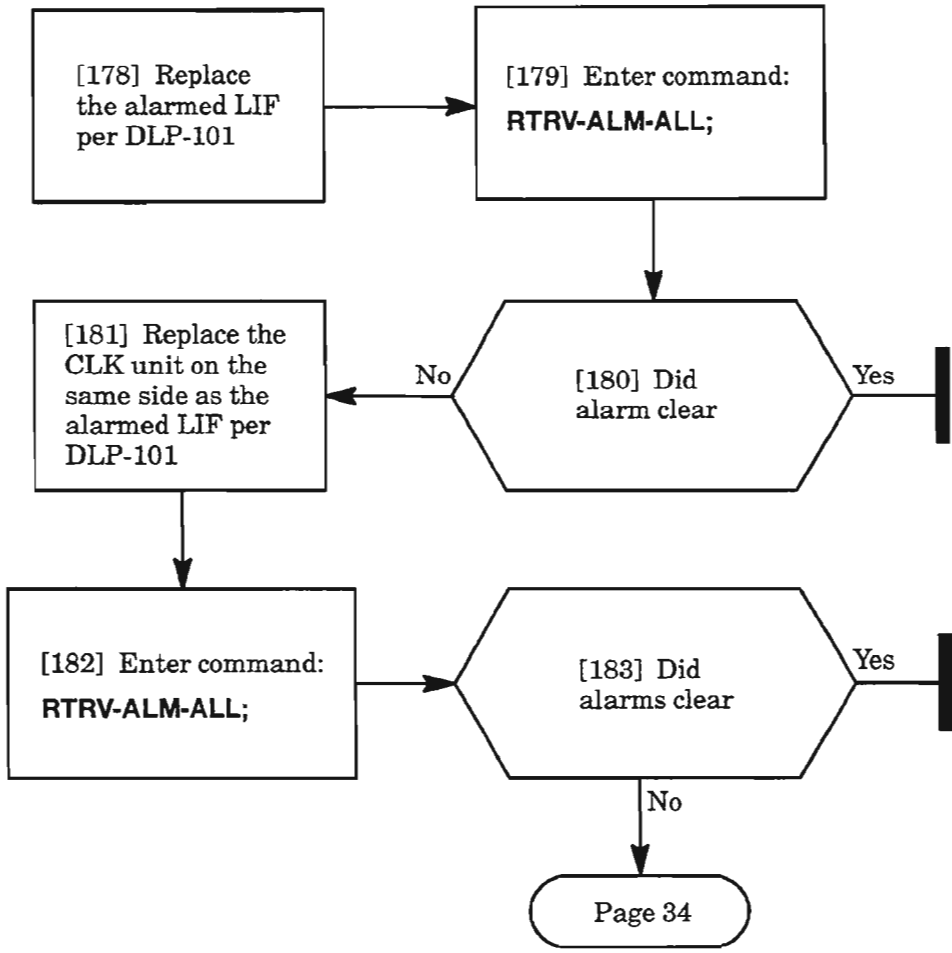
**NOTE: 4.** *If LIF was replaced and downloaded with the correct version, then the NEP may be the wrong version. Verify records.*

# SYNCCLK

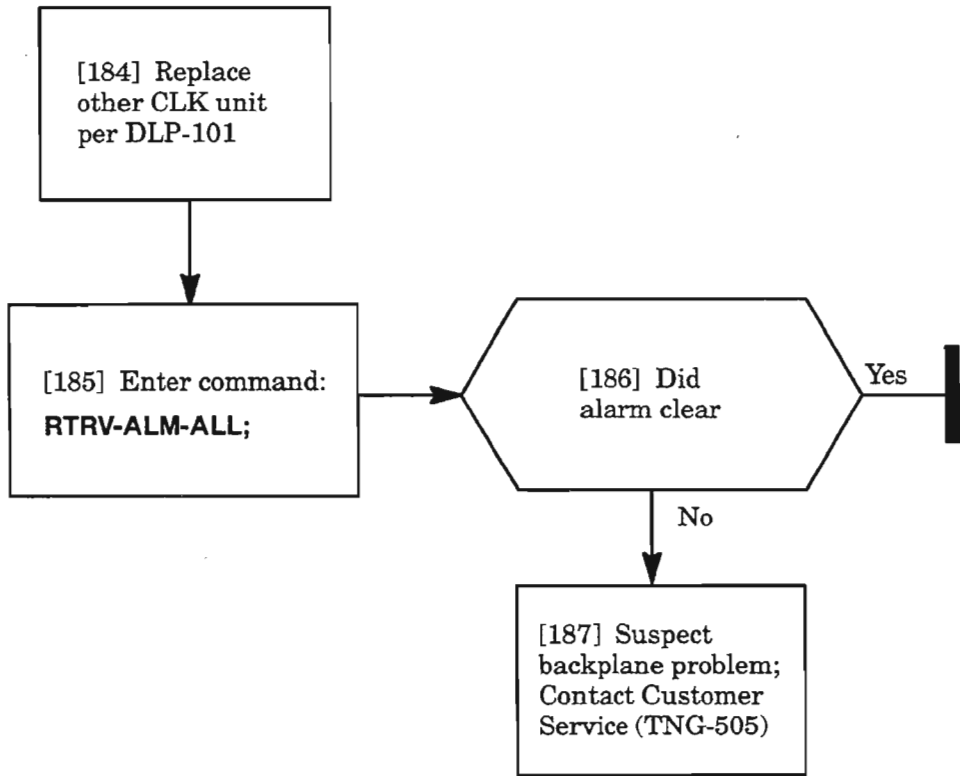


ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 32 of 34	042

# SYNCCLK (cont)

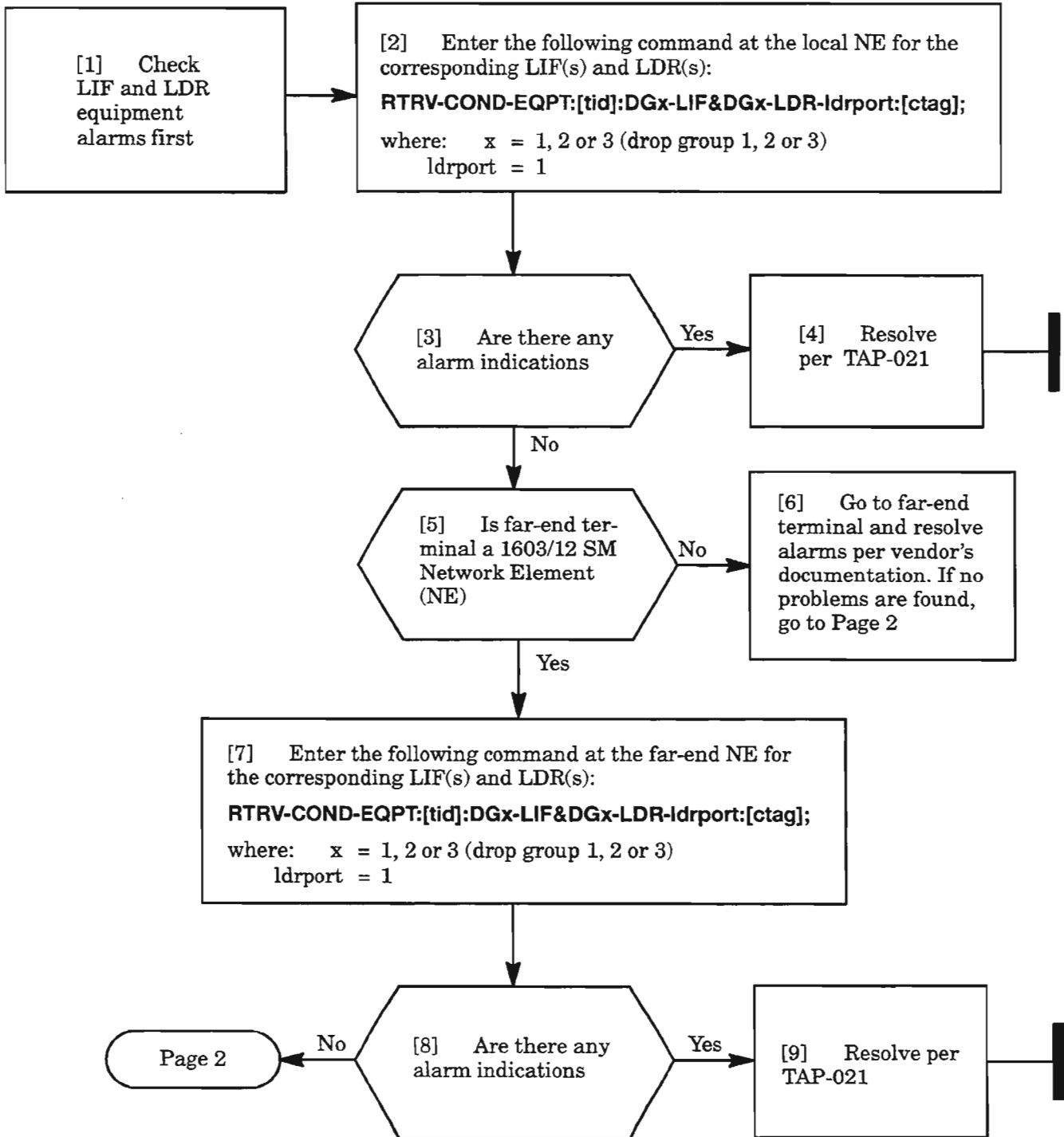


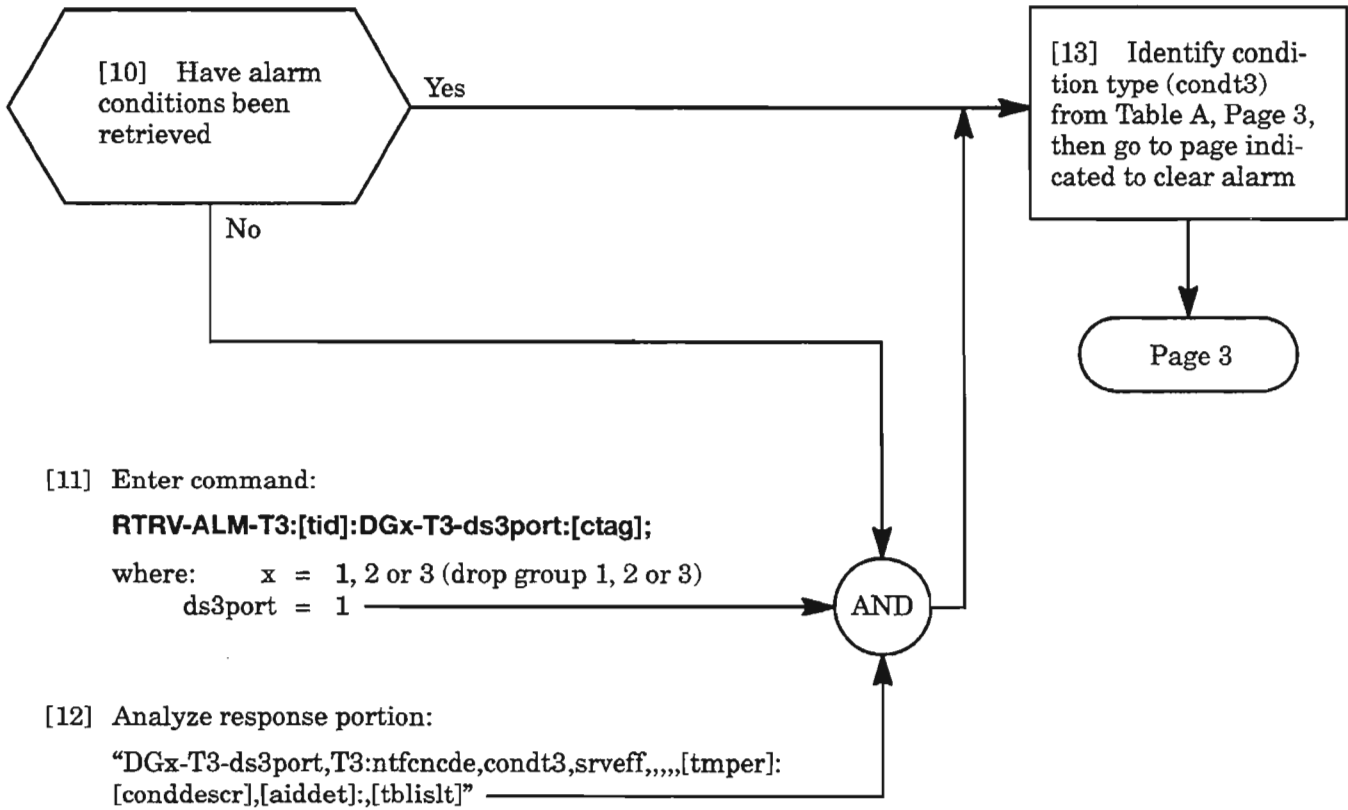
# SYNCCLK (cont)



ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 34 of 34	042

**CLEAR LIF UNIT ALARM**





ISSUE 1	JULY 1994
ALCL 363-203-502	TAP
PAGE 2 of 17	043



**Table A. Conditions**

<b>CONDITION/ALARM</b>	<b>DEFINITION</b>	<b>PAGE</b>
BERL-HT	Bit Error Rate Line – High Threshold crossed	4
INHMPREPT	Inhibit all scheduled PM reports	8
LOS	Loss of signal	9
MTCE	Removed from service for maintenance	13
T-BPV	Threshold violation for bipolar violations	14
T-ESL	Threshold violation for PM line errored seconds	14
T-SESL	Threshold violation for PM line severely errored seconds	14

**CLEAR T3 (DS3) ALARM**

# BERL-HT

[14] The T3 facility has detected a BERL-HT; the number of bits in error to the number of bits transmitted has degraded to the point of exceeding a set threshold,  $10^{-4}$  to  $10^{-9}$  (signal failure is imminent)

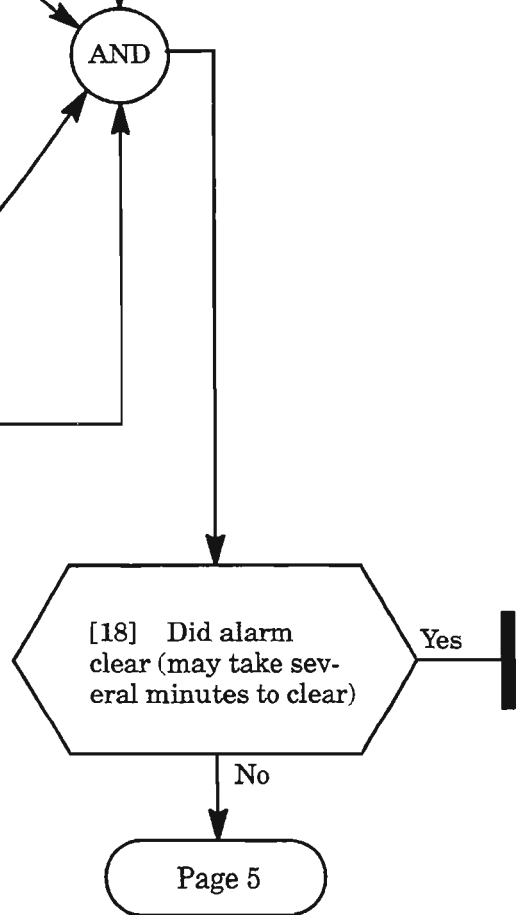
[15] Check coax cable connections at 1603/12 SM backplane and cross-connection panel. Correct connections, if necessary

[16] If connections are correct, **at far-end facility**, retrieve DS3 port parameters by entering the command:

**RTRV-T3:[tid]:DGx-T3-ds3port;**

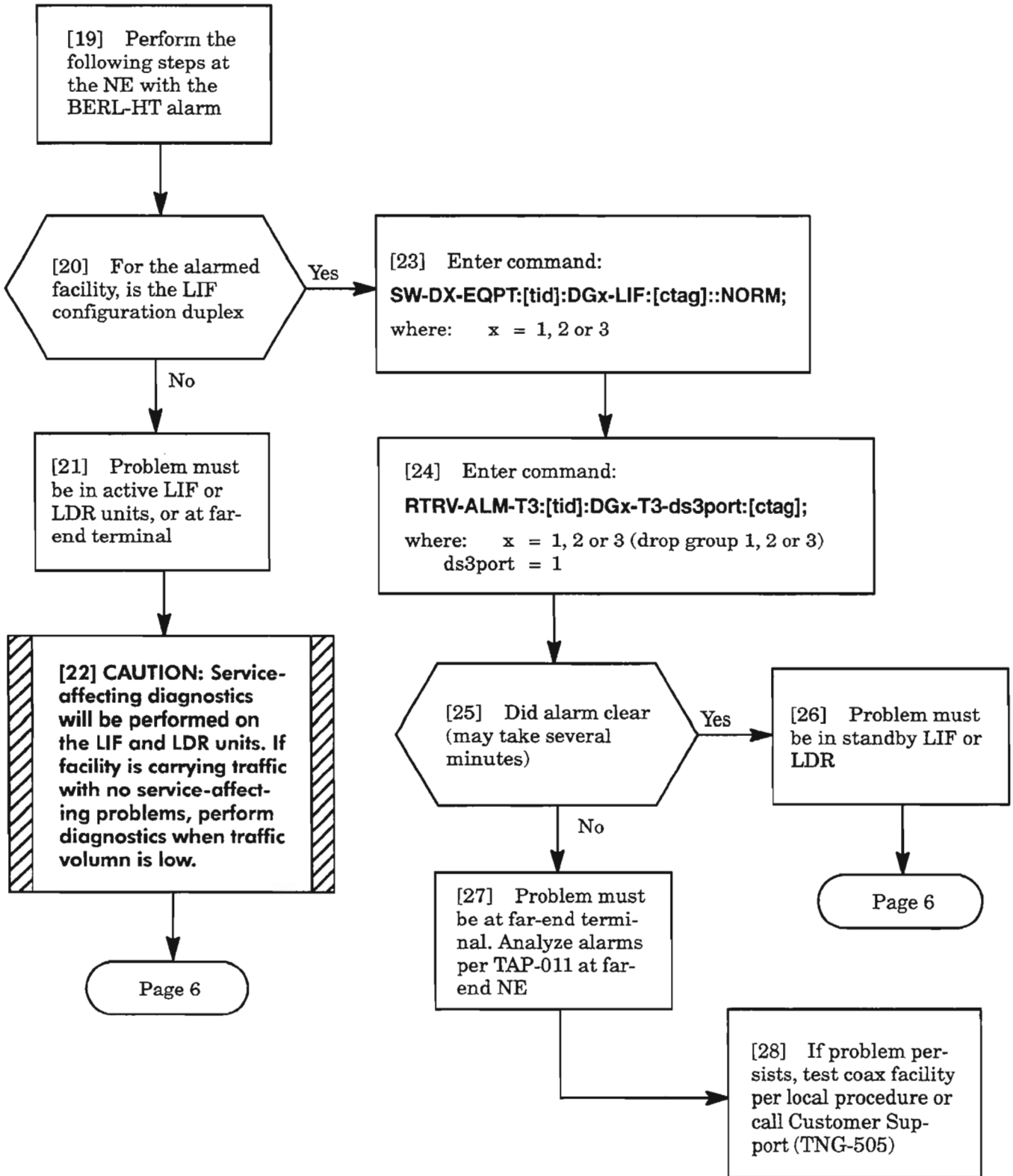
where: x = 1, 2 or 3 (drop group 1, 2 or 3)  
 ds3port = 1

[17] From the response, verify that LINEBLDOUT is enabled or disabled per office records (see DLP-224 for recommended setting based on cable types). If LINEBLDOUT parameter needs to be changed, edit the port per DLP-224



ISSUE 1	JULY 1994
ALCL 363-203-502	TAP
PAGE 4 of 17	043

**BERL-HT (cont)**



**BERL-HT (cont)**

**[29] CAUTION:** The following steps are service-affecting if performed on the active LIF. Perform the following on standby side if LIF and LDR are duplex.

[30] Enter the following commands for the standby LIF (duplex) or active LIF (simplex):

**RMV-EQPT:[tid]:DGx-lifab:[ctag];**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

[31] Enter command:

**DGN-EQPT;:[tid]:DGx-lifab:[ctag]::12,5,IMED;**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

[32] Enter command:

**RST-EQPT:[tid]:DGx-lifab:[ctag];**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

AND

[99] Did diagnostics pass

Page 7

Yes

No

**[34] CAUTION:** Adhere to the procedure in DLP-101 when replacing the LIF to avoid service interruption.

[35] Replace LIF per DLP-101

ISSUE 1	JULY 1994
ALCL 363-203-502	TAP
PAGE 6 of 17	043

**CLEAR T3 (DS3) ALARM**

**BERL-HT (cont)**

**[36] CAUTION:** The following steps are service-affecting if performed on the active LDR. Perform the following on standby side if LIF and LDR are duplex.

[37] Enter the following commands for the standby LDR (duplex) or active LDR (simplex):

**RMV-EQPT:[tid]:DGx-ldrab-ldrport:[ctag];**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

[38] Enter command:

**DGN-EQPT;[tid]:DGx-ldrab-ldrport:[ctag]::4,5,IMED;**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

[39] Enter command:

**RST-EQPT:[tid]:DGx-ldrab-ldrport:[ctag];**

where: x = 1, 2 or 3  
 ldrab = LDRA or LDRB  
 ldrport = 1

AND

Step [27]  
Page 5

Yes

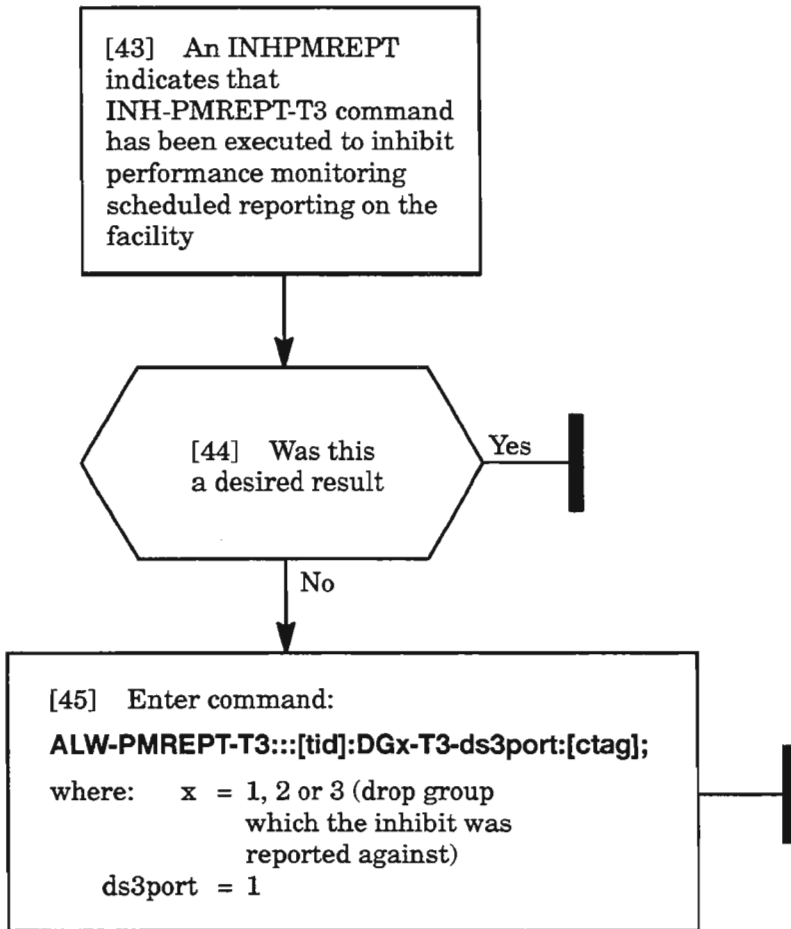
[40] Did diagnostics pass

No

**[41] CAUTION:** Adhere to the procedure in DLP-101 when replacing the LDR to avoid service interruption.

[42] Replace LDR per DLP-101

# INHPMREPT



ISSUE 1	JULY 1994
ALCL 363-203-502	TAP
PAGE 8 of 17	043

CLEAR T3 (DS3) ALARM

# LOS

[46] A unit has detected an LOS alarm. The LOS (Loss of Signal) indicates loss of a receive signal, an all zeros pattern for over 100 ms, or that clock recovery is lost. A poor coax connection may cause this error

[47] Check coax cable connections at 1603/12 SM backplane and cross-connection panel. Correct connections, if necessary

[48] If connections are correct, **at the far-end terminal**, retrieve EC1 port parameters by entering the command:

**RTRV-T3:[tid]:DGx-T3-ds3port;**

where: x = 1, 2 or 3 (drop group 1, 2 or 3)  
ds3port = 1

[49] From the response, verify that LINEBLDOUT is enabled or disabled per office records (see DLP-224 for recommended setting based on cable types). If LINEBLDOUT parameter needs to be changed, edit the port per DLP-224

AND

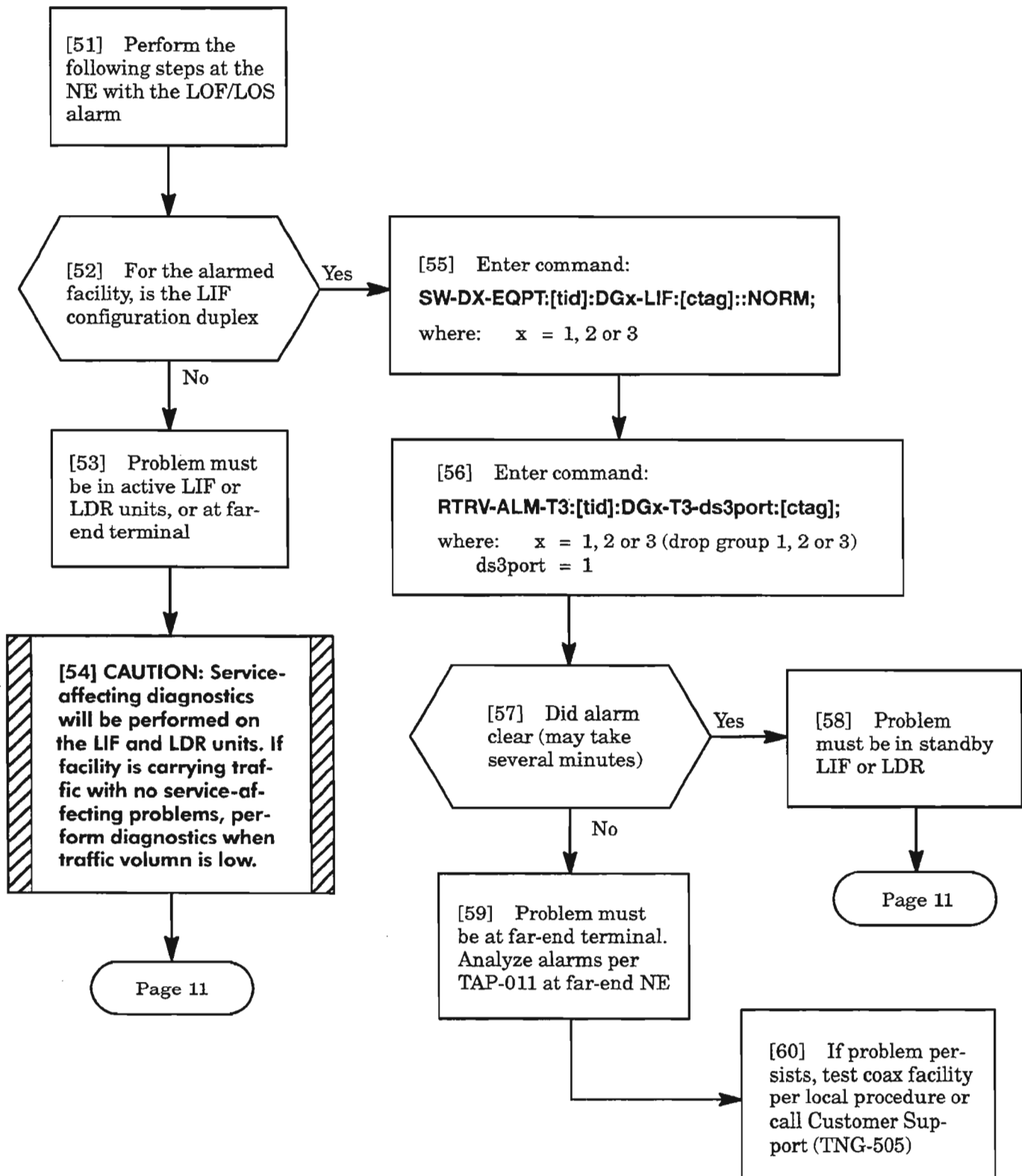
[50] Did alarm clear (may take several minutes to clear)

Yes

No

Page 10

# LOS (cont)



ISSUE 1	JULY 1994
ALCL 363-203-502	TAP 043
PAGE 10 of 17	



**LOS (cont)**

**[61] CAUTION:** The following steps are service-affecting if performed on the active LIF. Perform the following on standby side if LIF and LDR are duplex.

[62] Enter the following commands for the standby LIF (duplex) or active LIF (simplex):

**RMV-EQPT:[tid]:DGx-lifab:[ctag];**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

[63] Enter command:

**DGN-EQPT;:[tid]:DGx-lifab:[ctag]::12,5,IMED;**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB

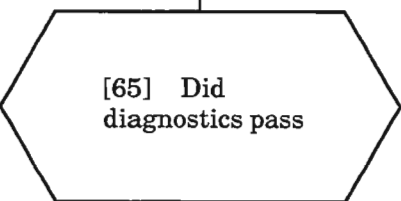
[64] Enter command:

**RST-EQPT:[tid]:DGx-lifab:[ctag];**

where: x = 1, 2 or 3  
lifab = LIFA or LIFB



Page 12



**[66] CAUTION:** Adhere to the procedure in DLP-101 when replacing the LIF to avoid service interruption.

[67] Replace LIF per DLP-101

**LOS (cont)**

**[68] CAUTION:** The following steps are service-affecting if performed on the active LDR. Perform the following on standby side if LIF and LDR are duplex.

[69] Enter the following commands for the standby LDR (duplex) or active LDR (simplex):

**RMV-EQPT:[tid]:DGx-ldrab-ldrport:[ctag];**

where:    x = 1, 2 or 3  
           ldrab = LDRA or LDRB  
           ldrport = 1

[70] Enter command:

**DGN-EQPT;:[tid]:DGx-ldrab-ldrport:[ctag]::4,5,IMED;**

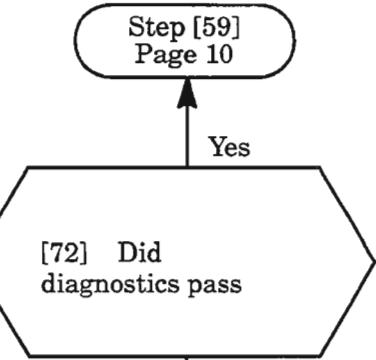
where:    x = 1, 2 or 3  
           ldrab = LDRA or LDRB  
           ldrport = 1

[71] Enter command:

**RST-EQPT:[tid]:DGx-ldrab-ldrport:[ctag];**

where:    x = 1, 2 or 3  
           ldrab = LDRA or LDRB  
           ldrport = 1

AND

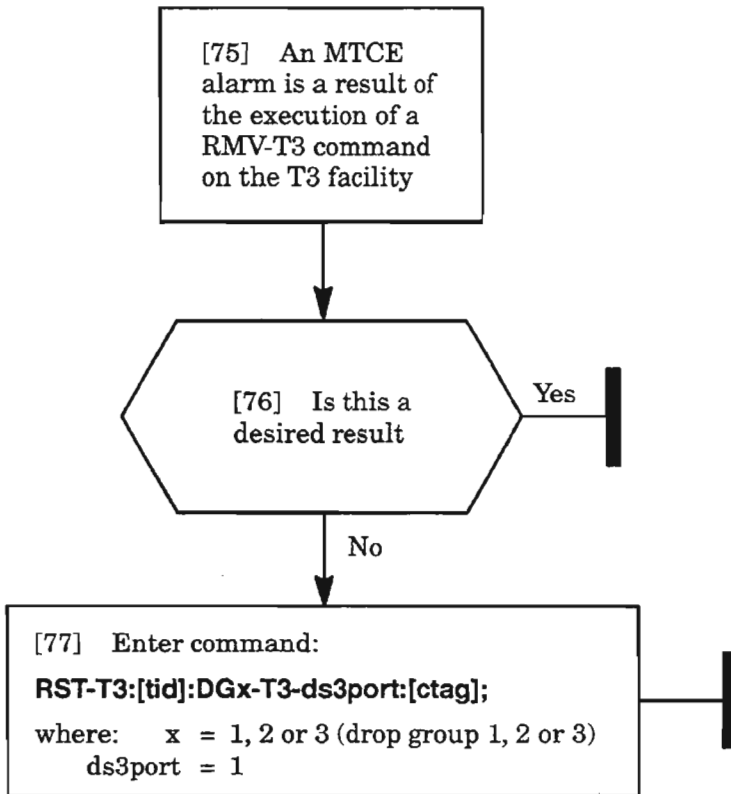


**[73] CAUTION:** Adhere to the procedure in DLP-101 when replacing the LDR to avoid service interruption.

[74] Replace LDR per DLP-101

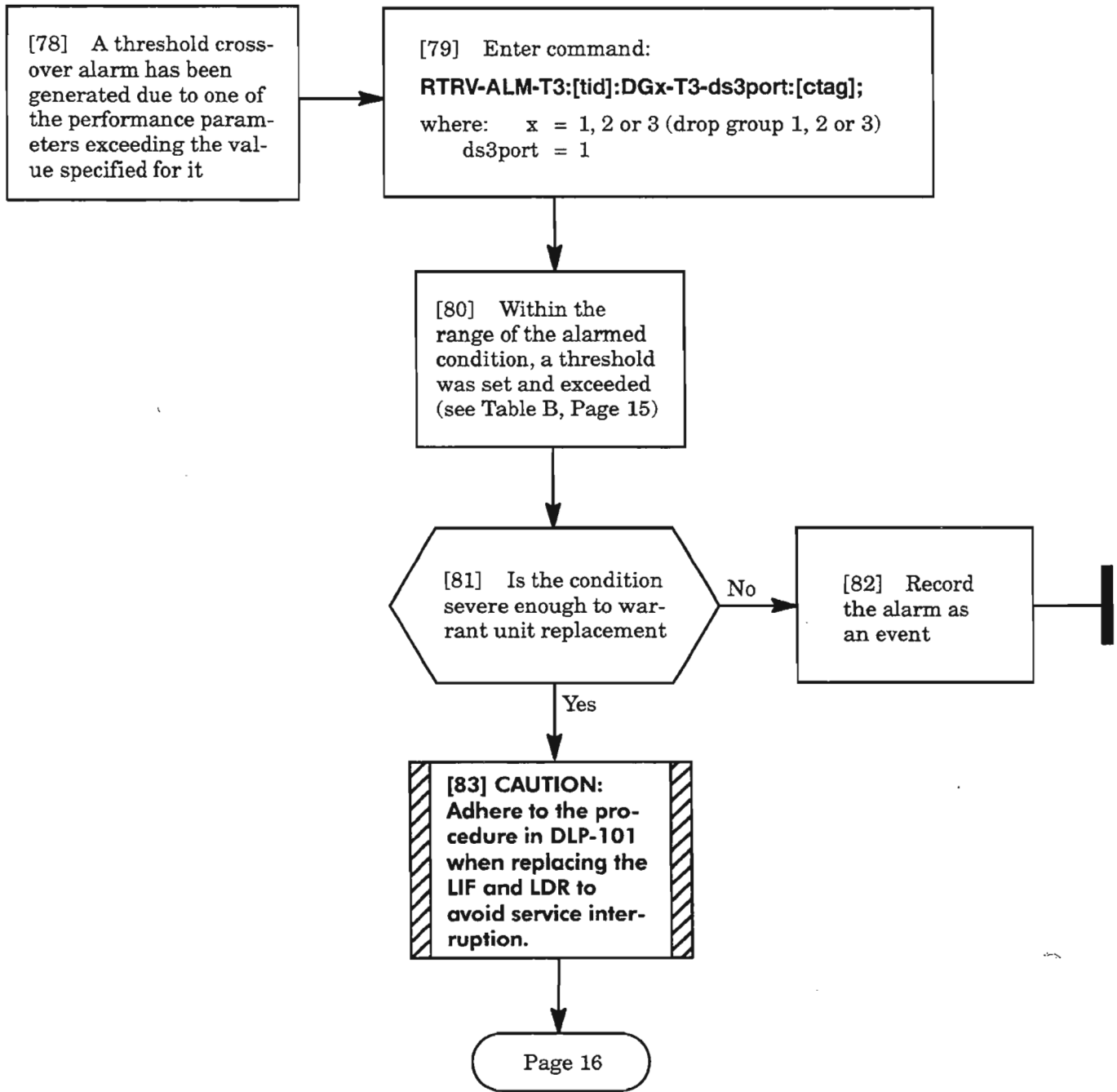
ISSUE 1	JULY 1994
ALCL 363-203-502	TAP
PAGE 12 of 17	043

# MTCE



## CLEAR T3 (DS3) ALARM

ISSUE 1	JULY 1994
ALCL 363-203-502	TAP
PAGE 13 of 17	043



**Table B. Parameter Ranges**

<b>MONITOR TYPE</b>	<b>DEFAULT</b>		<b>RANGE</b>	<b>DESCRIPTION</b>
<b>MONITOR TYPE</b>	<b>15-MIN</b>	<b>1-DAY</b>	<b>RANGE</b>	<b>DESCRIPTION</b>
BERL-HT	4	4	4...9	Bit Error Ratio Line – high threshold (SFBER)
BPV	387	3865	1...4,294,967,295	Bipolar violations
ESL	25	250	1...65535	Line Errored Seconds
SESL	4	40	1...65535	Line Severely Errored Seconds
DSESL	44	44	1...65535	Number of coding violations to make one SESL

**[84] CAUTION:** The following steps are service-affecting if performed on the active LIF or LDR. Perform the following on standby side if LIF and LDR are duplex.

[85] Replace standby (duplex) or active (simplex) LIF unit per DLP-101

[86] Enter command:  
**RTRV-COND-T3:[tid]:DGx-T3-ds3port:[ctag];**  
where: x = 1, 2 or 3  
ds3port = 1

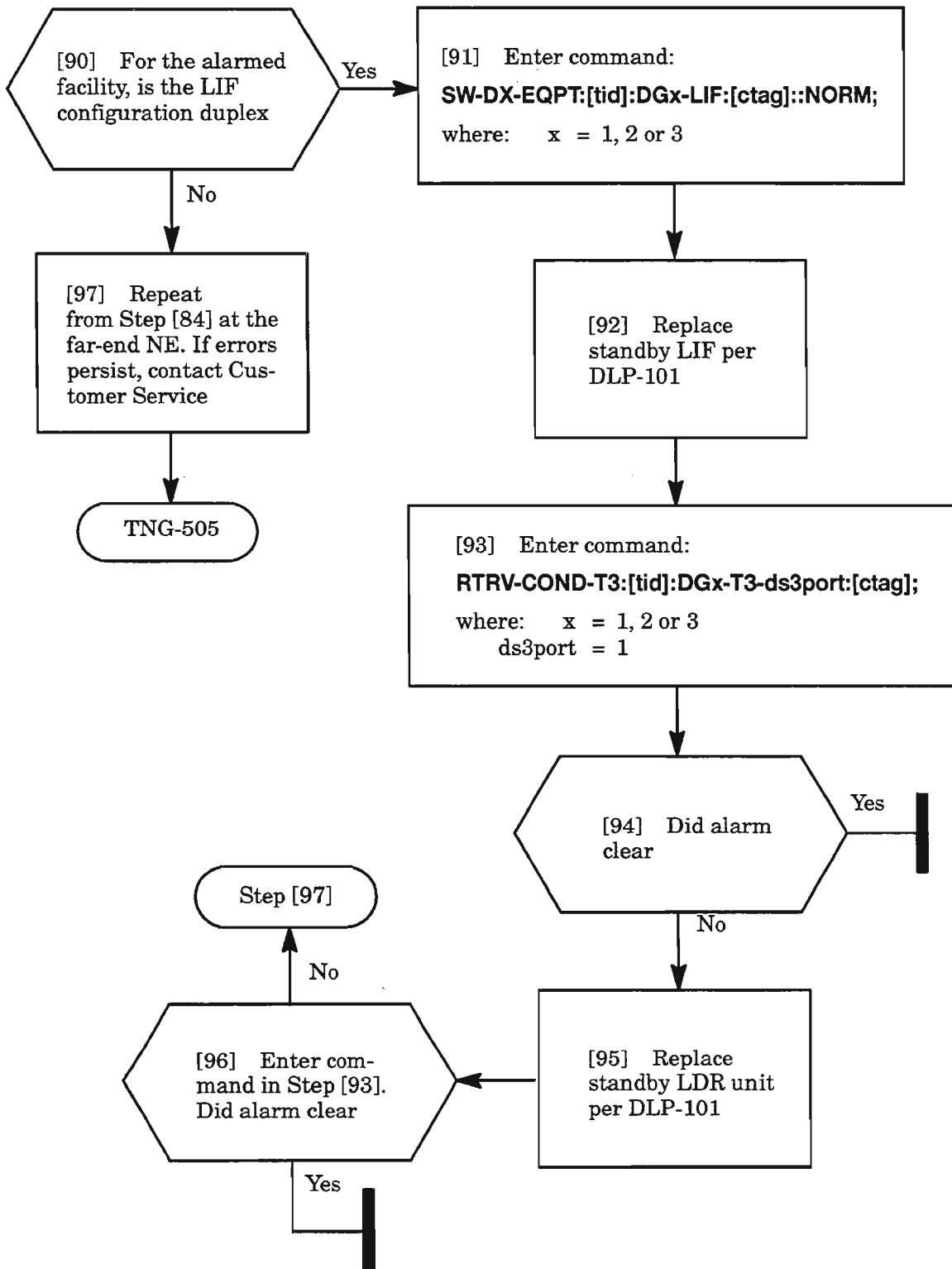
[87] Did alarm clear (may take several minutes)

[88] Replace standby (duplex) or active (simplex) LDR unit per DLP-101

[89] Enter command in Step [86]. Did alarm clear

Page 17

**T-XXX (cont)**

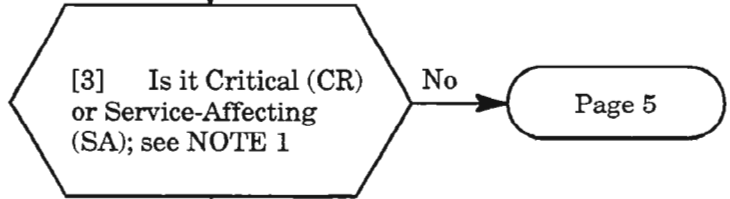
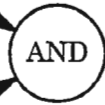






[1] See GENERAL EXPLANATION  
of alarm message, Page 2

[2] Recognize the severity level  
(almcde and ntfncde)



No → Page 5

Yes

[4] Immediate action is imperative per  
local practice



Page 4

[5] Identify which BITS source failed per  
aid given in response (see GENERAL  
EXPLANATION, Page 2)

**NOTE:** 1. Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.

## GENERAL EXPLANATION

### MESSAGE

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM BITS  
"aid:ntfcncde,condbits,srveff:[conddescr],[aiddet]:,[tblislt]"  
;
```

### WHERE

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** Access identification code which is used to identify which synchronous BITS source has caused the alarm message

- SYNCPRI** Primary sync BITS source
- SYNCSEC** Secondary sync BITS source

**ntfcncde** Alarm notification code

- CR** Critical alarm
- MJ** Major alarm
- MN** Minor alarm
- CL** Cleared alarm

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 5	050

REPT ALM BITS (INPUT)

**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM BITS  
"aid:ntfcncde,condbits,srveff:[conddescr],[aiddet]:,[tblislt]"  
;

**WHERE**

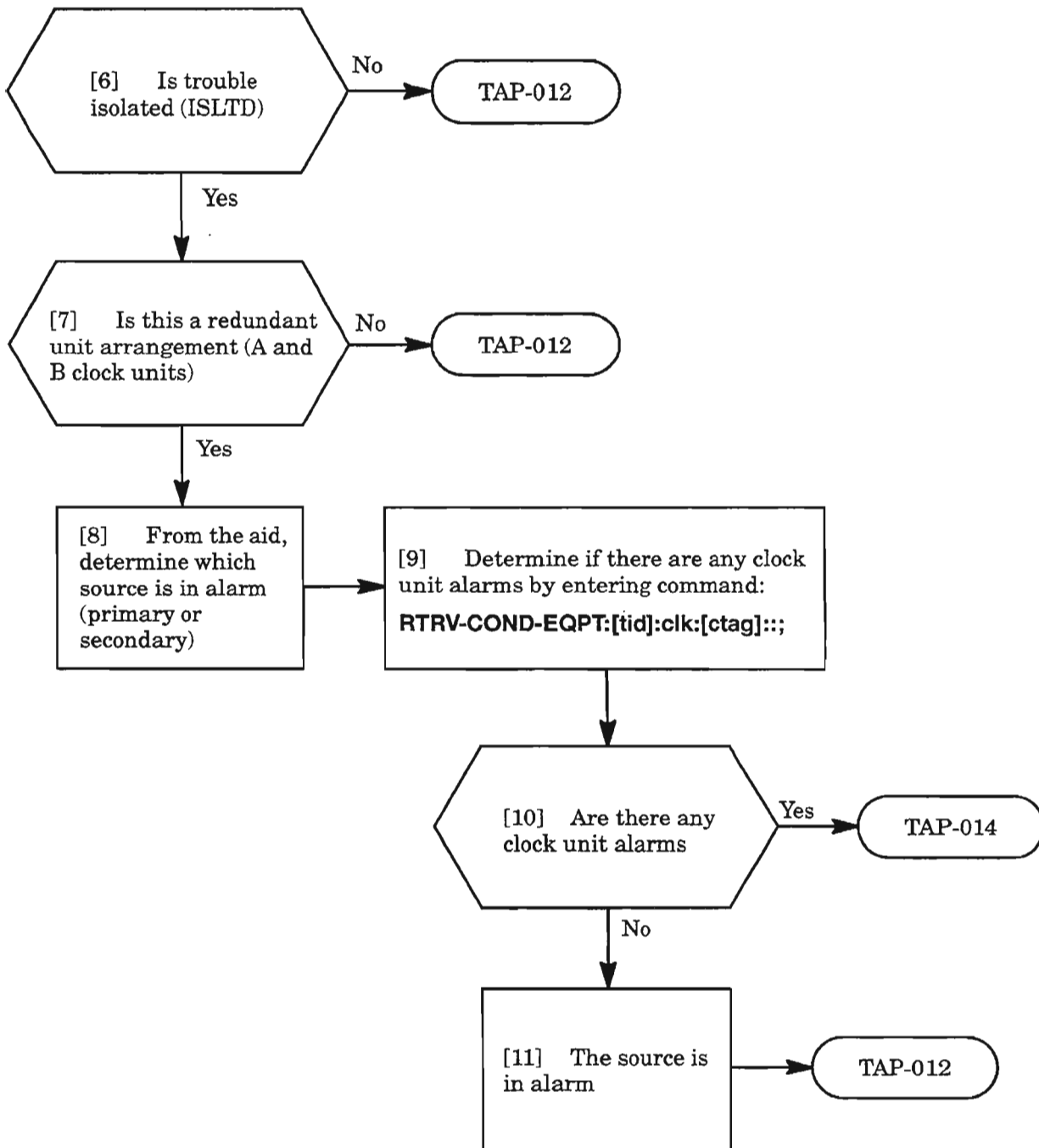
**condbits** Condition types of the BITS (Building Integrated Timing System) (see TNG-507, Table B, for alarm conditions and their definitions)

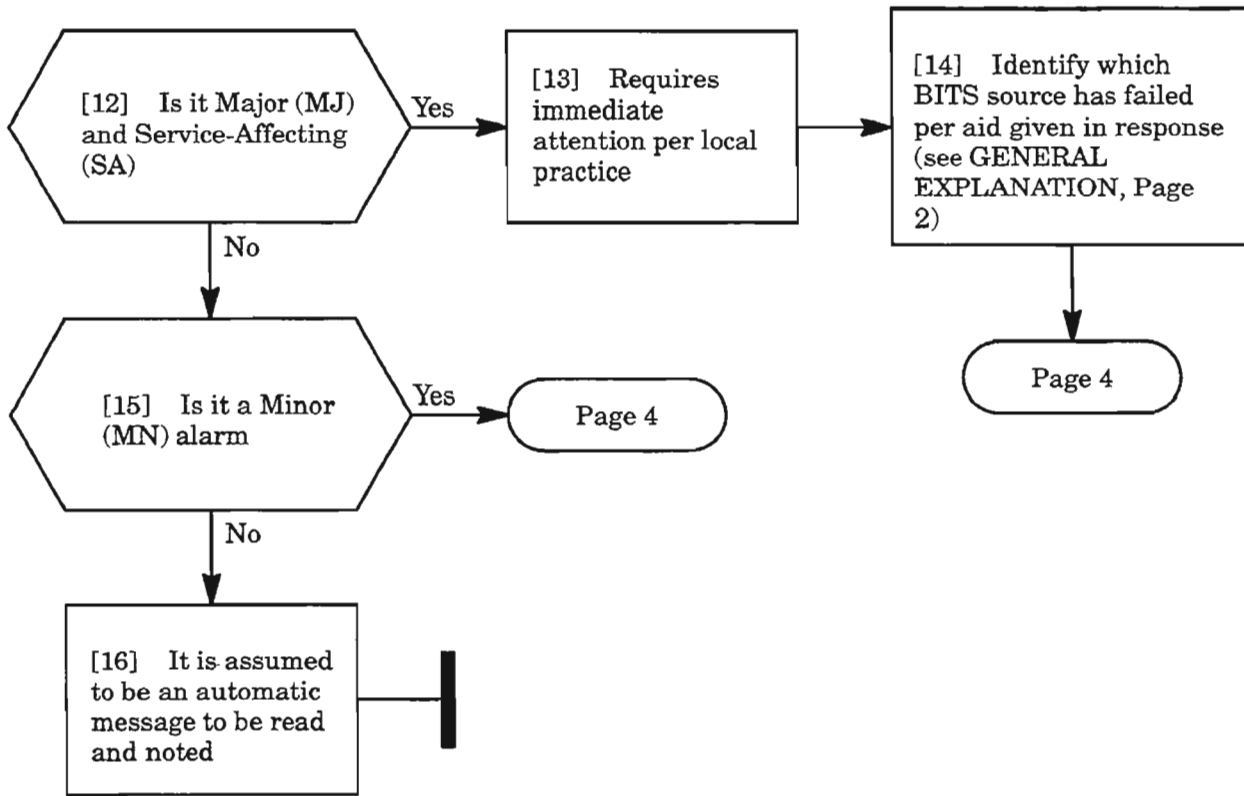
**srveff** Service effect  
NSA Non-Service-affecting  
SA Service-affecting

**[conddescr]** Detailed text description of the trouble; 1-62 alphanumeric characters

**[aiddet]** Supplementary equipment identification identifying the location of the reported trouble  
A A side  
B B side  
AB Both sides A and B

**[tblislt]** Trouble isolation; significance of the isolation information provided by the *aid* value that is included in this message. The valid values are:  
ISLTD Isolated  
NIMAN Not isolated, manual isolation required  
NIPSS Not isolated, passed diagnostics

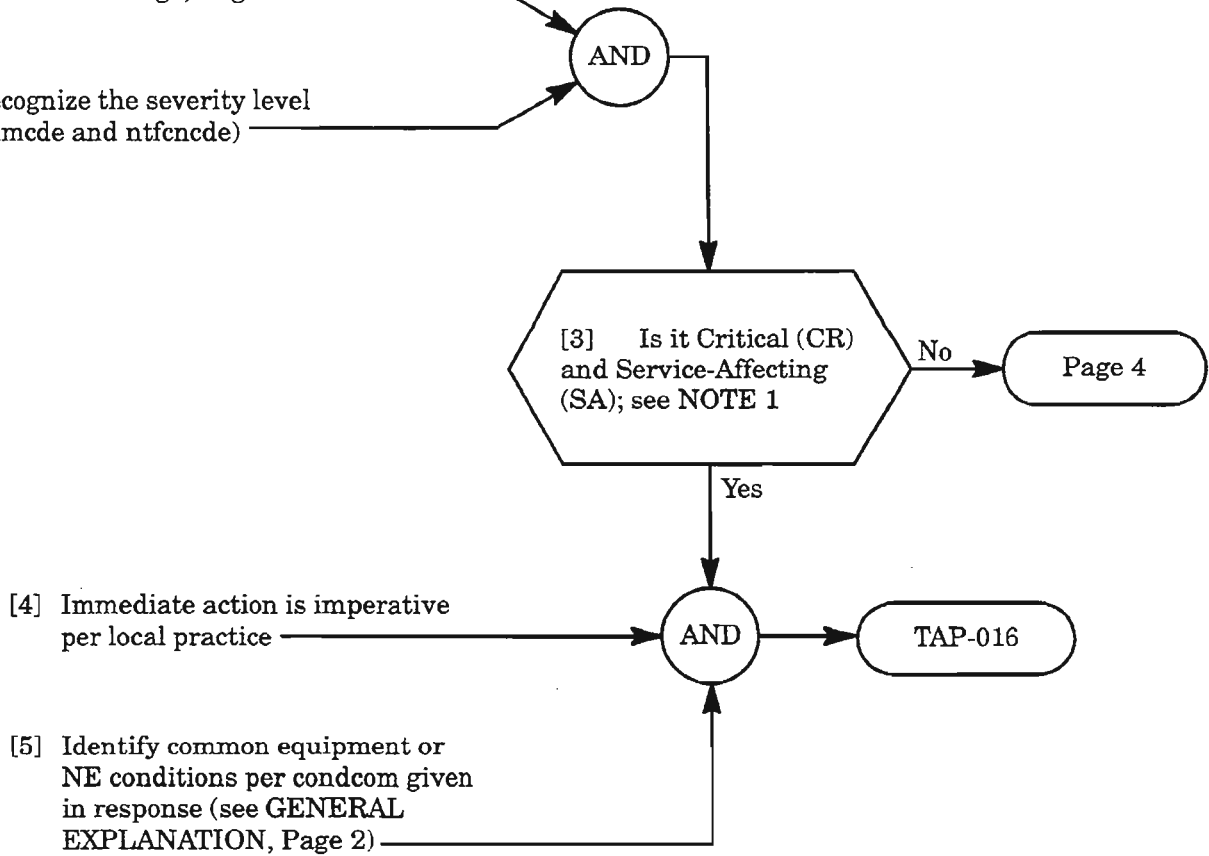






[1] See GENERAL EXPLANATION of alarm message, Page 2

[2] Recognize the severity level (almcde and ntfncde)



**NOTE:** 1. Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.

## GENERAL EXPLANATION

### MESSAGE

```
sid yy-mm-dd hh:mm:ss
almcde atag REPT ALM COM
"aid:ntfcncde,condcom,srveff:[conddescr],
[aiddet]:,[tblislt]"
```

;

### PARAMETER EXPLANATION

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** The access identification code which is used to identify the common equipment/NE from which the alarms are reported. The valid parameter is **COM**

**ntfcncde** Alarm notification code

- CR Critical alarm
- MJ Major alarm
- MN Minor alarm
- CL Cleared alarm

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	051

REPT ALM COM



**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM COM  
"aid:ntfcncde,condcom,srveff:[conddescr],  
[aiddet]:,[tblislt]"

;

**PARAMETER EXPLANATION**

**condcom** The condition types of the common equipment or NE (see TNG-507, Table B, for alarm conditions and their definitions)

**srveff** Service effect

**NSA** Non-service-affecting

**SA** Service-affecting

**[conddescr]**

Detailed text description of the trouble; 1-62 alphanumeric characters

**[aiddet]** Supplementary equipment identification identifying the location of the reported trouble

**A** A side

**B** B side

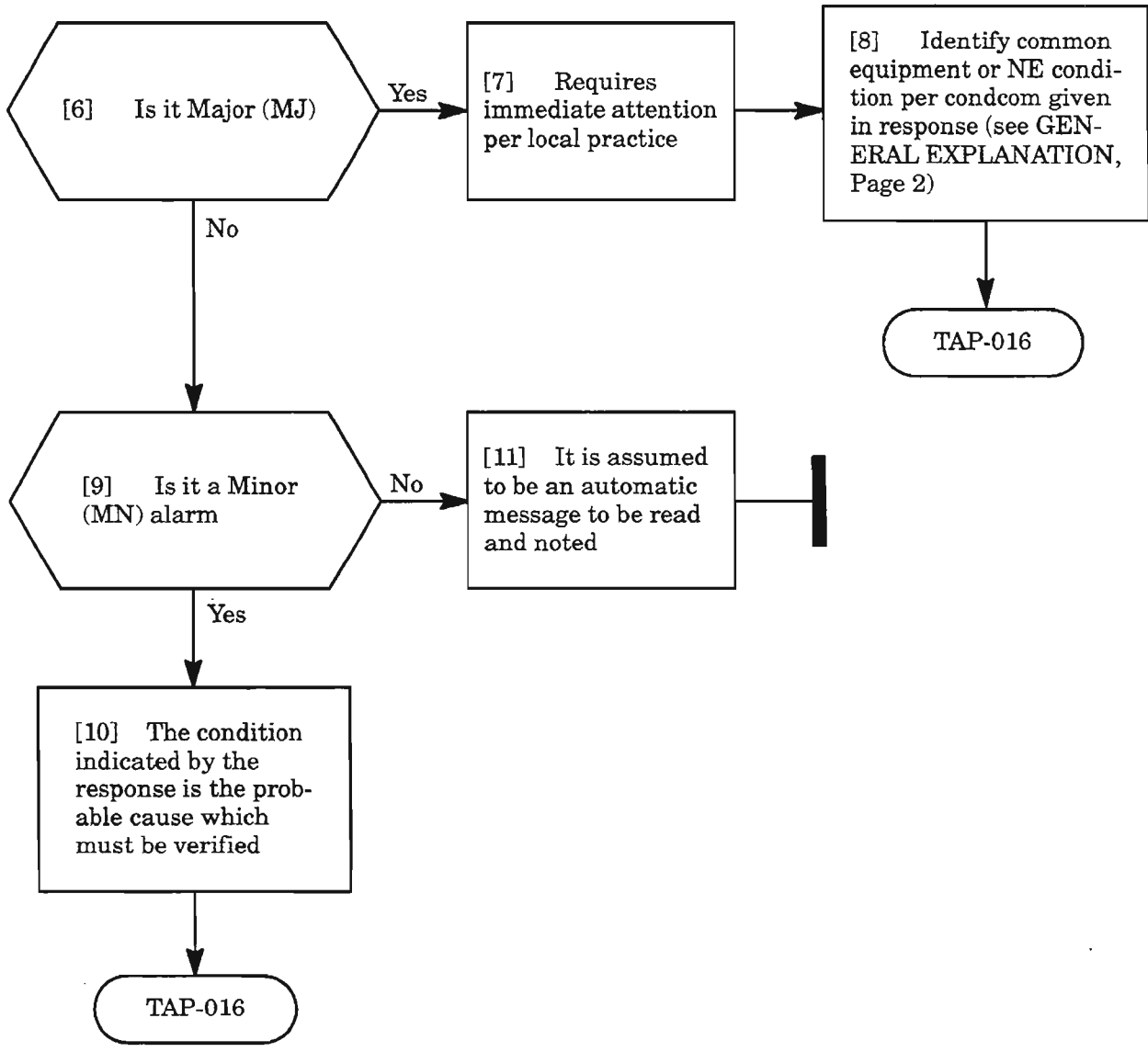
**AB** Both sides A and B

**[tblislt]** Trouble isolation

**ISLTD** Isolated

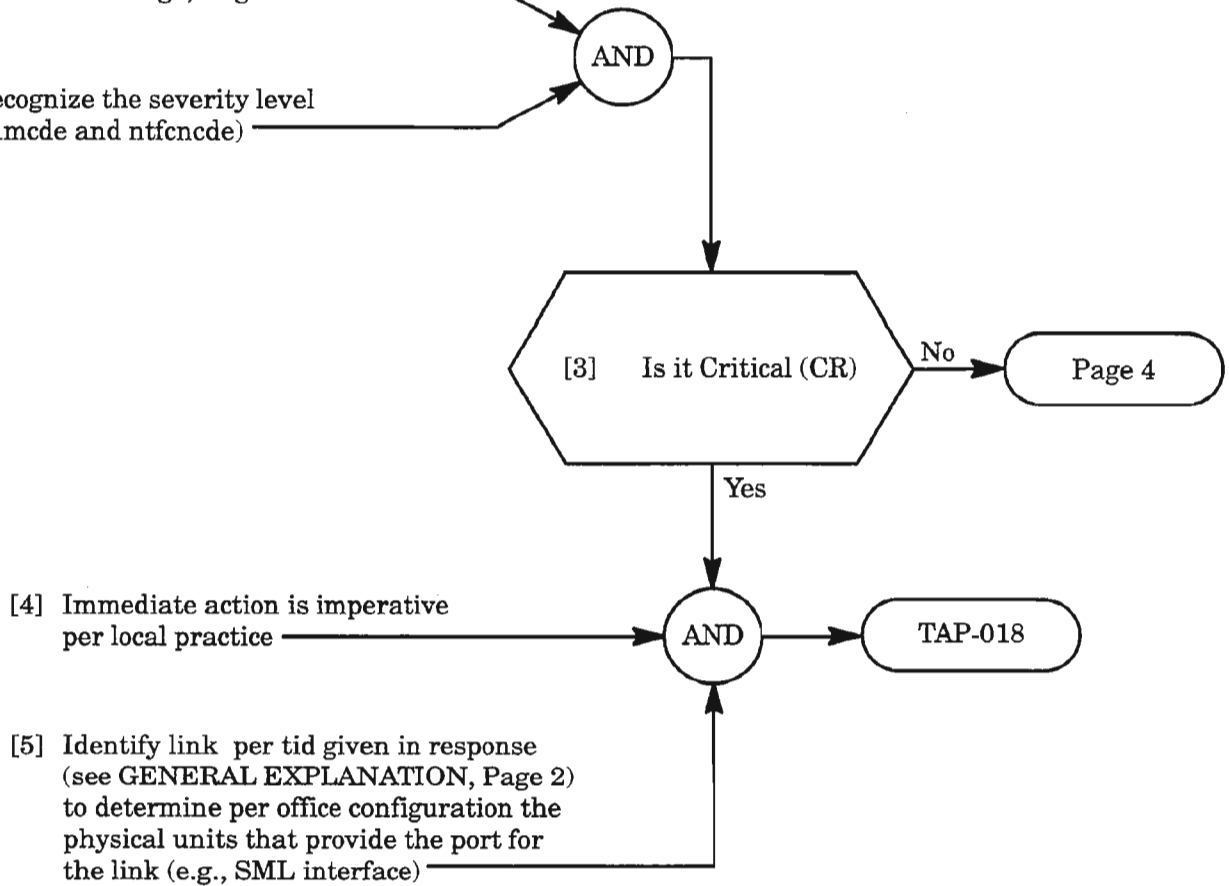
**NIMAN** Not isolated, manual isolation required

**NIPSS** Not isolated, passed diagnostics



[1] See GENERAL EXPLANATION  
of alarm message, Page 2

[2] Recognize the severity level  
(almcde and ntfncde)



**GENERAL EXPLANATION**

**MESSAGE**

```
sid yy-mm-dd hh:mm:ss
almcde atag REPT ALM DLMAP
"tid:ntfncde,condcl,srveff:[conddescr],
[aiddet]:,[tblislt]"
;
```

**PARAMETER EXPLANATION**

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**tid** Terminal identification code

**ntfncde** Alarm notification code

- CR Critical alarm
- MJ Major alarm
- MN Minor alarm
- CL Cleared alarm

**condcl** Condition of data link map (see TNG-507, Table B, for alarm conditions and their definitions)

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	052

**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM DLMAP  
"tid:ntfncde,condcl,srveff:[conddescr],  
[aidet]:,[tblist]"  
;

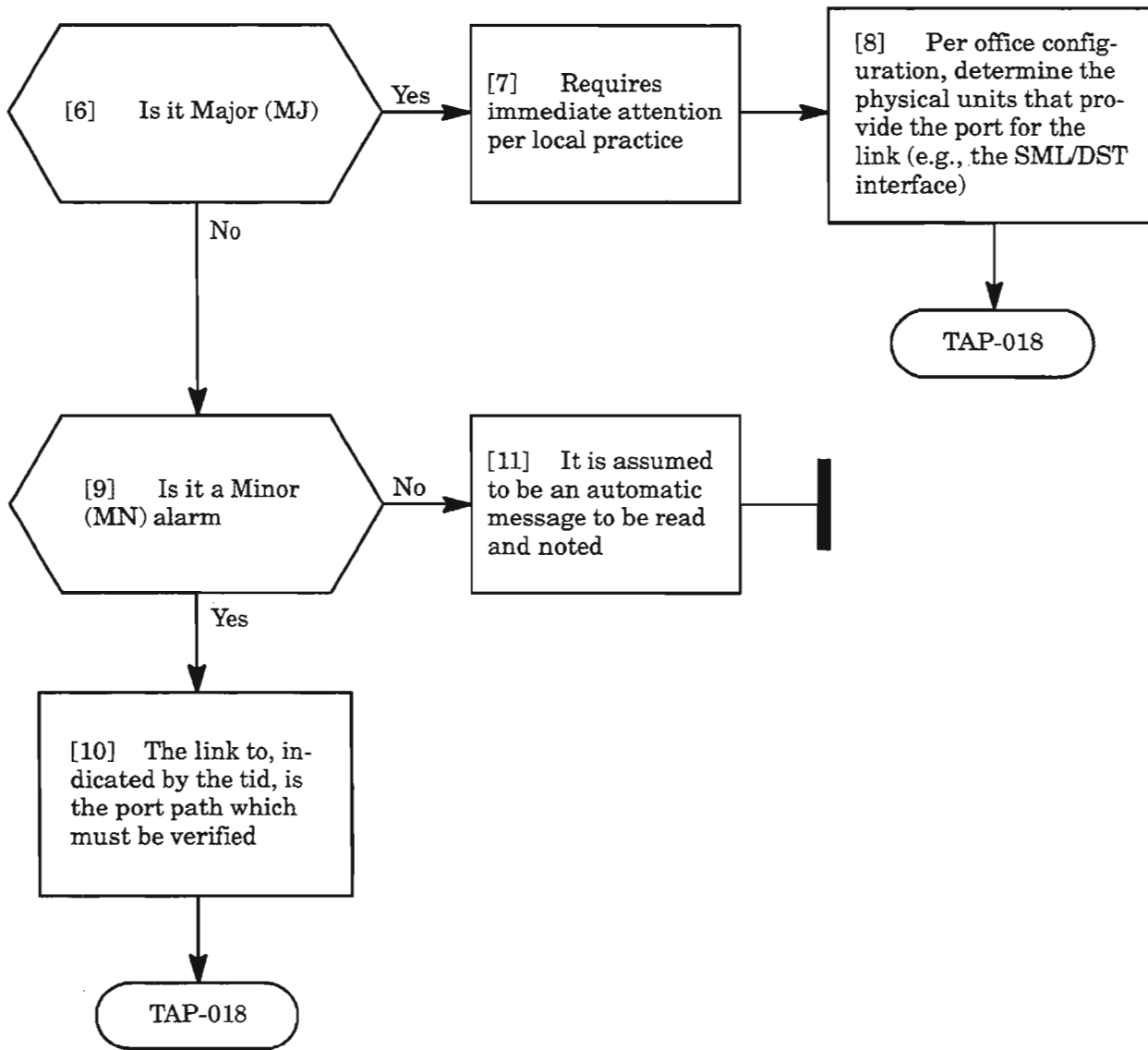
**PARAMETER EXPLANATION**

**srveff**      Service effect  
          **NSA**      Non-service-affecting  
          **SA**        Service-affecting

**[conddescr]**      Detailed text description of the trouble; 1-62 alphanumeric characters

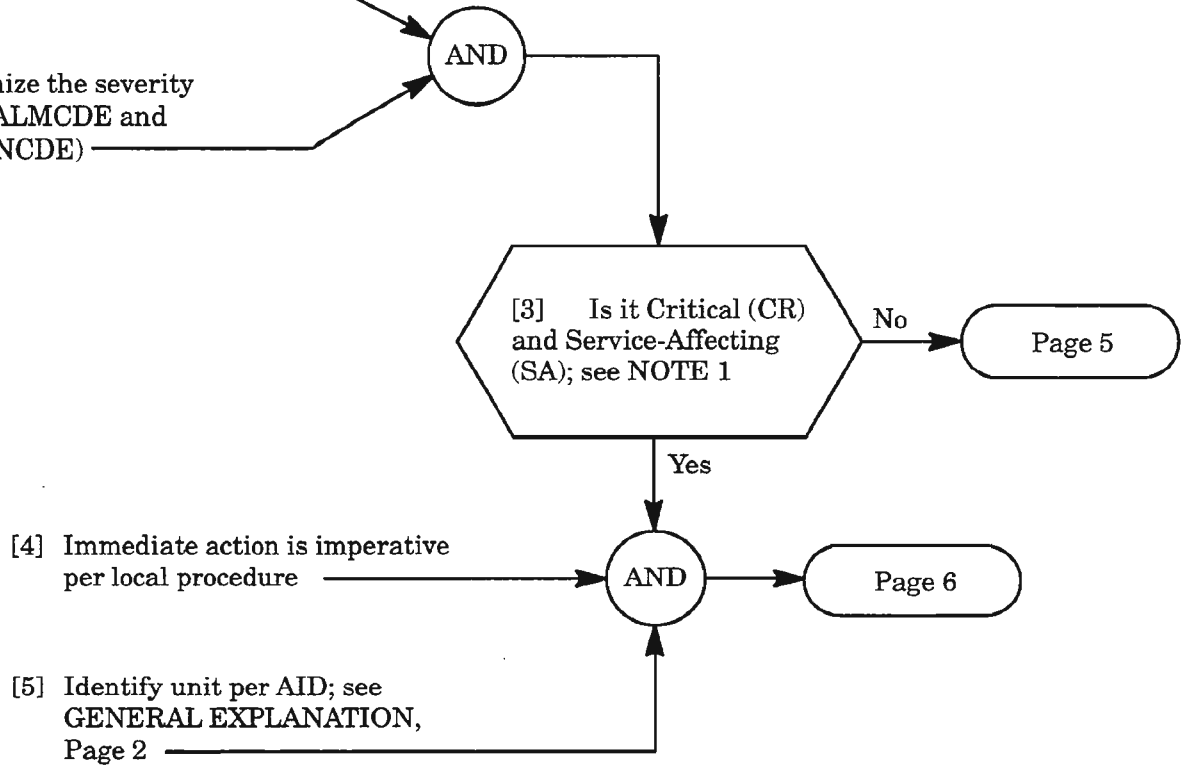
**[aidet]**          Supplementary equipment identification identifying the location of the reported trouble  
          **A**            A side  
          **B**            B side  
          **AB**          Both sides A and B

**[tblist]**          Trouble isolation  
          **ISLTD**          Isolated  
          **NIMAN**          Not isolated, manual isolation required  
          **NIPSS**          Not isolated, passed diagnostics



[1] See GENERAL EXPLANATION of alarm message, Page 2

[2] Recognize the severity level (ALMCDE and NTFNCDE)



**NOTE:** 1. Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.

**GENERAL EXPLANATION**

**MESSAGE**

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM EQPT  
"aid:ntfcncde,condeqpt,srveff:[conddescr],[aiddet]:,[tblislt]"  
;
```

**PARAMETER EXPLANATION**

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** Access identification code (unit)

- pba (format for common units)  
where: pba = **COA, NEPA, NEPB, CLKA, CLKB, PWRA, PWRB, PWRC, VSCCA, VSCCB**
- dgx-dmiab (format for DMI units)  
where: dgx = **DG1, DG2, DG3**  
dmiab = **DMIA, DMIB**
- dgx-VTG-vtgport (format for main VTG unit)  
where: dgx = **DG1, DG2, DG3**  
vtgport = **1...7** (double grouping is allowed)
- dgx-VTG-P (format for protection VTG unit)  
where: dgx = **DG1, DG2, DG3**
- dgx-lifab (format for LIF units)  
where: dgx = **DG1, DG2, DG3**  
lifab = **LIFA, LIFB**

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 6	053

**REPT ALM EQPT**



**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM EQPT  
"aid:ntfncde,condeqpt,srveff:[conddescr],[aiddet]:,[tblislt]"  
;

**PARAMETER EXPLANATION**

**aid (cont)**

dgx-ldrab-ldrport (format for LDR units)

where: dgx = **DG1, DG2, DG3**

ldrab = **LDRA, LDRB**

ldrport = **1**

lgx-hifab (format for HIF units)

where: lgx = **LG1, LG2**

hifab = **HIFA, HIFB**

**ntfncde** Alarm notification code

**CL** Cleared alarm

**CR** Critical alarm

**MJ** Major alarm

**MN** Minor alarm

**condeqpt** Condition of equipment (see TNG-507, Table B, for alarm conditions and their definitions)

**srveff** Service effect

**NSA** Non-service-affecting

**SA** Service-affecting

**[conddescr]** Detailed text description of the trouble; 1-62 alphanumeric characters

*Continued on next page*

**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM EQPT  
"aid:ntfcncde,condeqpt,srveff:[conddescr],[aiddet]:,[tblislt]"  
;

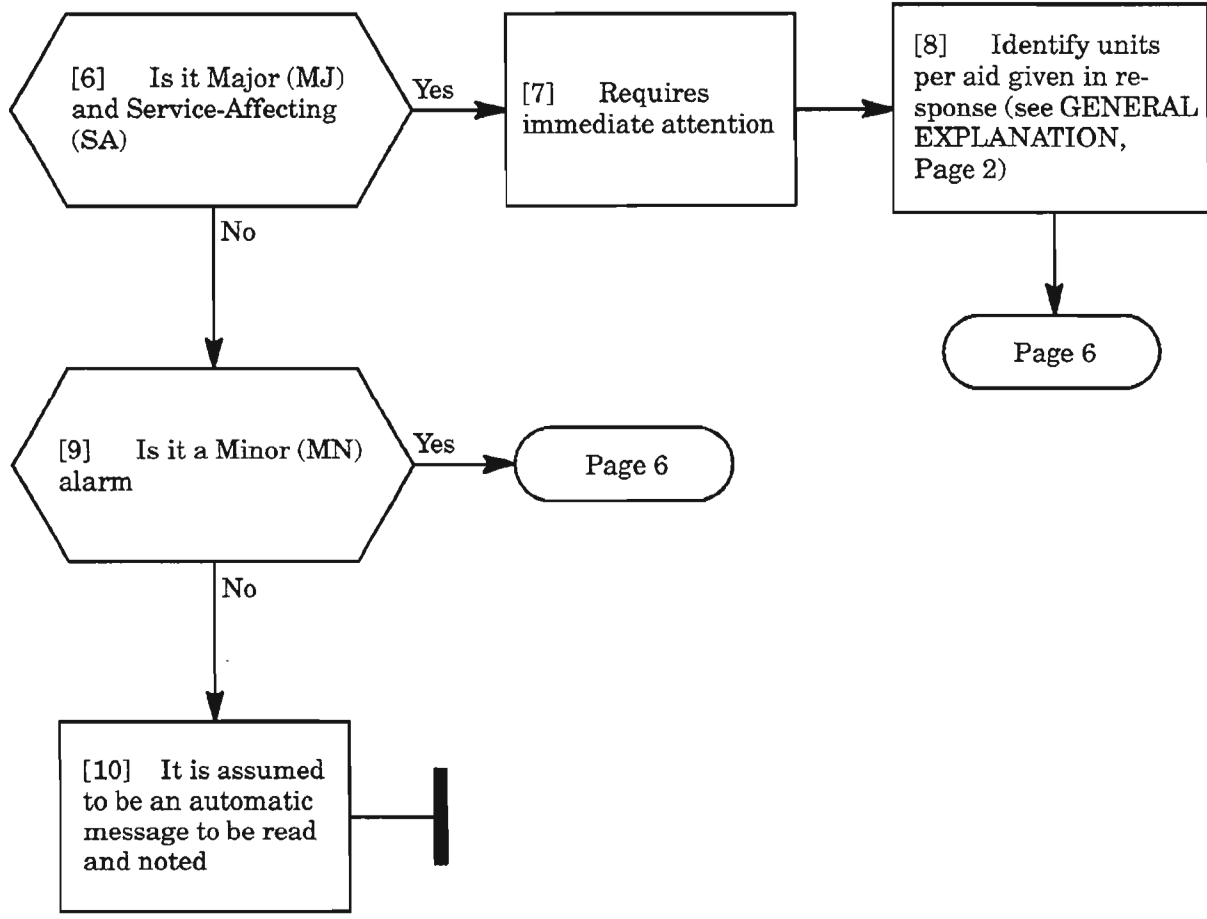
**PARAMETER EXPLANATION**

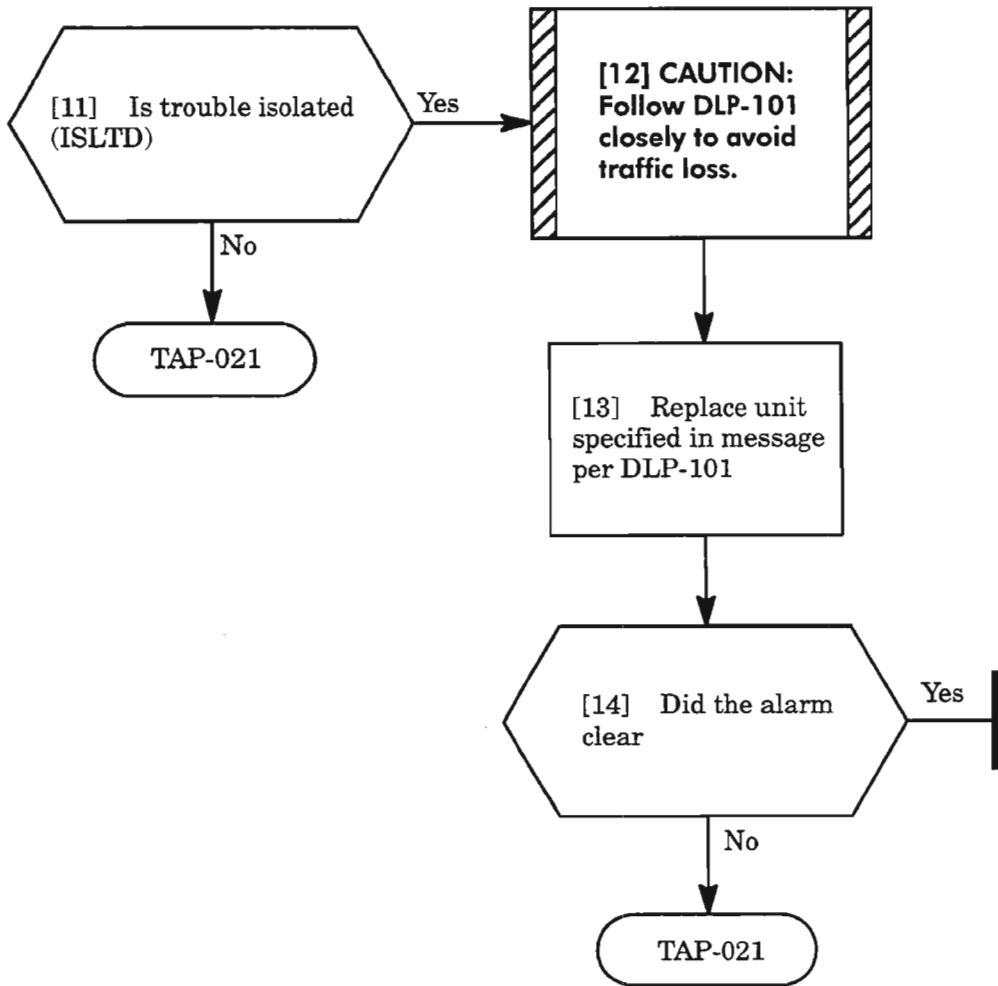
**[aiddet]** Supplementary equipment identification identifying the location of the reported trouble

**A** A side  
**B** B side  
**AB** Both sides A and B

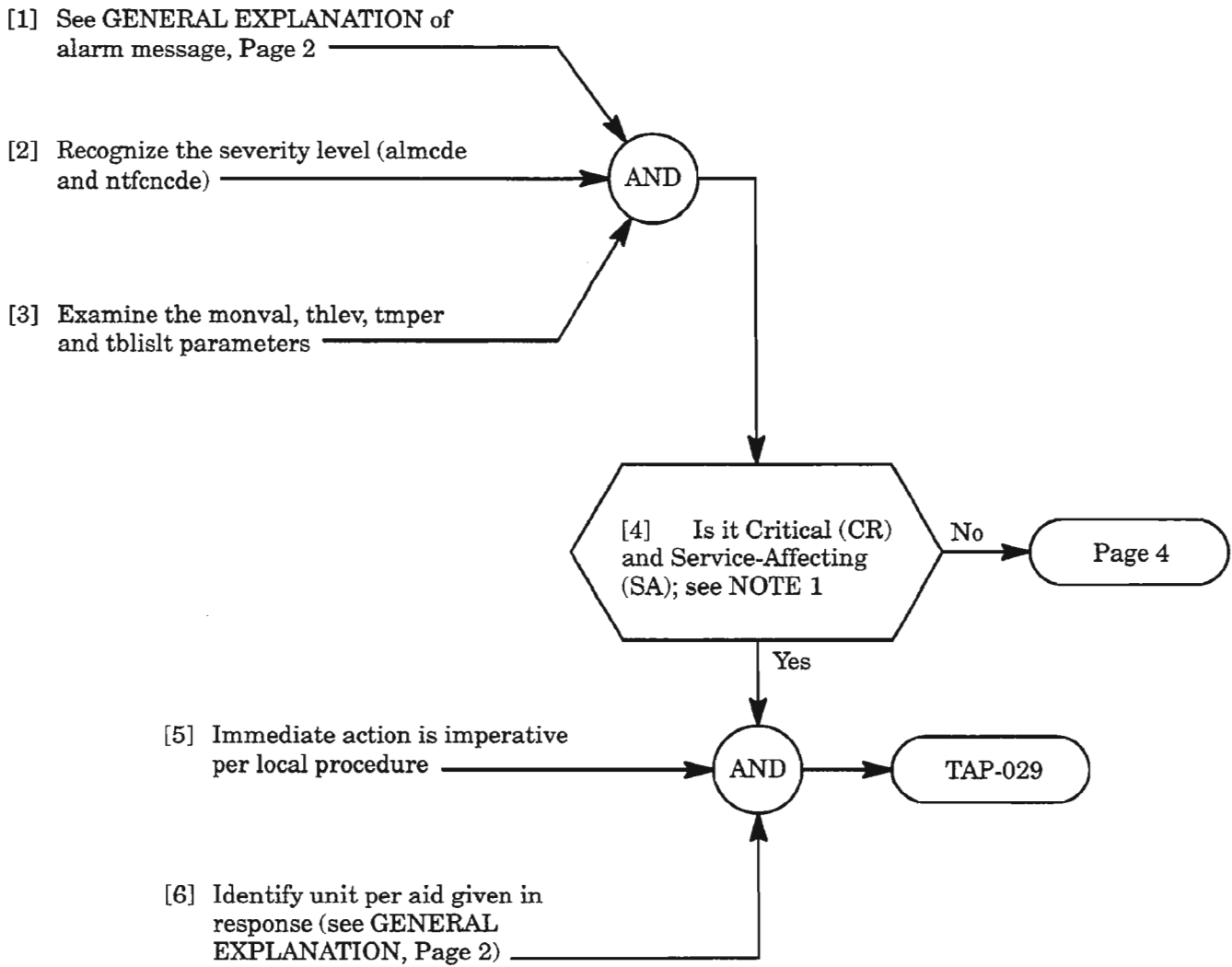
**[tblislt]** Trouble isolation

**ISLTD** Isolated  
**NIMAN** Not isolated, manual isolation required  
**NIPSS** Not isolated, passed diagnostics





ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 6 of 6	053



**NOTE:** 1. Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.

## GENERAL EXPLANATION

### MESSAGE

```
sid yy-mm-dd hh:mm:ss
almcde atag REPT ALM OC3
  "aid:ntfncde,condoc3,srveff,,
    ,,,[monval],[thlev],[tmper]:[conddescr],[aiddet]:,[tblislt]"
;
```

### PARAMETER EXPLANATION

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** Access identification code (unit); used to identify the OC3 facility from which the alarms are reported. The format and its values are:

- lgx-oc3ab (format for OC3 high speed interfaces)
- where: lgx = **LG1, LG2**
- oc3ab = **OC3A, OC3B**

**ntfncde** Alarm notification code

- CL Cleared alarm
- CR Critical alarm
- MJ Major alarm
- MN Minor alarm

**condoc3** Condition of OC3 facility (see TNG-507, Table B, for alarm conditions and their definitions)

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	054

REPT ALM OC3

GENERAL EXPLANATION (cont)

MESSAGE

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM OC3  
"aid:ntfcncde,condoc3,srveff,,  
,,[monval],[thlev],[tmper]:[conddescr],[aiddet]:,[tblislt]"  
;
```

PARAMETER EXPLANATION

**srveff** Service effect

**NSA** Non-service-affecting

**SA** Service-affecting

**[monval]** Performance monitoring measured value. The range is 0..65534

**[thlev]** Performance monitoring threshold value that was exceeded

**[tmper]** Performance monitoring accumulation time period:

**15-MIN** 15-minute time period

**1-DAY** 1-day time period

**[conddescr]**

Detailed text description of the trouble; 1-62 alphanumeric characters

**[aiddet]** Supplementary equipment identification identifying the location of the reported trouble:

**A** A side

**B** B side

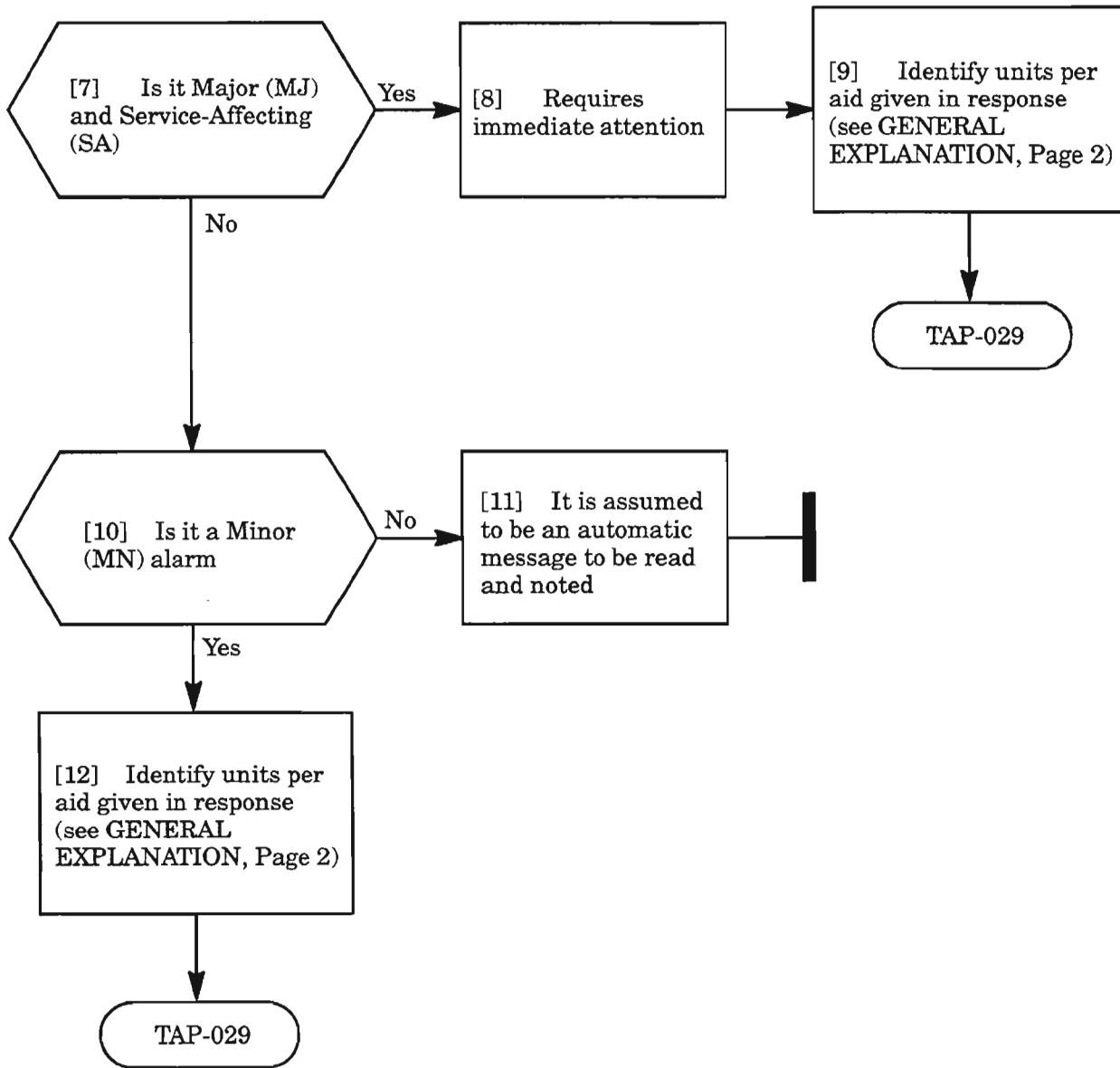
**AB** Both sides A and B

**[tblislt]** Trouble isolation

**ISLTD** Isolated

**NIPSS** Not isolated, passed diagnostics

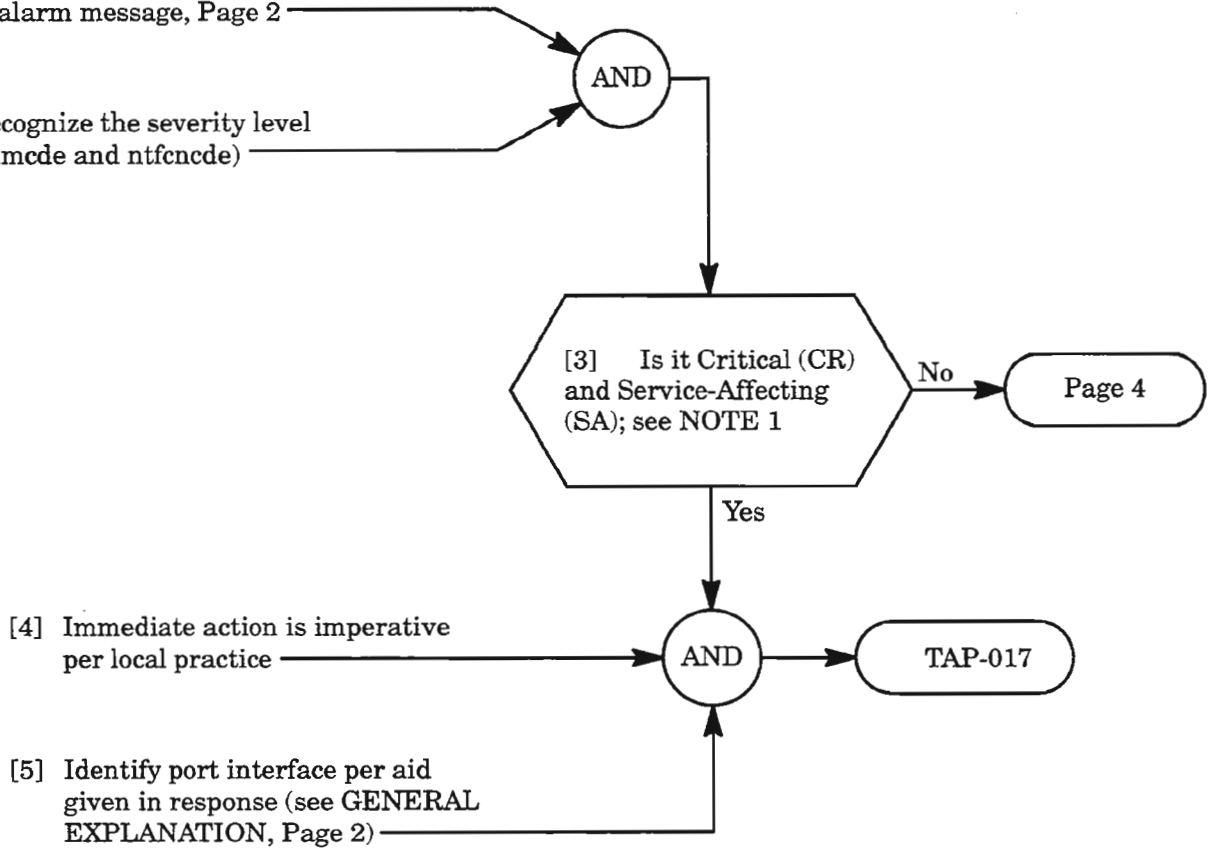
**NIMAN** Not isolated, manual isolation required





[1] See GENERAL EXPLANATION  
of alarm message, Page 2

[2] Recognize the severity level  
(almcde and ntfncde)



**NOTE:** 1. Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.

## GENERAL EXPLANATION

### MESSAGE

```
sid yy-mm-dd hh:mm:ss
almcde atag REPT ALM PORT
"aid:ntfcncde,condport,srveff:[conddescr],
[aiddet]:,[tblislt]"
```

;

### PARAMETER EXPLANATION

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** The access identification code which is used to identify a port from which the alarms are reported. The values are:

- CRAFT1** Craft interface port 1
- CRAFT2** Craft interface port 2
- SE2A** Serial E2A interface port
- X25PORT** X.25 interface port

**ntfcncde** Alarm notification code

- CL Cleared alarm
- CR Critical alarm
- MJ Major alarm
- MN Minor alarm

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	055

REPT ALM PORT

**GENERAL EXPLANATION (cont)**

**MESSAGE**

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM PORT  
"aid:ntfcncde,condport,srveff:[conddescr],  
[aidet]:,[tblist]"  
  
;
```

**PARAMETER EXPLANATION**

**condport** The condition types of the port interface (see TNG-507, Table B, for alarm conditions and their definitions)

**srveff** Service effect

<b>NSA</b>	Non-service-affecting
<b>SA</b>	Service-affecting

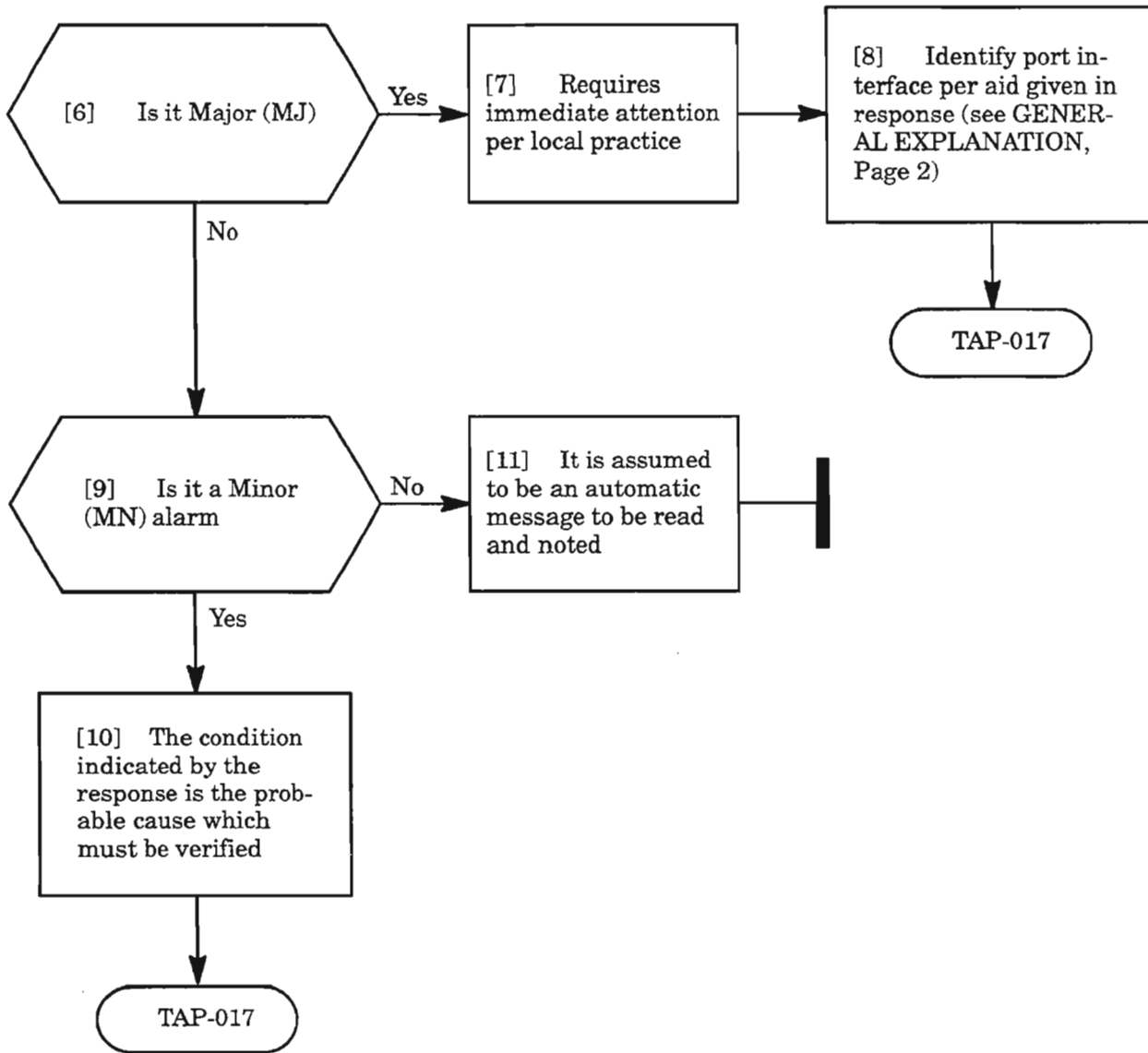
**[conddescr]** Detailed text description of the trouble; 1-62 alphanumeric characters

**[aidet]** Supplementary equipment identification identifying the location of the reported trouble

<b>A</b>	A side
<b>B</b>	B side
<b>AB</b>	Both sides A and B

**[tblist]** Trouble isolation

<b>ISLTD</b>	Isolated
<b>NIMAN</b>	Not isolated, manual isolation required
<b>NIPSS</b>	Not isolated, passed diagnostics

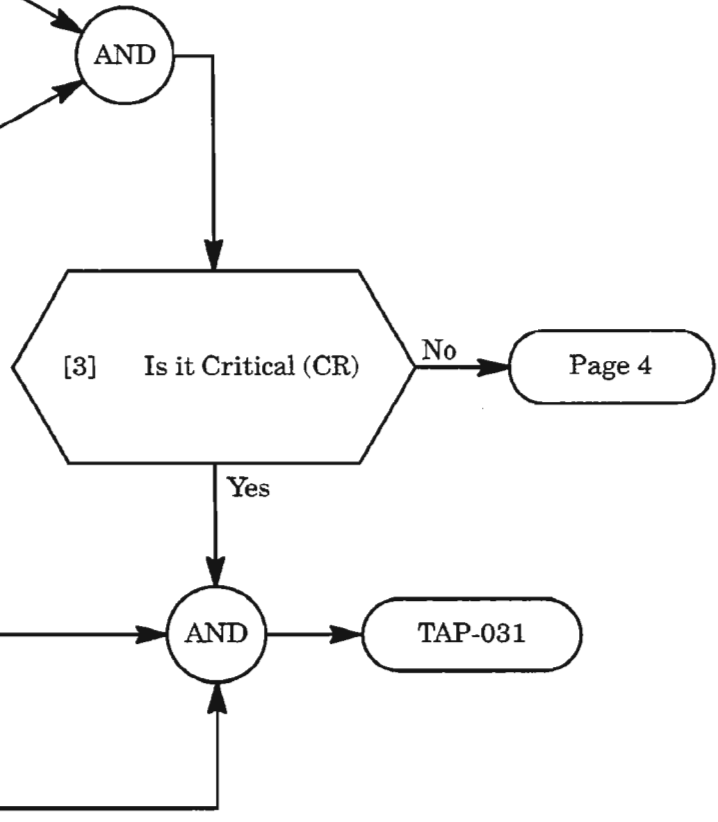


[1] See GENERAL EXPLANATION  
of alarm message, Page 2

[2] Recognize the severity level  
(almcde and ntfncde)

[4] Immediate action is imperative  
per local practice

[5] Identify NE per netid given  
in response (see GENERAL  
EXPLANATION, Page 2)



**GENERAL EXPLANATION**

**MESSAGE**

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM RMT  
"netid:ntfncde,condrmt,srveff:[conddescr],  
[aiddet];,[tblislt]"  
;
```

**PARAMETER EXPLANATION**

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**netid** Network Element terminal identification code; 20-character alphanumeric test string

**ntfncde** Alarm notification code

- CR Critical alarm
- MJ Major alarm
- MN Minor alarm
- CL Cleared alarm

**condrmt** Condition of remote autonomous message reporting (see TNG-507, Table B, for alarm conditions and their definitions)

**srveff** Service effect

- NSA Non-service-affecting
- SA Service-affecting

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	056

**REPT ALM RMT**

**GENERAL EXPLANATION (cont)**

**MESSAGE**

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM RMT  
"netid:ntfcncde,condrmt,srveff:[conddescr],  
[aiddet]:,[tblislt]"  
  
;
```

**PARAMETER EXPLANATION**

**[conddescr]**

Detailed text description of the trouble; 1-62 alphanumeric characters

**[aiddet]**

Supplementary equipment identification identifying the location of the reported trouble

**A**        A side

**B**        B side

**AB**      Both sides A and B

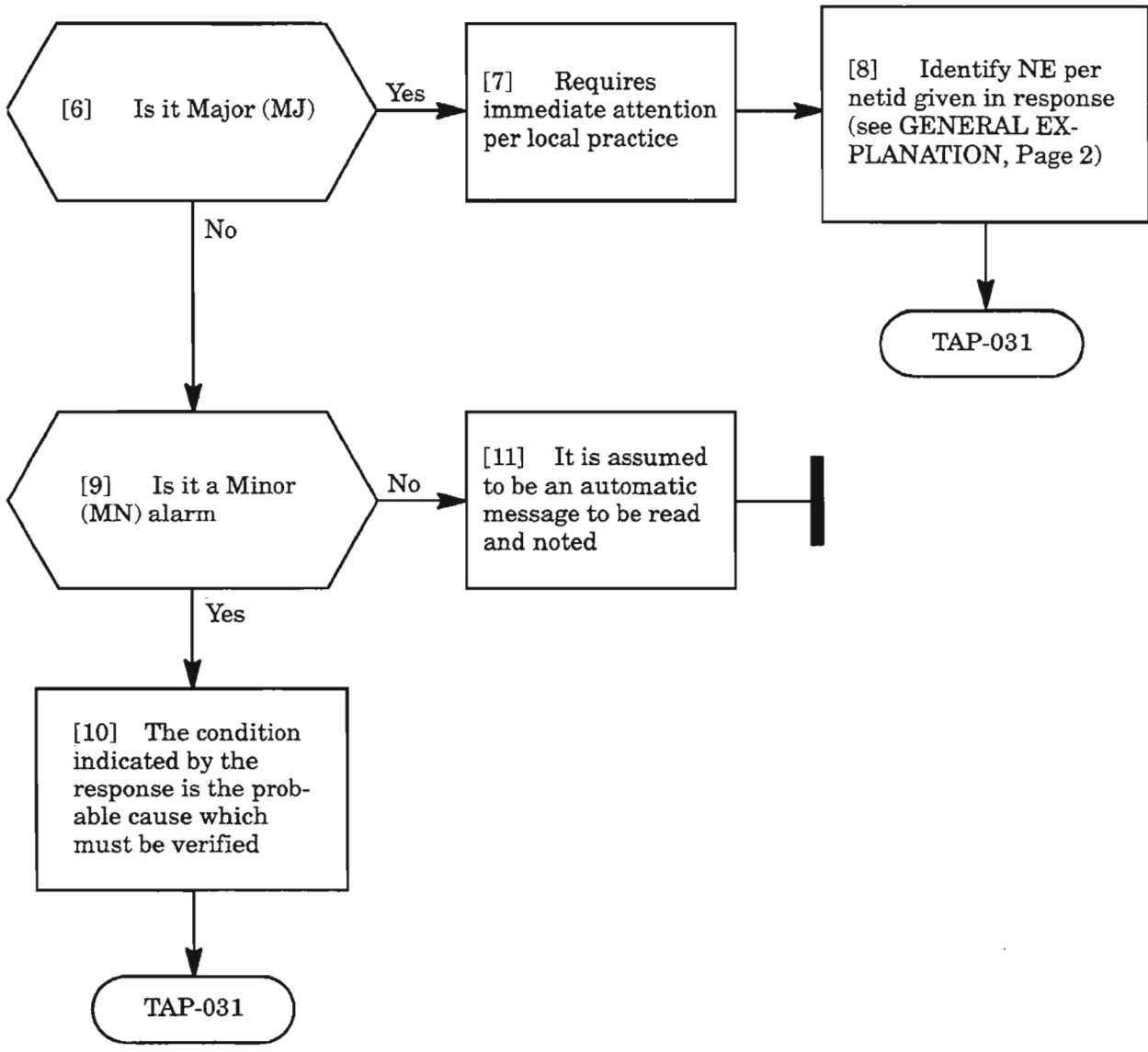
**[tblislt]**

Trouble isolation

**ISLTD**        Isolated

**NIMAN**        Not isolated, manual isolation required

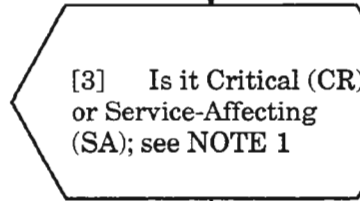
**NIPSS**        Not isolated, passed diagnostics





[1] See GENERAL EXPLANATION  
of alarm message, Page 2

[2] Recognize the severity level  
(almcde and ntfncde)



No

Page 4

Yes

[4] Immediate action is imperative per  
local practice



TAP-032

[5] Identify unit per aid given in  
response (see GENERAL  
EXPLANATION, Page 2)

**NOTE:** 1. Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.

**GENERAL EXPLANATION**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM SDCC  
"aid:ntfncde,condsdcc,srveff:[conddescr],[aiddet]:,[tblislt]"  
;

**PARAMETER EXPLANATION**

**sid** System Identification Code of the Network Element (NE)  
**yy** Last two digits of the year  
**mm** Month of the year in two digits  
**dd** Day of the month  
**hh** Hour of the day  
**mm** Minutes of the hour  
**ss** Seconds of the minute

**almcde** Alarm code  
    **\*C** Critical alarm  
    **\*\*** Major alarm  
    **\*** Minor alarm  
    **A** Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** Access identification code which is used to identify a section data communication channel from which the alarms are reported. The values are:  
    If the supporting facility is an SML, the value is:  
        **MAINT1** Maintenance link 1  
        **MAINT2** Maintenance link 2  
    If the supporting facility is an OC3 facility, the value is:  
        **LG1** Line group 1  
        **LG2** Line group 2

**ntfncde** Alarm notification code  
    **CR** Critical alarm  
    **MJ** Major alarm  
    **MN** Minor alarm  
    **CL** Cleared alarm

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	057

**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM SDCC  
"aid:ntfcncde,condsdcc,srveff:[conddescr],[aiddet]:,[tblislt]"  
;

**PARAMETER EXPLANATION**

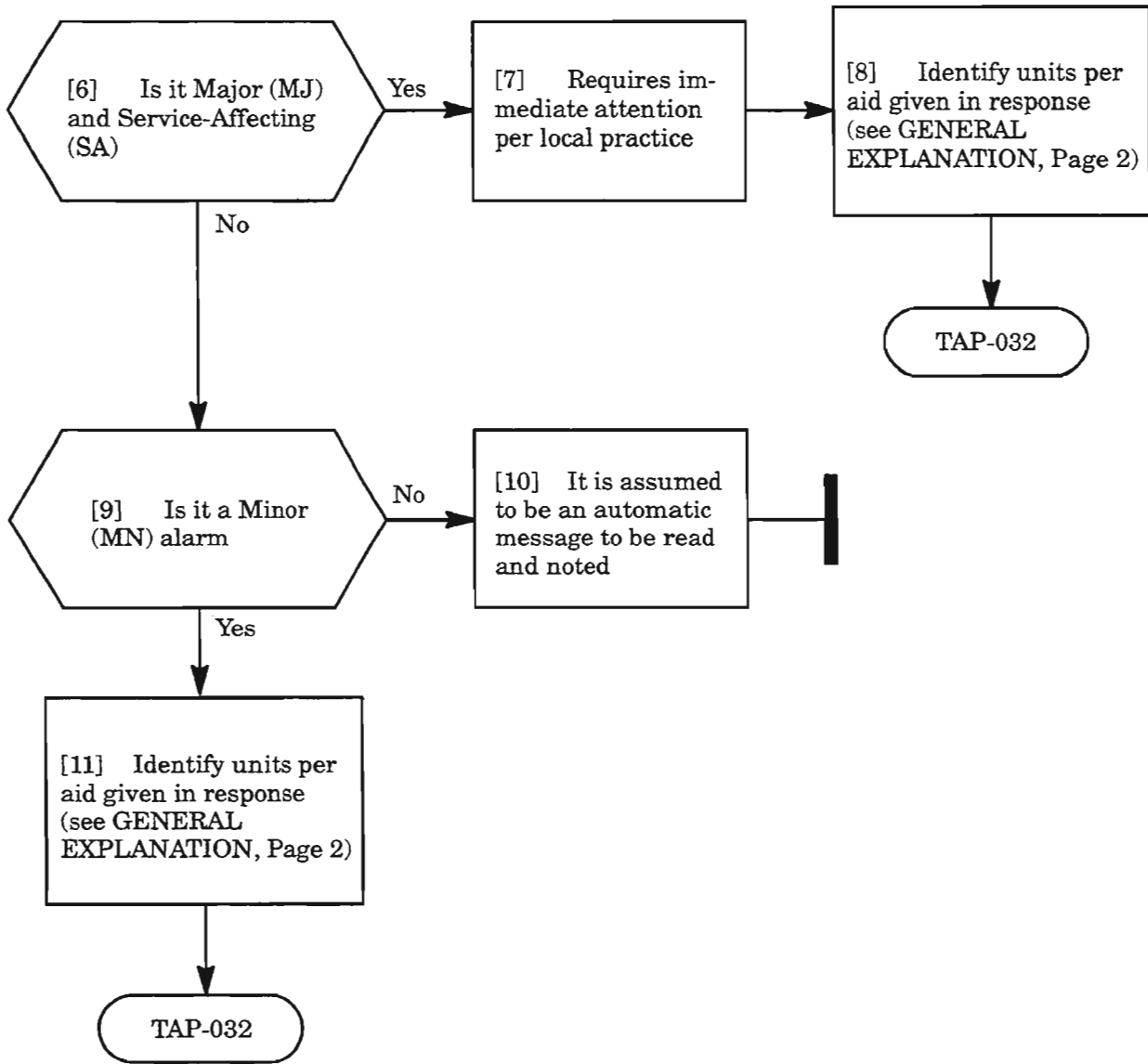
**condsdcc** The condition types of the section data communication channel (see TNG-507, Table B, for alarm conditions and their definitions)

**srveff** Service effect  
NSA Non-Service-affecting  
SA Service-affecting

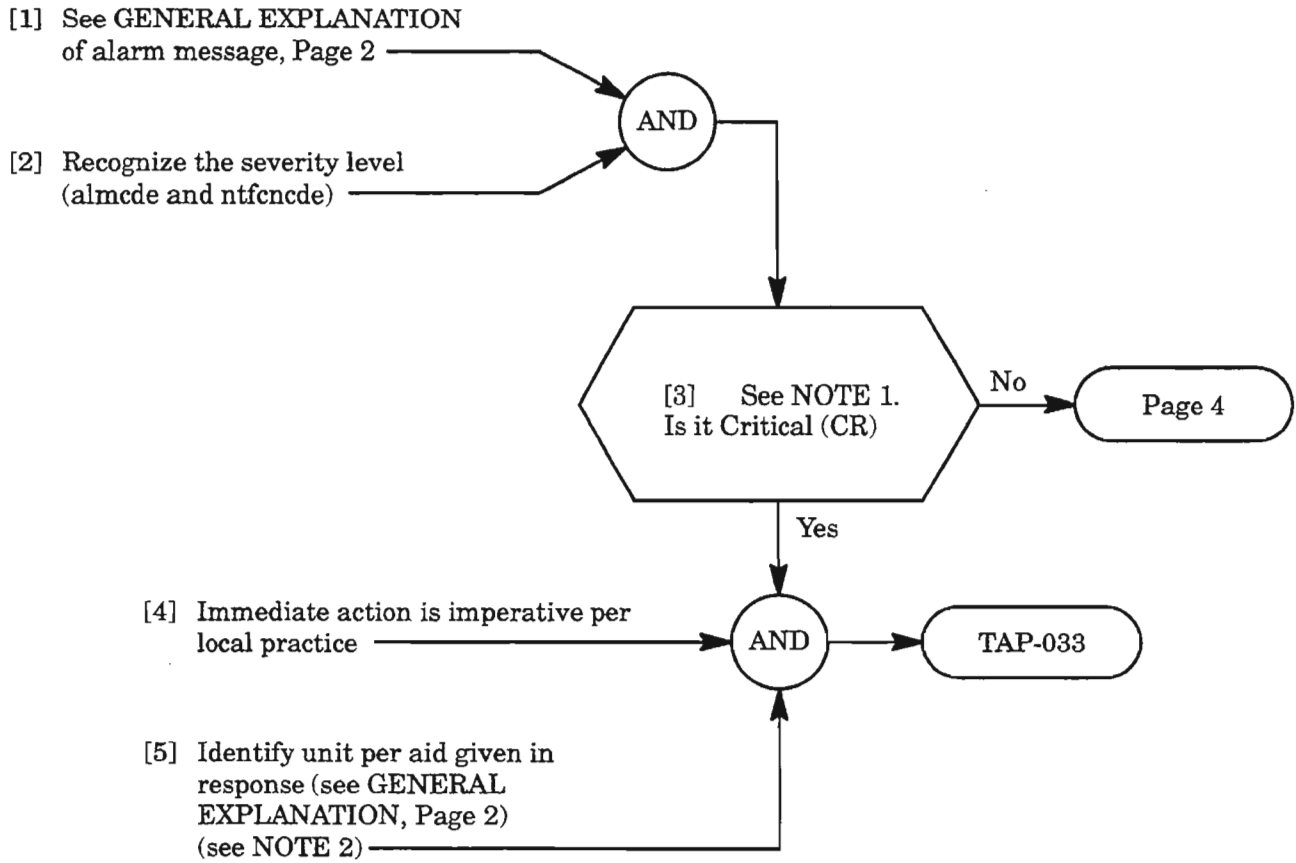
**[conddescr]** Detailed text description of the trouble; 1-62 alphanumeric characters

**[aiddet]** Supplementary equipment identification identifying the location of the reported trouble  
A A side  
B B side  
AB Both sides A and B

**[tblislt]** Trouble isolation  
ISLTD Isolated  
NIMAN Not isolated, manual isolation required  
NIPSS Not isolated, passed diagnostics



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 4 of 4	057



- NOTE:** 1. Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.
2. MAINT1 requires NEPA and MAINT2 requires NEPB. In this release, only one NEP (NEPA) is equipped.

**GENERAL EXPLANATION**

**MESSAGE**

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM SML  
"aid:ntfcncde,condsml,srveff:[conddescr],[aiddet]:,[tblislt]"  
;
```

**PARAMETER EXPLANATION**

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** Access identification code which is used to identify a synchronization maintenance link (with no synchronization) from which the alarms are reported. The values are:

- MAINT1** Maintenance link 1
- MAINT2** Maintenance link 2 (Future)

**ntfcncde** Alarm notification code

- CR** Critical alarm
- MJ** Major alarm
- MN** Minor alarm
- CL** Cleared alarm

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	058

**REPT ALM SML**

**GENERAL EXPLANATION (cont)**

**MESSAGE**

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM SML  
"aid:ntfcncde,condsml,srveff:[conddescr],[aiddet]:,[tblist]"  
;
```

**PARAMETER EXPLANATION**

**condsml** Condition types of the synchronization maintenance link (see TNG-507, Table B, for alarm conditions and their definitions)

**srveff** Service effect

- NSA** Non-Service-affecting
- SA** Service-affecting

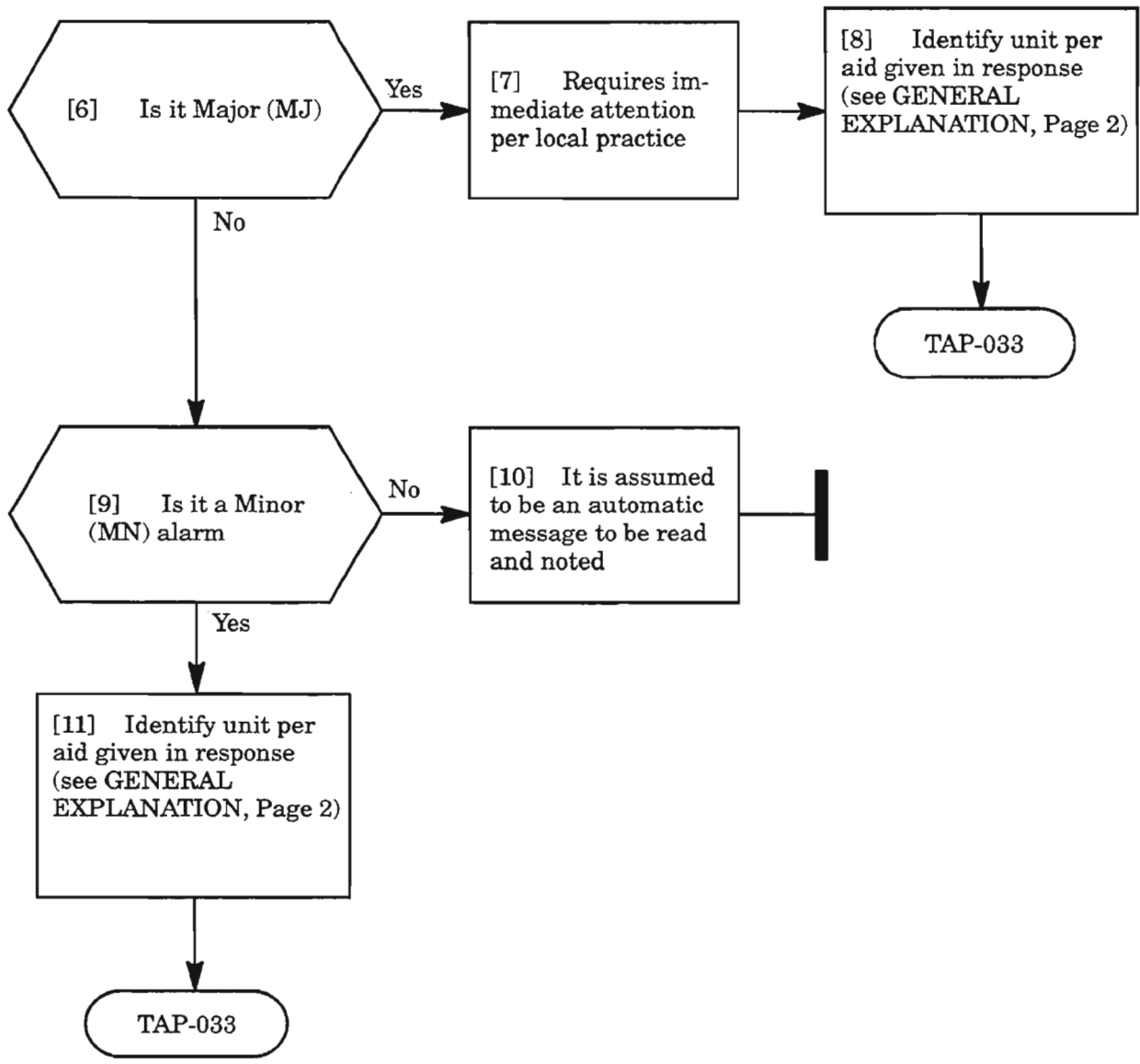
**[conddescr]** Detailed text description of the trouble; 1-62 alphanumeric characters

**[aiddet]** Supplementary equipment identification identifying the location of the reported trouble

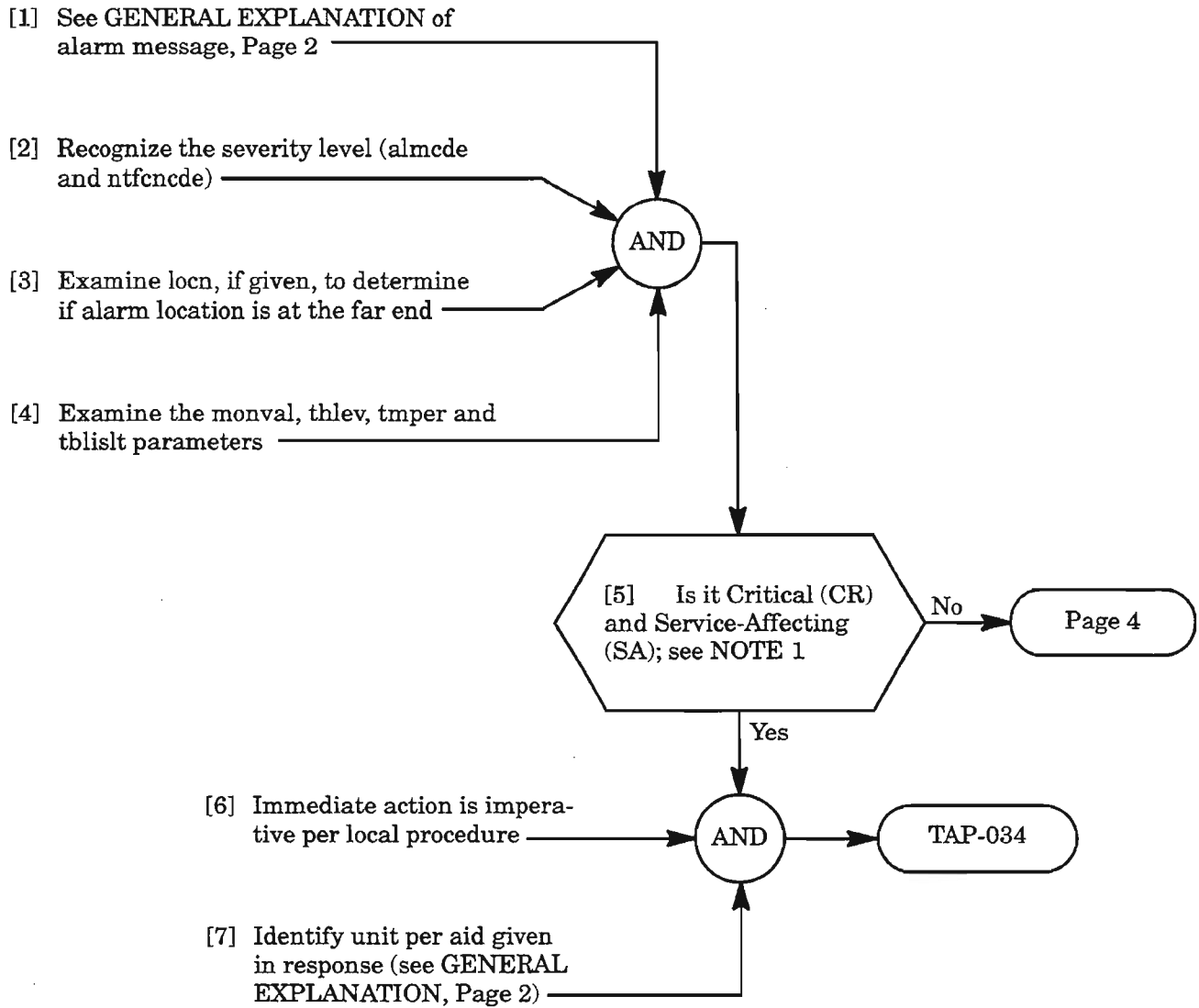
- A** A side
- B** B side
- AB** Both sides A and B

**[tblist]** Trouble isolation

- ISLTD** Isolated
- NIMAN** Not isolated, manual isolation required
- NIPSS** Not isolated, passed diagnostics







**NOTE: 1.** Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.

## GENERAL EXPLANATION

### MESSAGE

```
sid yy-mm-dd hh:mm:ss
almcde atag REPT ALM STS1
"aid:ntfncde,condsts,srveff,,,[locn],,[monval],
[thlev],[tmper]:[conddescr],[aidet]:,[tblislt]"
;
```

### PARAMETER EXPLANATION

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** Access identification code which is used to identify an STS1 path from which the alarms are reported. The format and values are:

lgx-stsab-stspath (format for line STS1 path)

- where lgx = **LG1, LG2**
- stsab = **STS1A, STS1B**
- stspath = **1, 2, or 3**

dgx-STST1-stspath (format for drop group STS1 path)

- where dgx = **DG1, DG2, DG3**
- stspath = **1**

**ntfncde** Alarm notification code

- CR** Critical alarm
- MJ** Major alarm
- MN** Minor alarm
- CL** Cleared alarm

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	059

REPT ALM STS1

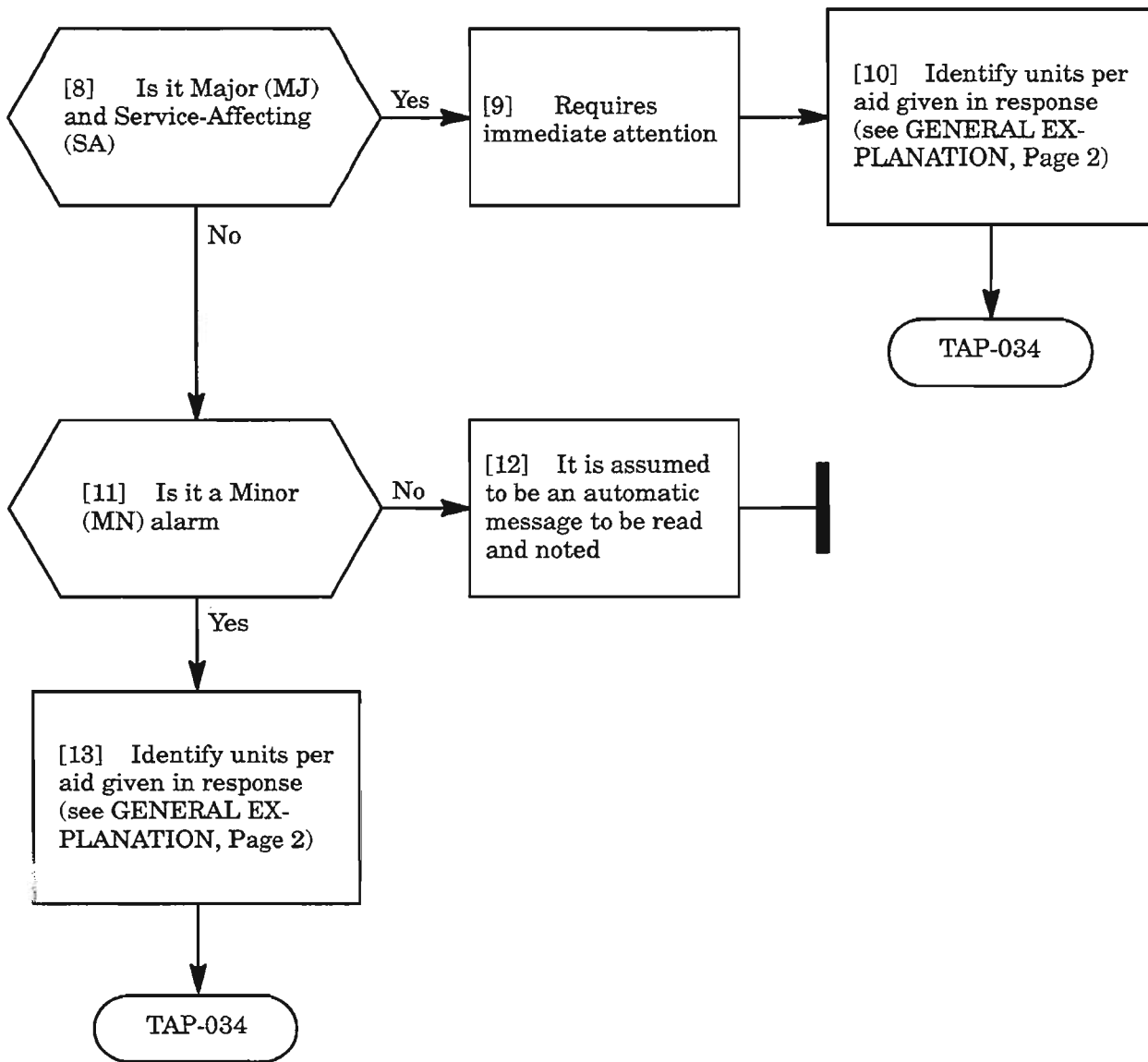
**GENERAL EXPLANATION (cont)**

**MESSAGE**

```
sid yy-mm-dd hh:mm:ss
almcde atag REPT ALM STS1
"aid:ntfcncde,condsts,srveff,,, [locn],[monval],
[thlev],[tmper]:[conddescr],[aiddet]:,[tblislt]"
;
```

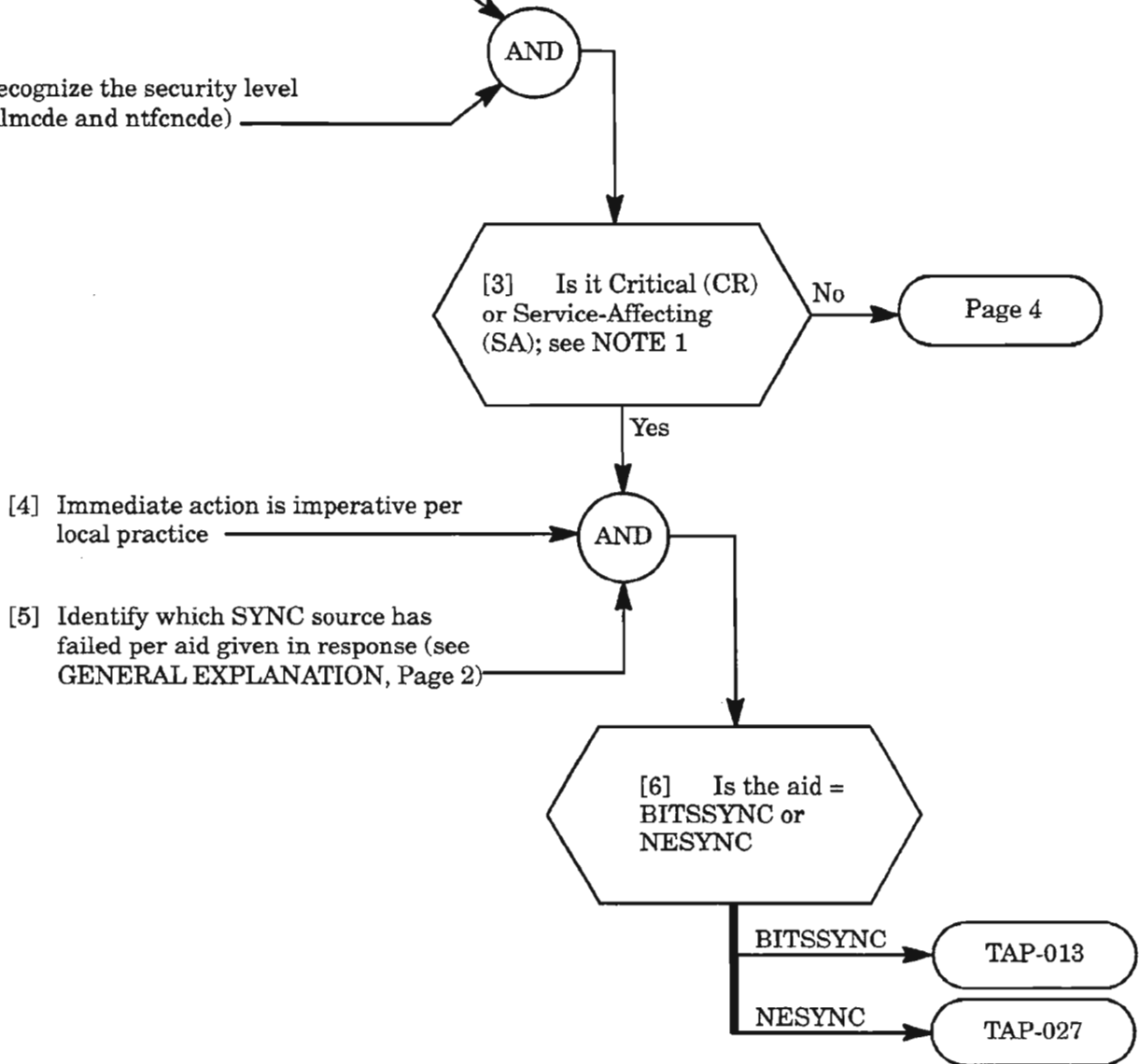
**PARAMETER EXPLANATION**

- condsts** Condition types of the STS1 entity path (see TNG-507, Table B, for alarm conditions and their definitions)
- srveff** Service effect
- NSA** Non-Service-affecting
  - SA** Service-affecting
- [locn]** Location where performance monitoring is reported
- FEND** Far end
  - NEND** Near end
- [monval]** Performance monitoring measured value. The range is 0...65534
- [thlev]** Performance monitoring threshold value that was exceeded
- [tmper]** Performance monitoring accumulation time period
- 15-MIN** 15-minute time period
  - 1-DAY** 1-day time period
- [conddescr]** Detailed text description of the trouble; 1-62 alphanumeric characters
- [aiddet]** Supplementary equipment identification identifying the location of the reported trouble
- A** A side
  - B** B side
  - AB** Both sides A and B
- [tblislt]** Trouble isolation
- ISLTD** Isolated
  - NIMAN** Not isolated, manual isolation required
  - NIPSS** Not isolated, passed diagnostics



[1] See GENERAL EXPLANATION of alarm message, Page 2

[2] Recognize the security level (almcde and ntfncde)



**NOTE:** 1. Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.

## GENERAL EXPLANATION

### MESSAGE

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM SYNCN  
"aid:ntfncde,condsyncn,srveff:[conddescr],[aiddet]:,[tblislt]"  
;
```

### PARAMETER EXPLANATION

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** Access identification code used to identify the synchronization type from which the alarms are reported. The values are:

- BITSSYNCA** Clocks used for BITS synchronization for A side
- BITSSYNCB** Clocks used for BITS synchronization for B side
- NESYNCA** Clocks used for the NE's system timing for A side
- NESYNCB** Clocks used for the NE's system timing for B side

**ntfncde** Alarm notification code

- CR Critical alarm
- MJ Major alarm
- MN Minor alarm
- CL Cleared alarm

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 5	060

REPT ALM SYNCN

**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM SYNCN  
"aid:ntfcncde,condsyncn,srveff:[conddescr],[aiddet]:,[tblislt]"  
;

**PARAMETER EXPLANATION**

**condsyncn**

The condition types for synchronization (see TNG-507, Table B, for alarm conditions and their definitions)

**srveff**

Service effect

**NSA** Non-service-affecting

**SA** Service-affecting

**[conddescr]**

Detailed text description of the trouble; 1-62 alphanumeric characters

**[aiddet]**

Supplementary equipment identification identifying the location of the reported trouble

**A** A side

**B** B side

**AB** Both sides A and B

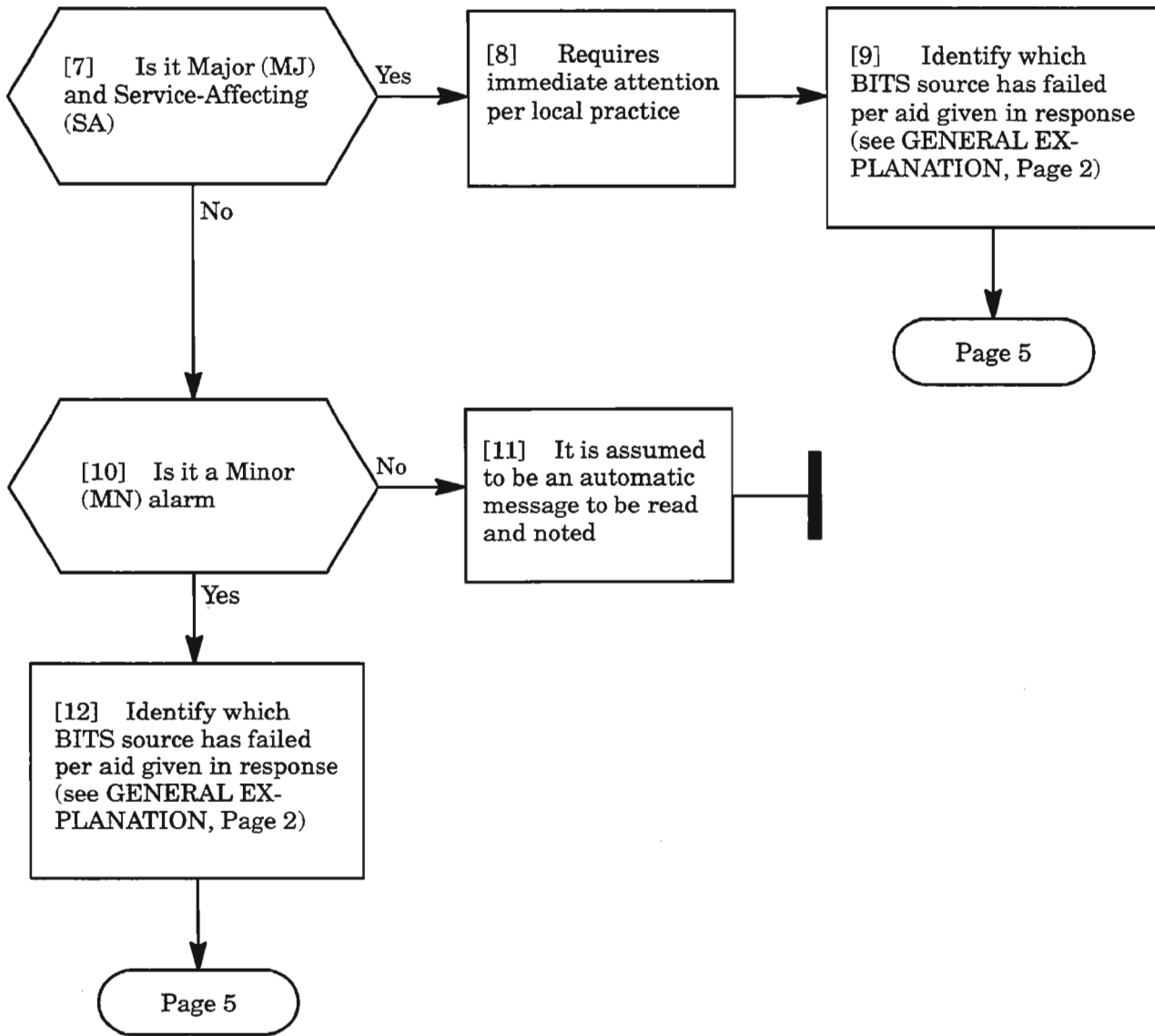
**[tblislt]**

Trouble isolation

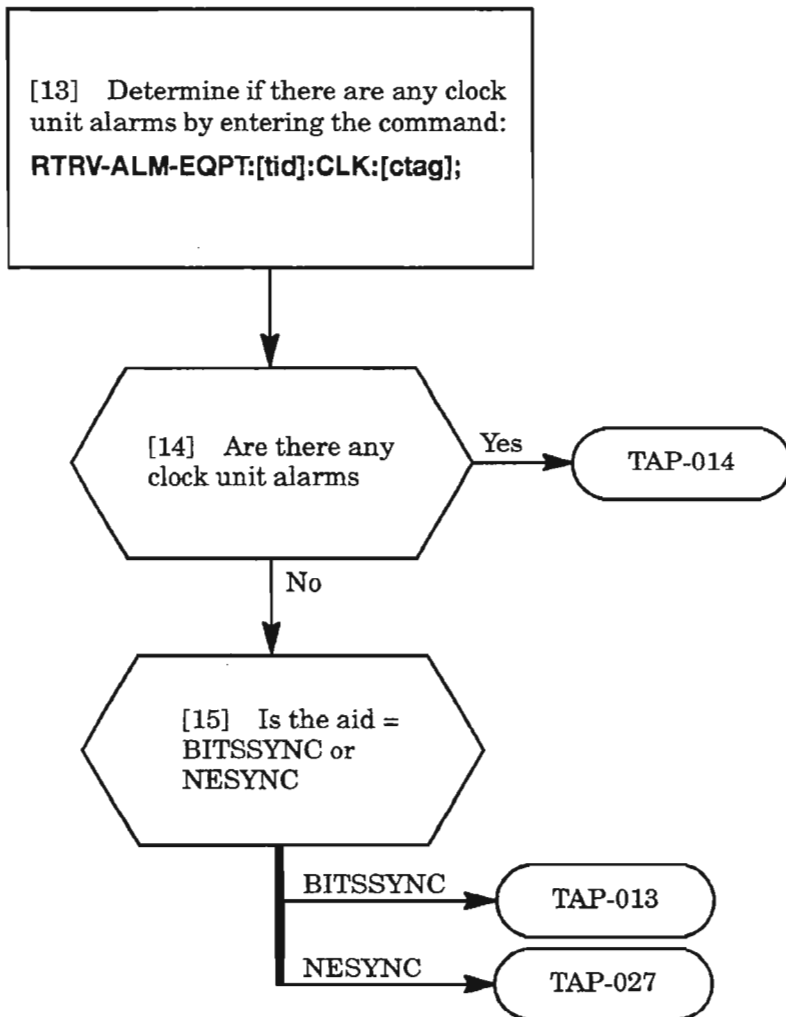
**ISLTD** Isolated

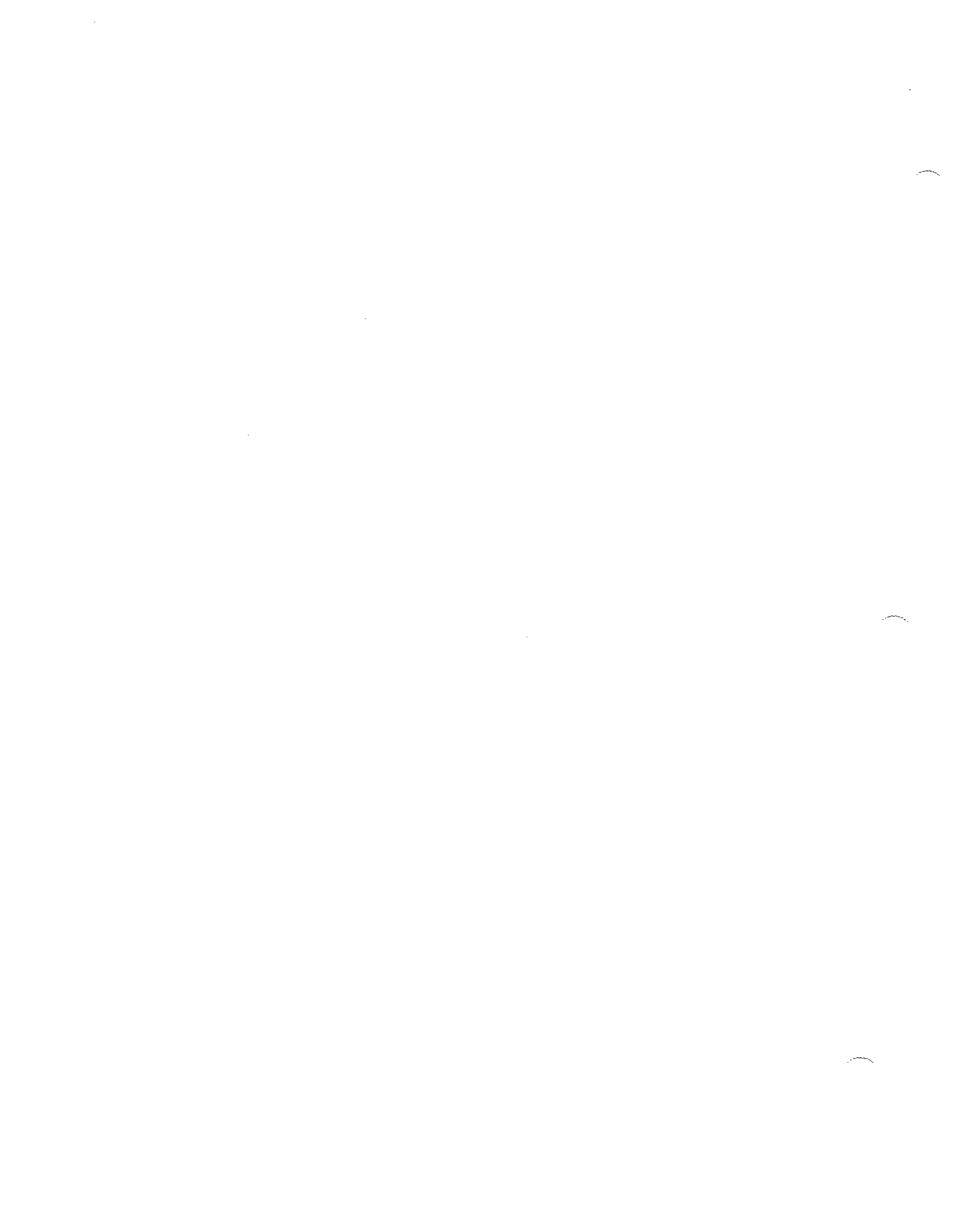
**NIMAN** Not isolated, manual isolation required

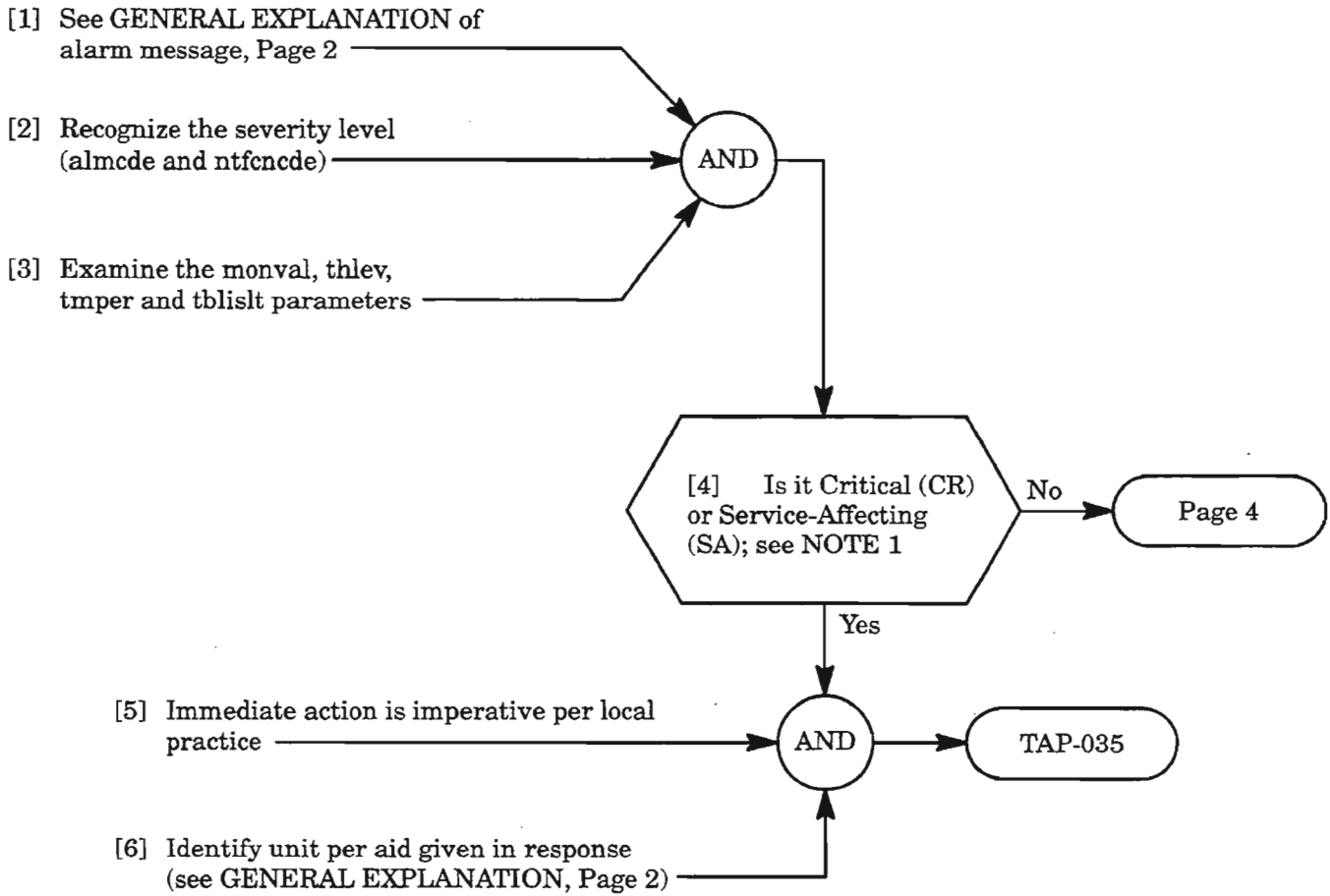
**NIPSS** Not isolated, passed diagnostics











**NOTE: 1.** Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.

## GENERAL EXPLANATION

### MESSAGE

```
sid yy-mm-dd hh:mm:ss
almcde atag REPT ALM T1
  "aid:ntfcncde,condt1,srveff,,,,,[monval],[thlev],
    [tmper]:[conddescr],[aiddet]:,[tblislt]"
;
```

### PARAMETER EXPLANATION

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C** Critical alarm
- \*\*** Major alarm
- \*** Minor alarm
- A** Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** Access identification code. The format and values are:  
dgx-T1-ds1 port (format for T1 facility)  
where: dgx = **DG1, DG2, DG3**  
ds1port = **1...28**

**ntfcncde** Alarm notification code

- CR** Critical alarm
- MJ** Major alarm
- MN** Minor alarm
- CL** Cleared alarm

*Continued on next page*

ISSUE 2	JULY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	061

REPT ALM T1

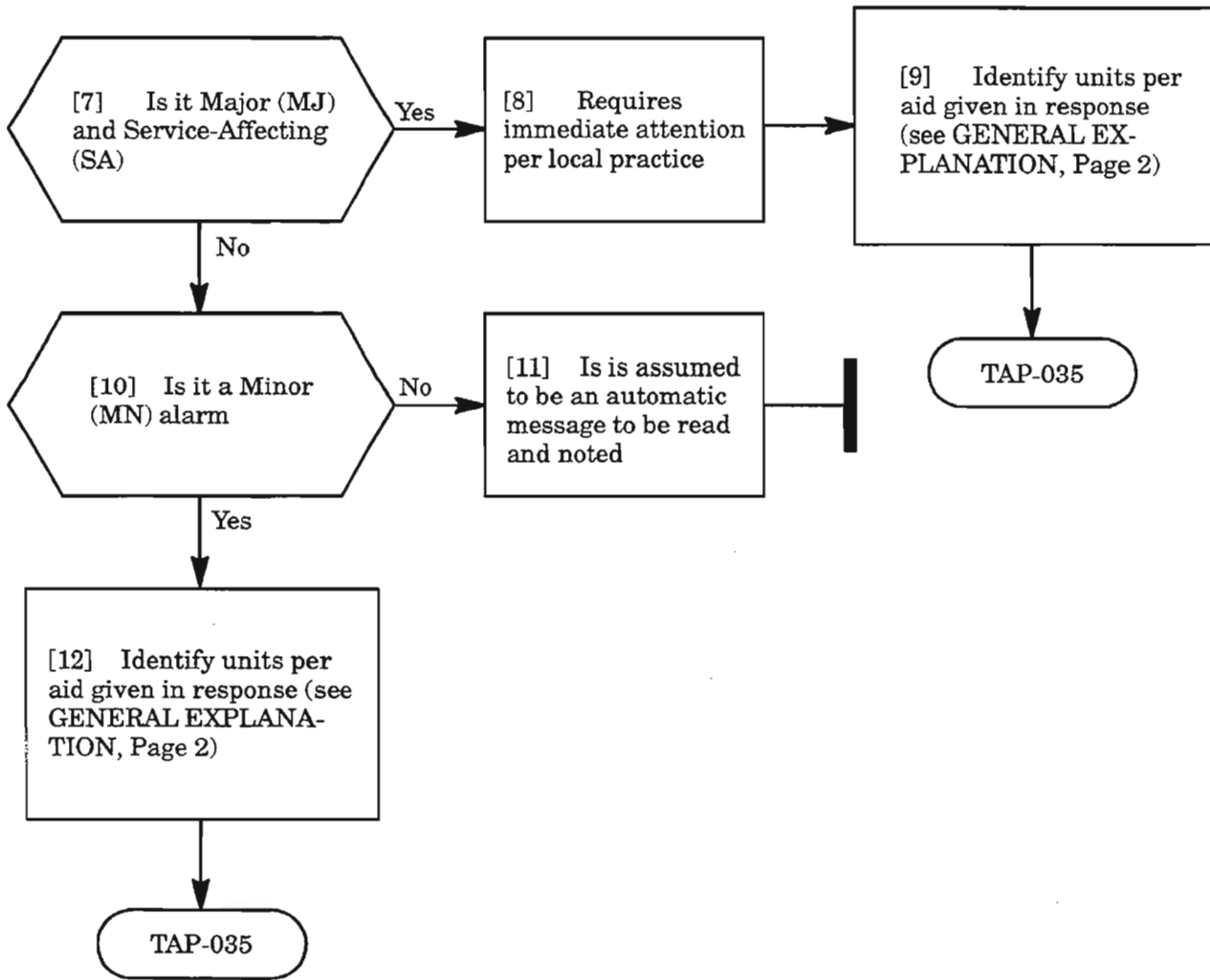
**GENERAL EXPLANATION (cont)**

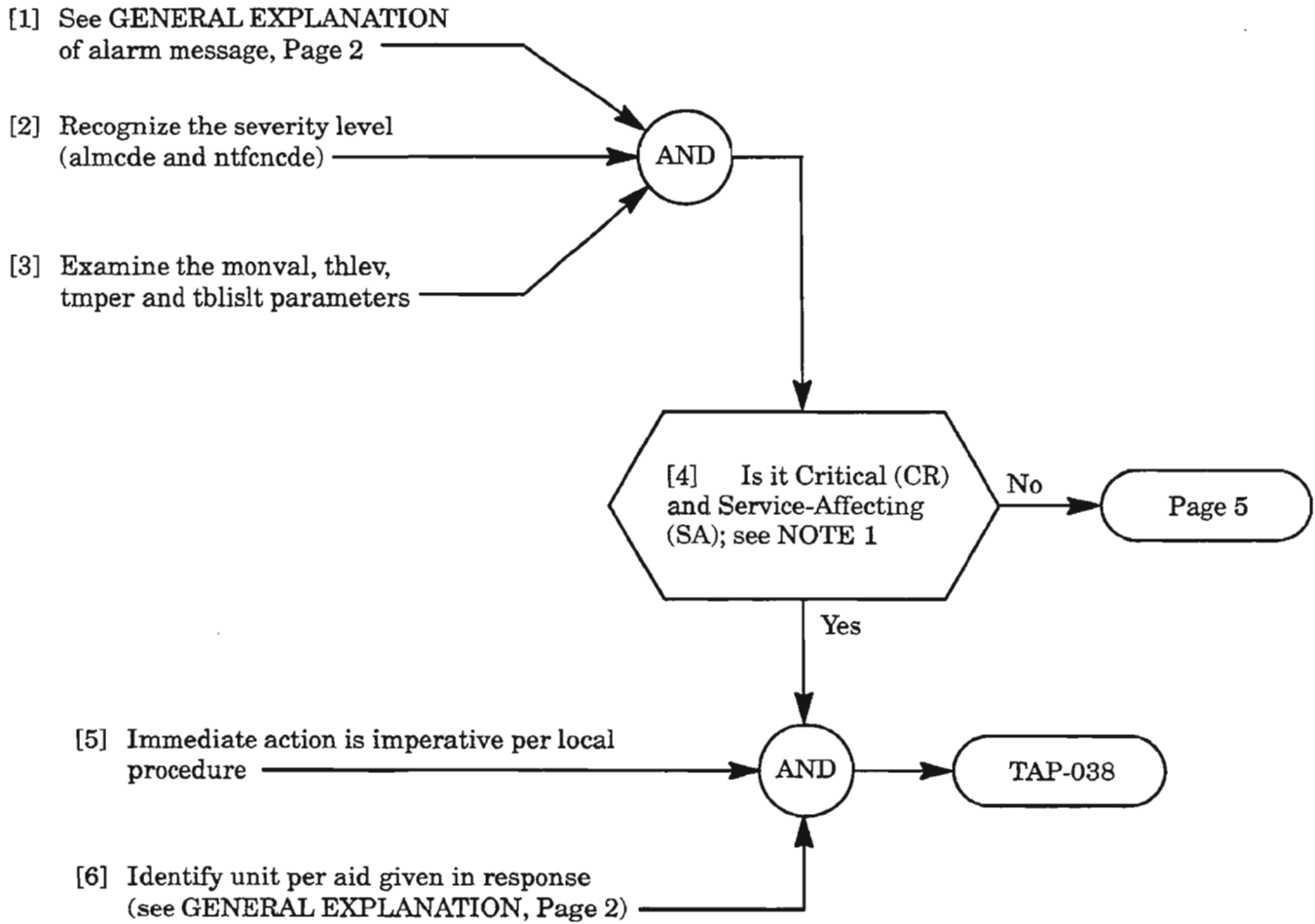
**MESSAGE**

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM T1  
"aid:ntfcncde,condt1,srveff,,,,[monval],[thlev],  
[tmper]:[conddescr],[aiddet]:,[tblislt]"  
;
```

**PARAMETER EXPLANATION**

- condt1** Condition types of the DS1 entity (see TNG-507, Table B, for alarm conditions and their definitions)
- srveff** Service effect  
NSA Non-service-affecting  
SA Service-affecting
- [monval]** Performance monitoring measured value. The range is **0...4,294,967,295**
- [thlev]** Performance monitoring threshold value that was exceeded
- [tmper]** Performance monitoring accumulation time period:  
15-MIN 15-minute time period  
1-DAY 1-day time period
- [conddescr]**  
Detailed text description of the trouble; 1-62 alphanumeric characters
- [aiddet]** Supplementary equipment identification identifying the location of the reported trouble  
A A side  
B B side  
AB Both sides A and B
- [tblislt]** Trouble isolation  
ISLTD Isolated  
NIMAN Not isolated, manual isolation required  
NIPSS Not isolated, passed diagnostics





**NOTE:** 1. Typically, all critical alarms are service-affecting, but not all service-affecting alarms are critical.

## GENERAL EXPLANATION

### MESSAGE

```
sid yy-mm-dd hh:mm:ss
almcde atag REPT ALM VT1
"aid:ntfcncde,condvt,srveff,,,[locn],,
[monval],[thlev],[tmper]:[conddescr],[aiddet]:,[tblislt]"
;
```

### PARAMETER EXPLANATION

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

- \*C Critical alarm
- \*\* Major alarm
- \* Minor alarm
- A Automatic message

**atag** Automatic tag, a numerical sequence of the messages reported

**aid** The access identification code which is used to identify a VT path from which the alarms are reported. The formats and values are:

lgx-vtab-stspath-vtpath (format for line group, VT1 paths)

where: lgx = **LG1, LG2**  
vtab = **VT1A, VT1B**  
stspath = **1, 2, 3**  
vtpath = **1...28**

dgx-VT1-stspath-vtpath (format for drop group, VT1 paths)

where: dgx = **DG1, DG2, DG3**  
stspath = **1**  
vtpath = **1...28**

*Continued on next page*

ISSUE 1	MAY 1994
ACL 363-203-502	TAP
PAGE 2 of 5	062

REPT ALM VT1



**GENERAL EXPLANATION (cont)**

**MESSAGE**

```
sid yy-mm-dd hh:mm:ss
almcde atag REPT ALM VT1
"aid:ntfcncde,condvt,srveff,,, [locn],,
[monval],[thlev],[tmper]:[conddescr],[aiddet]:,[tblislt]"
;
```

**PARAMETER EXPLANATION**

- ntfcncde** Alarm notification code
- CR** Critical alarm
  - MJ** Major alarm
  - MN** Minor alarm
  - CL** Cleared alarm
- condvt** The condition types of the VT path (see TNG-507, Table B, for alarm conditions and their definitions)
- srveff** Service effect
- NSA** Non-service-affecting
  - SA** Service-affecting
- [locn]** Location where performance monitoring is reported
- FEND** Far end
  - NEND** Near end
- [monval]** Performance monitoring measured value. The range is **0...65534**
- [thlev]** Performance monitoring threshold value that was exceeded
- [tmper]** Performance monitoring accumulation time period:
- 15-MIN** 15-minute time period
  - 1-DAY** 1-day time period

*Continued on next page*

**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT ALM VT1  
"aid:ntfncde,condvt,srveff,,, [locn],,  
[monval],[thlev],[tmper]:[conddescr],[aiddet]:,[tblislt]"  
;

**PARAMETER EXPLANATION**

**[conddescr]**

Detailed text description of the trouble; 1-62 alphanumeric characters

**[aiddet]**

Supplementary equipment identification identifying the location of the reported trouble

**A** A side

**B** B side

**AB** Both sides A and B

**[tblislt]**

Trouble isolation

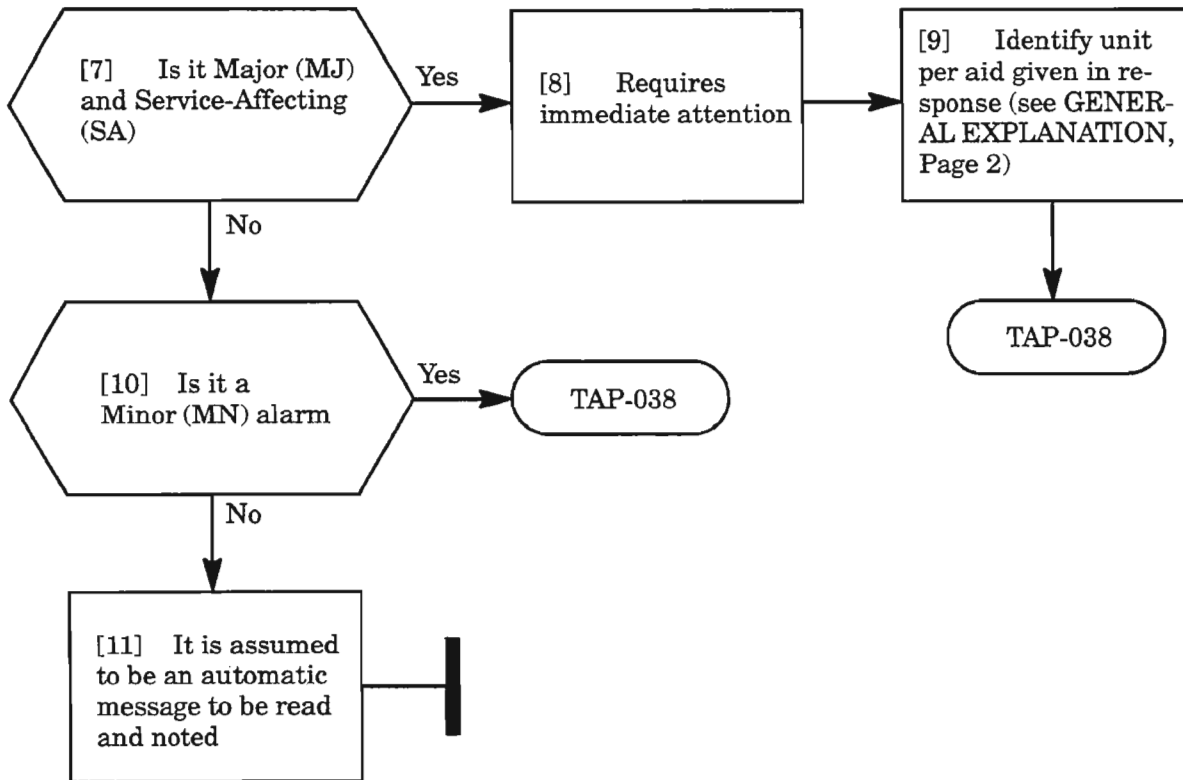
**ISLTD** Isolated

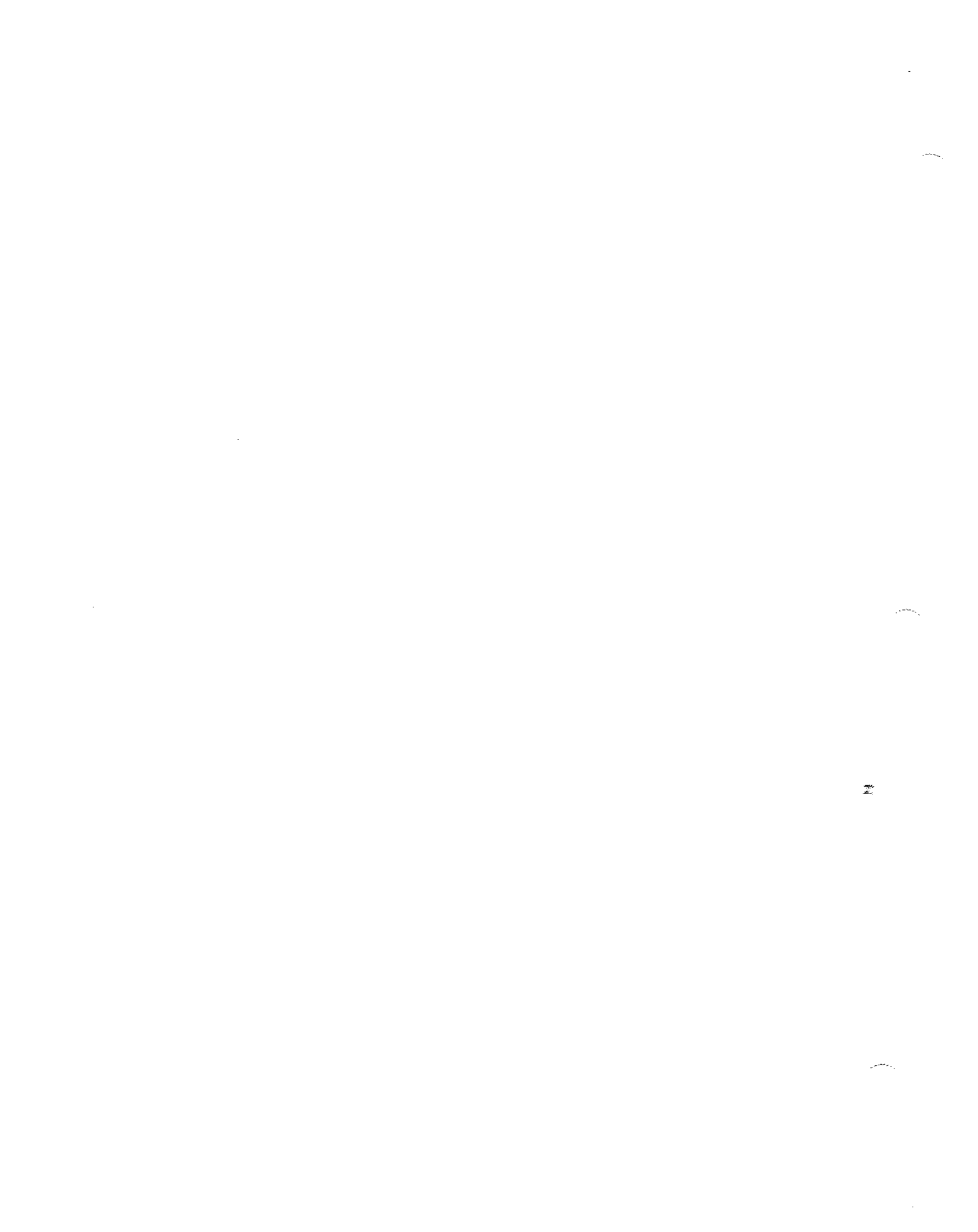
**NIMAN** Not isolated, manual isolation required

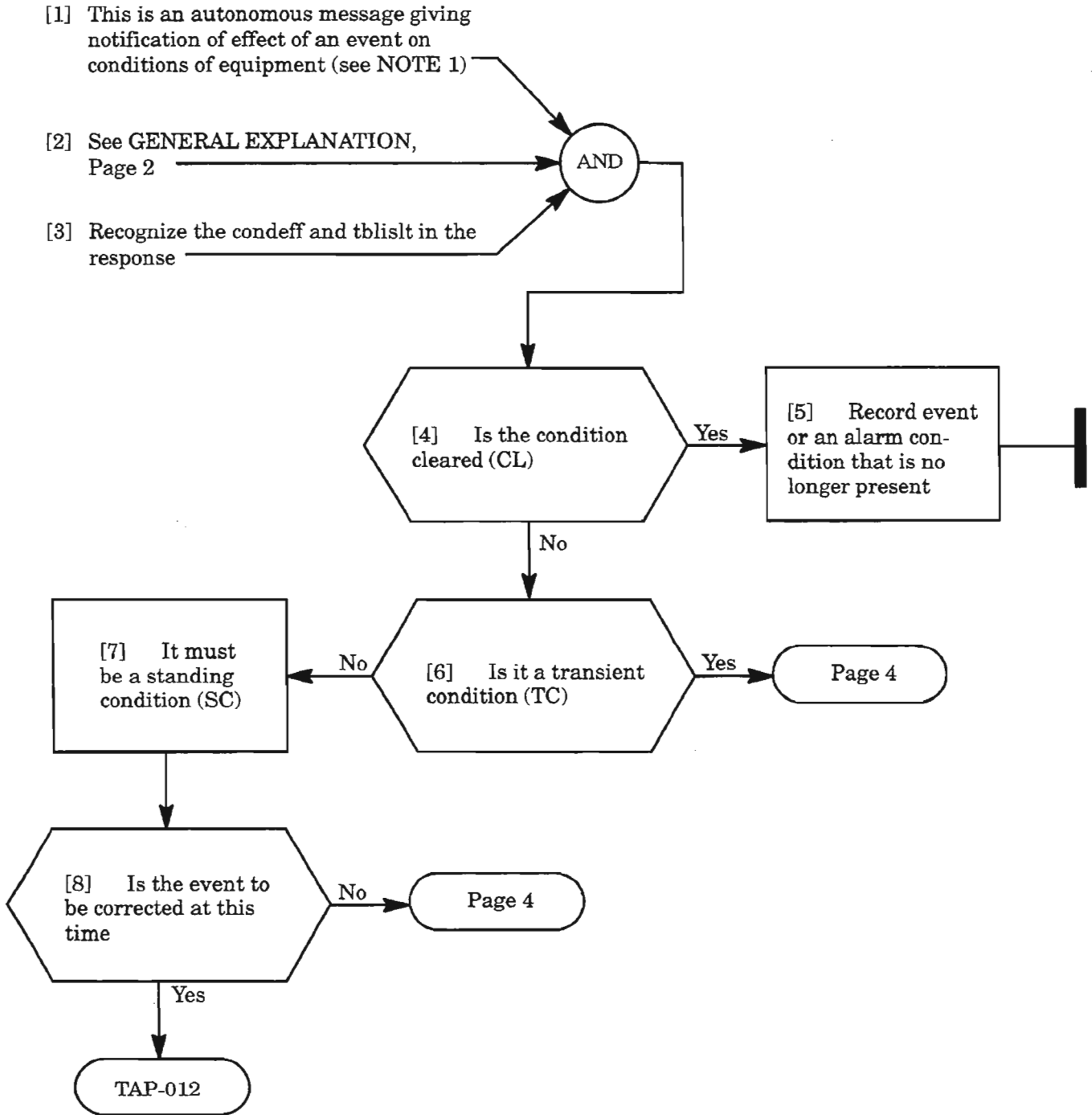
**NIPSS** Not isolated, passed diagnostics

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 4 of 5	062

**REPT ALM VT1**







**NOTE:** 1. An alarm/condition may be provisioned to be an event (not alarmed).

## GENERAL EXPLANATION

### MESSAGE

```
sid yy-dd hh:mm:ss  
almcde atag REPT EVT BITS  
  "aid:condbits,condeff:[conddescr],[aiddet]:,[tblislt]"  
  
;
```

### PARAMETER EXPLANATION

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

A Automatic message

**atag** Automatic tag, a numerical sequence

**aid** Access identification code which is used to identify the synchronous BITS source that caused the alarm message. The values are:

**SYNCPRI** Primary sync BITS source

**SYNCSEC** Secondary sync BITS source

**condbits** Condition types of the BITS (Building Integrated Timing System) (see TNG-507, Table B, for alarm conditions and their definitions)

**condeff** Effect of an event on the condition of the NE

**CL** Standing condition cleared

**SC** Standing condition raised

**TC** Transient raised

**[conddescr]**  
Detailed text description of the trouble; 1-62 alphanumeric characters

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	063

REPT EVT BITS

**GENERAL EXPLANATION (cont)**

**MESSAGE**

```
sid yy-dd hh:mm:ss  
almcde atag REPT EVT BITS  
"aid:condbits,condeff:[conddescr],[aiddet]:,[tblislt]"  
  
;
```

**PARAMETER EXPLANATION**

**[aiddet]** Supplementary equipment identification identifying the location of the reported trouble

**A** A side

**B** B side

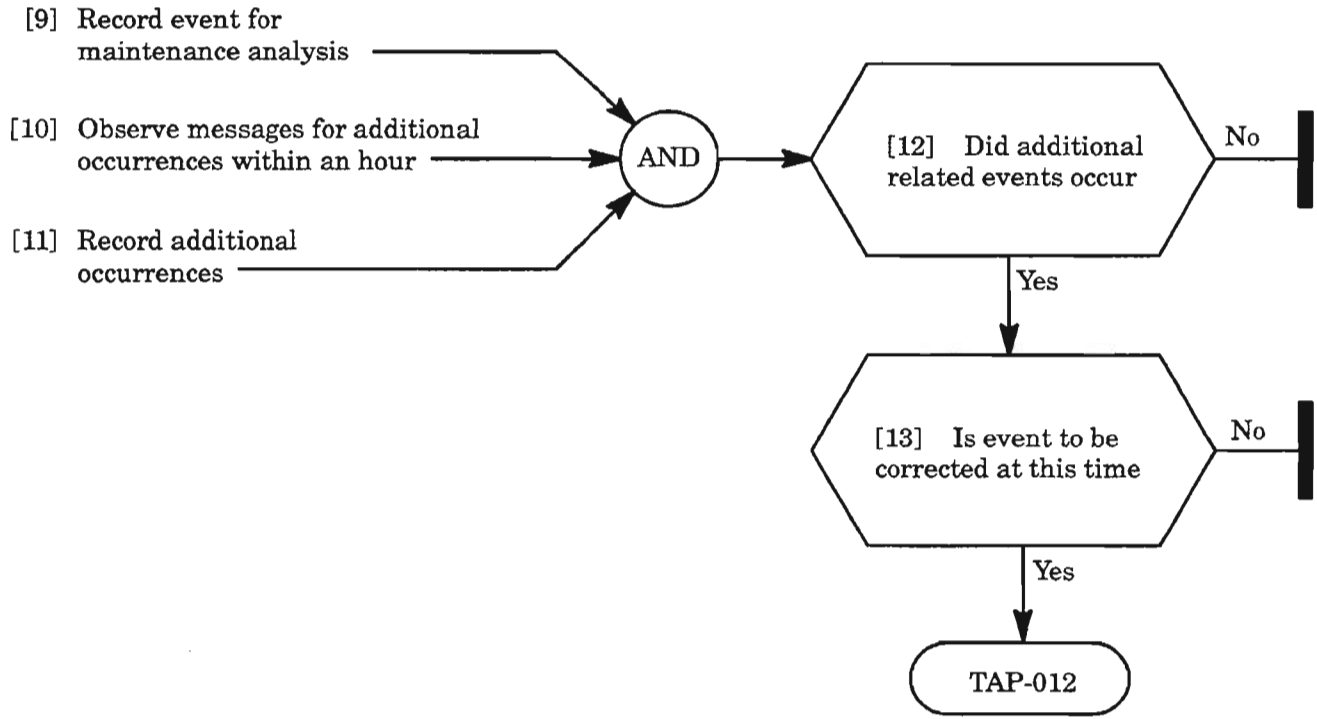
**AB** Both sides A and B

**[tblislt]** Trouble isolation

**ISLTD** Isolated

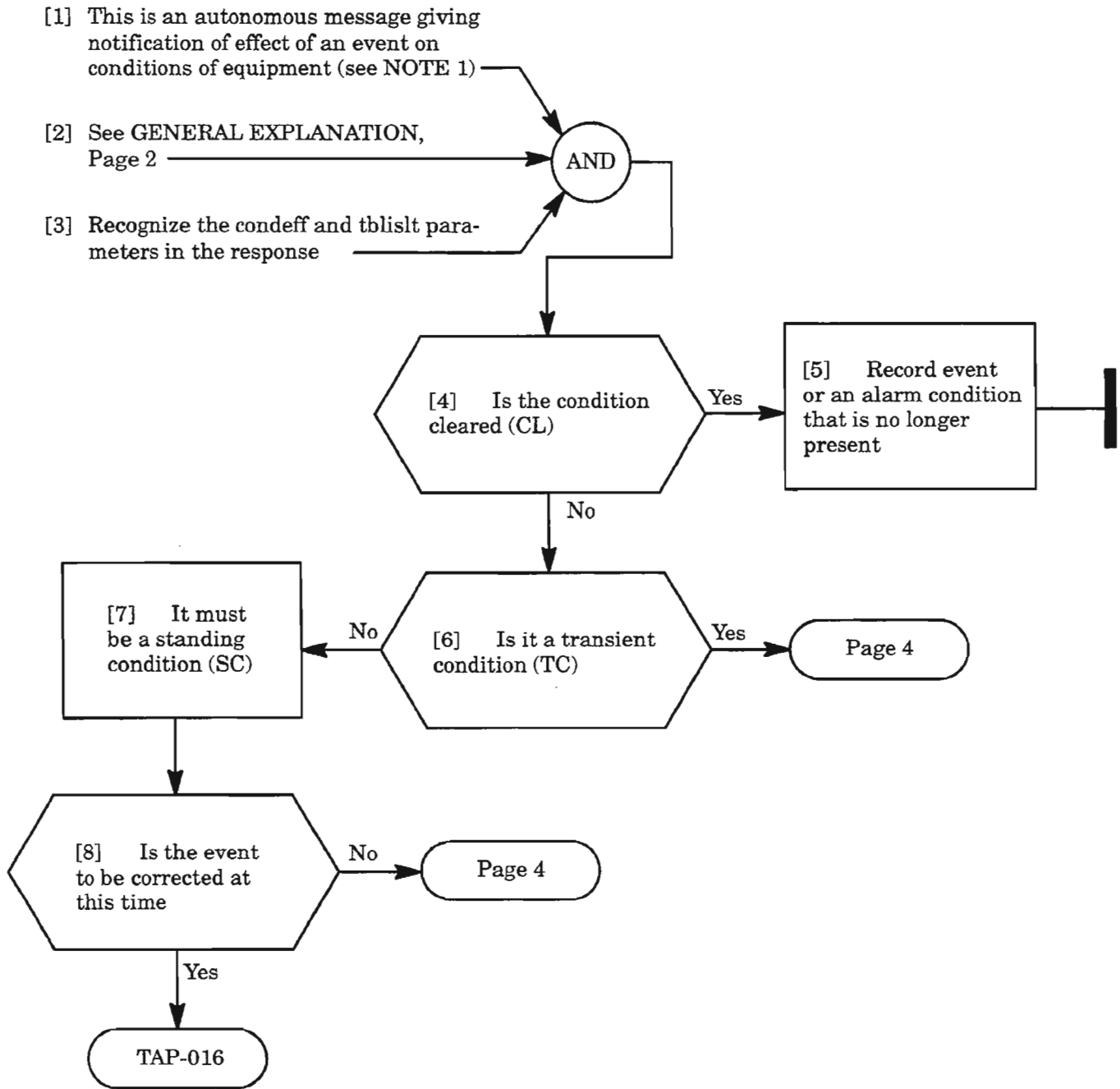
**NIMAN** Not isolated, manual isolation required

**NIPSS** Not isolated, passed diagnostics



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 4 of 4	063





**NOTE:** 1. An alarm / condition may be provisioned to be an event (not alarmed).

## GENERAL EXPLANATION

### MESSAGE

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT EVT COM  
"aid:condcom,condeff:[conddescr],[aiddet]:,[tblislt]"  
  
;
```

### PARAMETER EXPLANATION

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

**A** Automatic message

**atag** Automatic tag, a numerical sequence

**aid** Access identification code used to identify the common equipment/NE from which the alarms are reported. The valid parameter is **COM**

**condcom** Condition types of the common equipment or NE (see TNG-507, Table B, for alarm conditions and their definitions)

**condeff** Effect of an event on the condition of the NE

**CL** Standing condition cleared

**SC** Standing condition raised

**TC** Transient condition

**[conddescr]** Detailed text description of the trouble; 1-62 alphanumeric characters

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 5	064

REPT EVT COM

**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT EVT COM  
"aid:condcom,condeff:[conddescr],[aiddet]:,[tblislt]"  
;

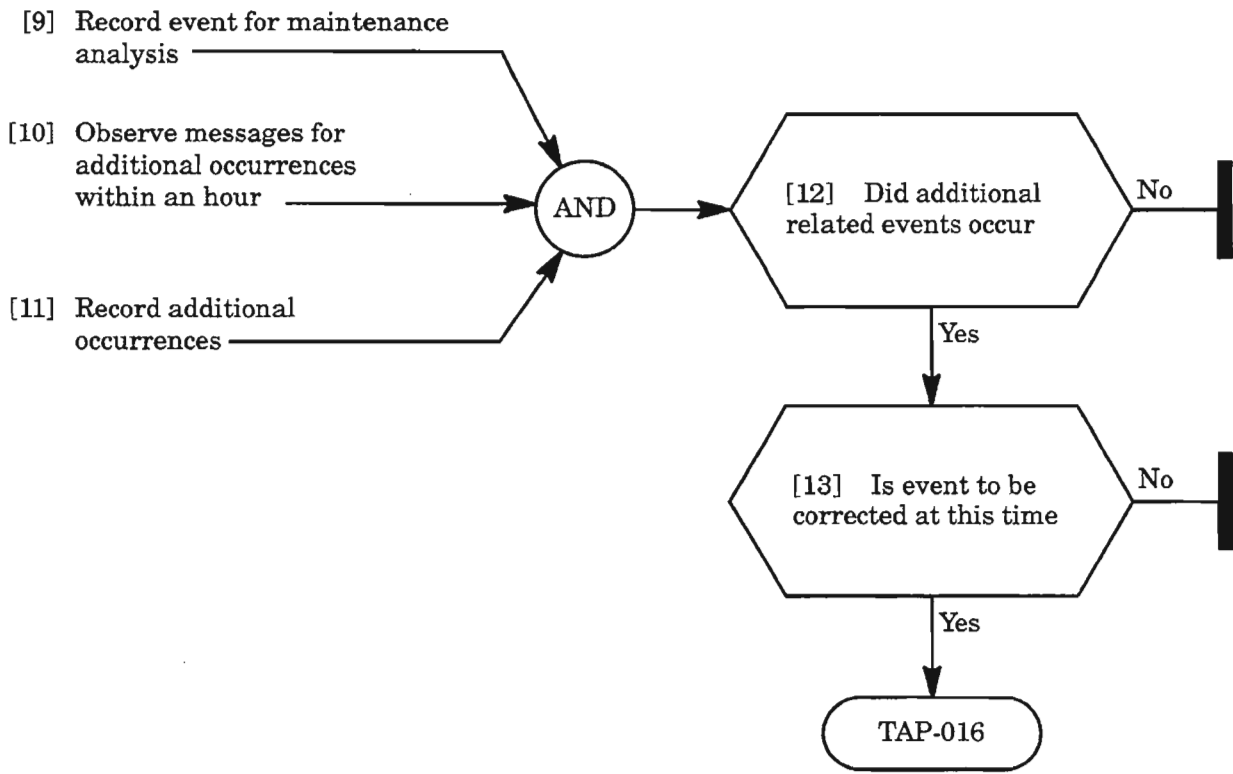
**PARAMETER EXPLANATION**

**[aiddet]** Supplementary equipment identification identifying the location of the reported trouble

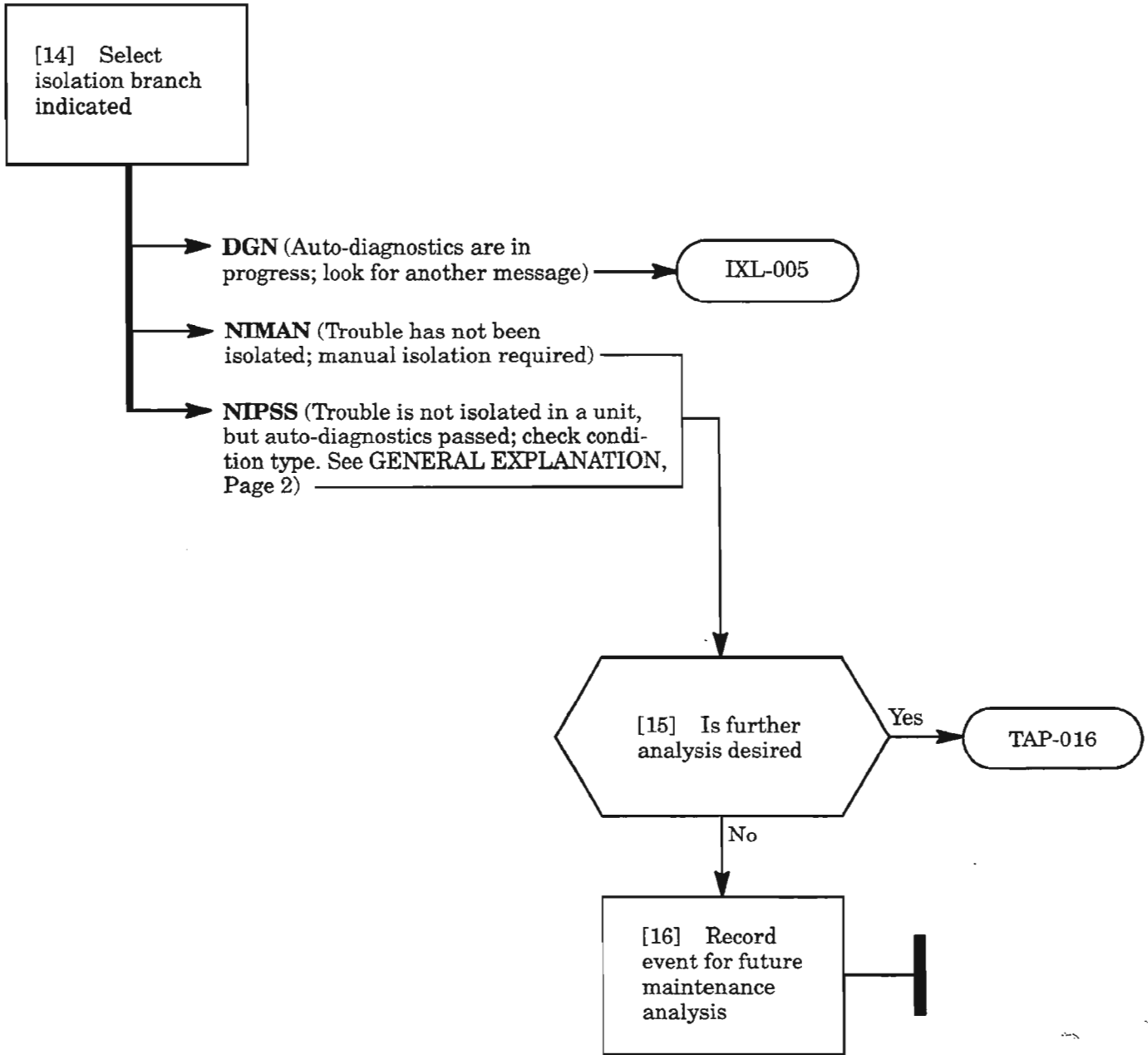
- A** A side
- B** B side
- AB** Both sides A and B

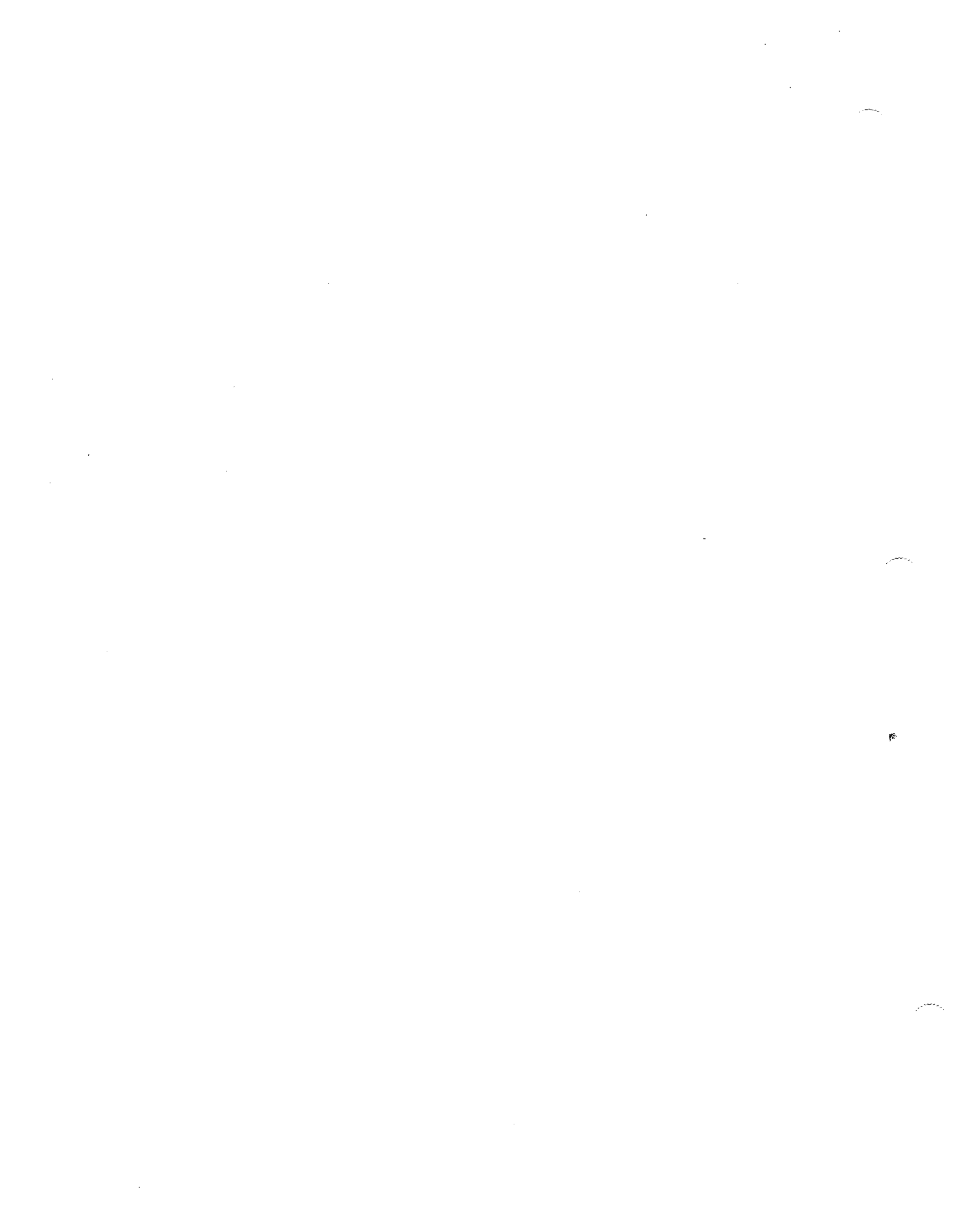
**[tblislt]** Trouble isolation

- ISLTD** Isolated
- NIMAN** Not isolated, manual isolation required
- NIPSS** Not isolated, passed diagnostics



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 4 of 5	064

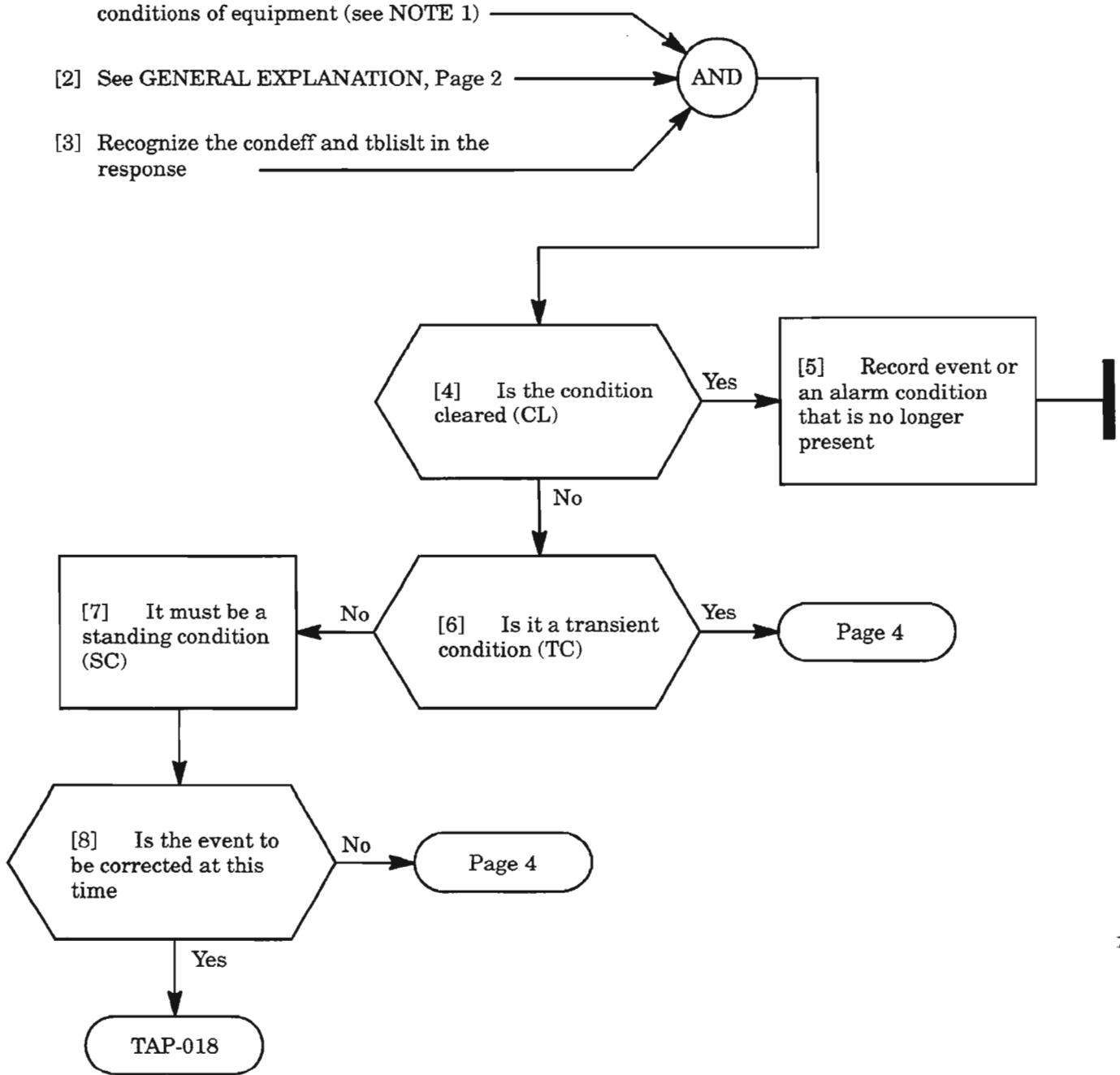




[1] This is an autonomous message giving notification of effect of an event on conditions of equipment (see NOTE 1)

[2] See GENERAL EXPLANATION, Page 2

[3] Recognize the condeff and tblislt in the response



**NOTE: 1.** An alarm/condition may be provisioned to be an event (not alarmed).

**GENERAL EXPLANATION**

**MESSAGE**

```
sid yy-mm-dd hh:mm:ss  
almcde atag REPT EVT DLMAP  
"netid:cond1,condeff:[conddescr],[aiddet]:,[tblislt]"  
;
```

**PARAMETER EXPLANATION**

**sid** System Identification Code of the Network Element (NE)

**yy** Last two digits of the year

**mm** Month of the year in two digits

**dd** Day of the month

**hh** Hour of the day

**mm** Minutes of the hour

**ss** Seconds of the minute

**almcde** Alarm code

**A** Automatic message

**atag** Automatic tag, a numerical sequence

**netid** Terminal identification code which is used to identify the NE from which the alarms are reported; 1-20 alphanumeric characters

**cond1** Condition of data link map (see TNG-507, Table B, for alarm conditions and their definitions)

**condeff** Effect of an event on the condition of the NE

**CL** Standing condition cleared

**SC** Standing condition raised

**TC** Transient condition

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	065

**REPT EVT DLMAP**



**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT EVT DLMAP  
"netid:cond1,condeff:[conddescr],[aiddet]:,[tblist]"  
;

**PARAMETER EXPLANATION**

**[conddescr]**

Detailed text description of the trouble; 1-62 alphanumeric characters

**[aiddet]**

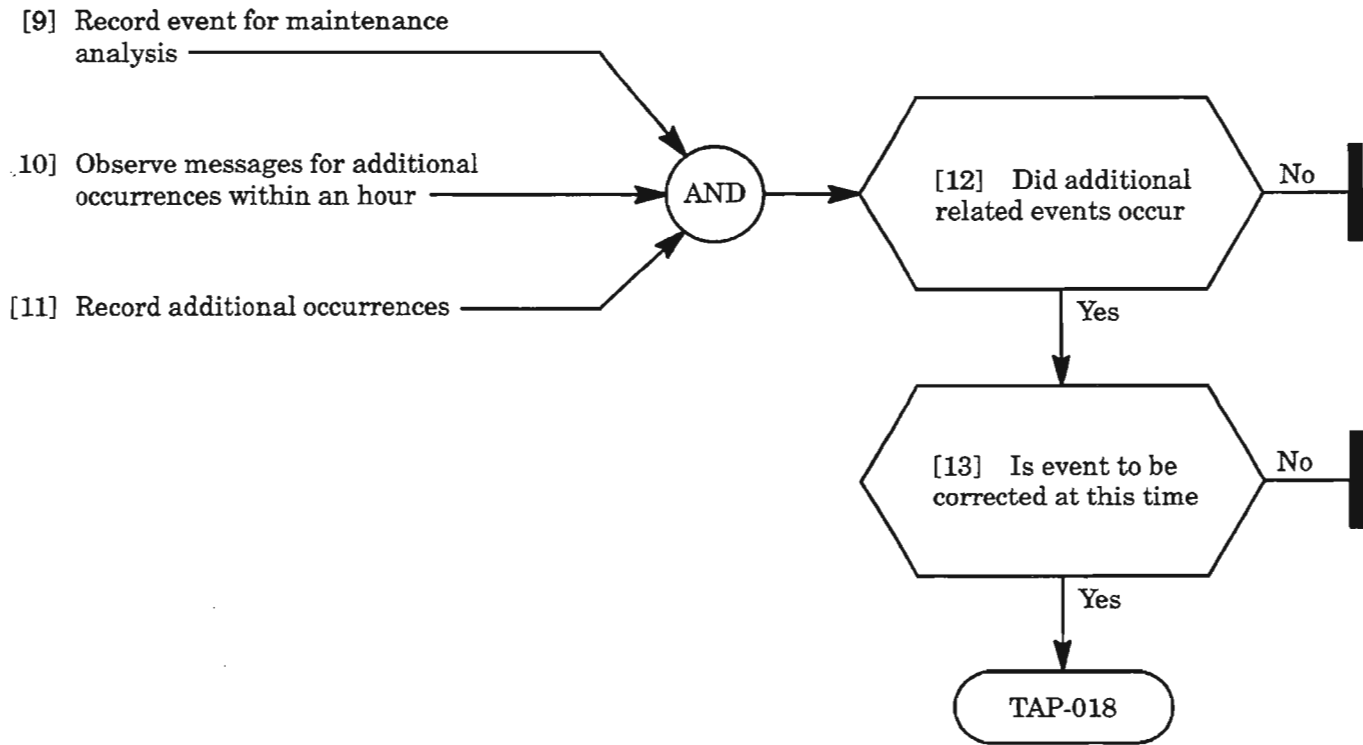
Supplementary equipment identification identifying the location of the reported trouble

- A**      A side
- B**      B side
- AB**     Both sides A and B

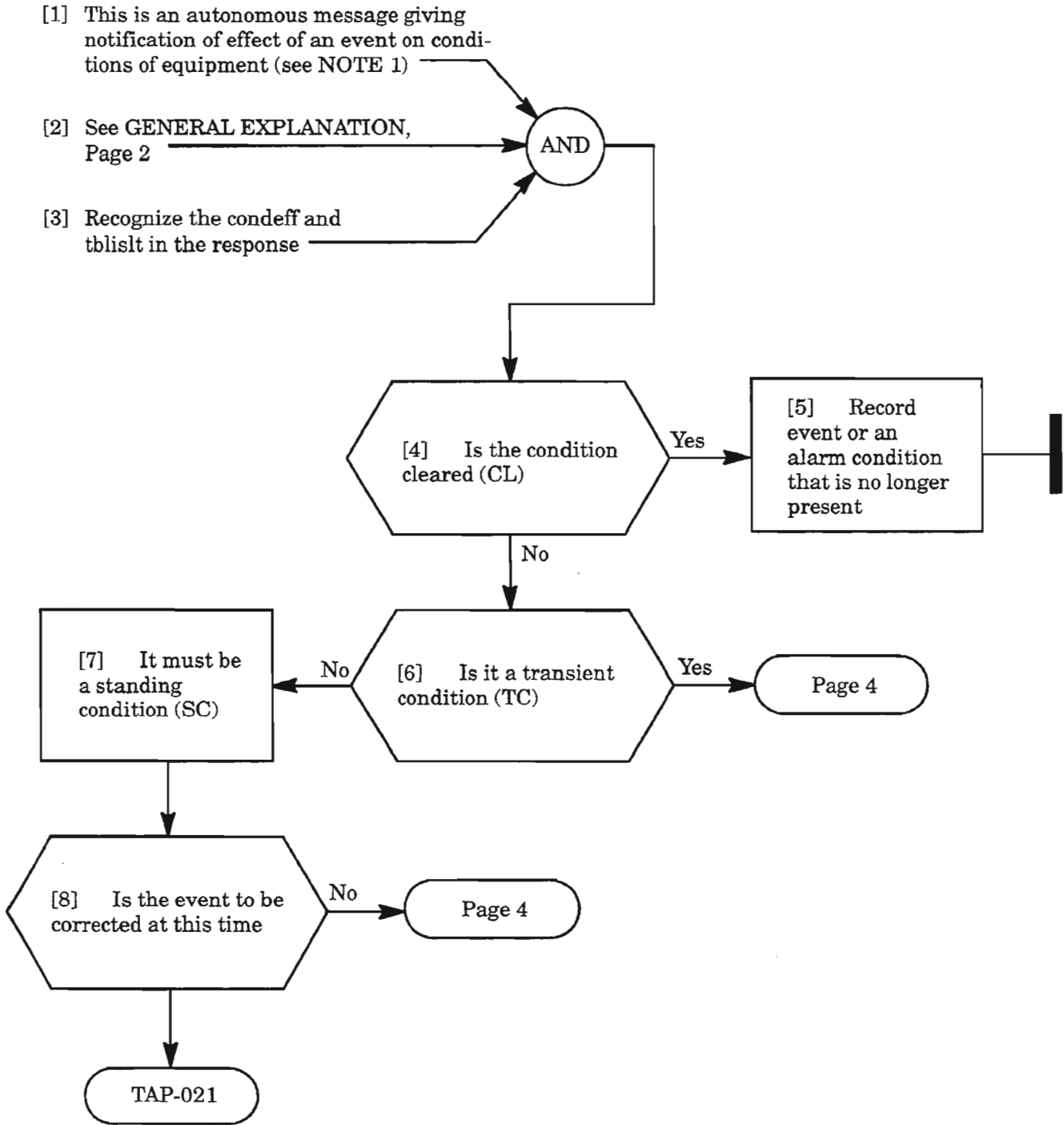
**[tblist]**

Trouble isolation

- ISLTD**      Isolated
- NIMAN**     Not isolated, manual isolation required
- NIPSS**     Not isolated, passed diagnostics



ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 4 of 4	065



**NOTE: 1.** An alarm / condition may be provisioned to be an event (not alarmed)

**GENERAL EXPLANATION**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT EVT EQPT  
"aid:condeqpt,condeff:[conddescr],[aiddet]:,[tblislt]"  
;

**PARAMETER EXPLANATION**

**sid** System Identification Code of the Network Element (NE)  
**yy** Last two digits of the year  
**mm** Month of the year in two digits  
**dd** Day of the month  
**hh** Hour of the day  
**mm** Minutes of the hour  
**ss** Seconds of the minute

**almcde** Alarm code  
**A** Automatic message

**atag** Automatic tag, a numerical sequence

**aid** Access identification code (unit) which is used to identify an equipment unit in which the event occurred. There are eight formats for the *aid*. The formats and values are:

- pba (printed board assembly - core)  
where: pba = **COA, NEPA, NEPB, VSCCA, VSCCB, CLKA, CLKB, PWRA, PWRB, PWRC, DG1A, DG1B, DG2A, DG2B, DG3A, DG3B**
- dgx-dmiab (format for DMI units)  
where: dgx = **DG1, DG2, DG3**  
dmiab = **DMIA, DMIB**
- dgx-intfa (drop group - interface a)  
where: dgx = **DG1, DG2, DG3**  
intfa = **DMIA, DMIB**
- dgx-VTG-vtgport (format for main VTG units)  
where: dgx = **DG1, DG2, DG3**  
vtgport = **1...7**
- dgx-VTG-P (format for protection VTG units)  
where: dgx = **DG1, DG2, DG3**
- dgx-lifab (format for LIF units)  
where: dgx = **DG1, DG2, DG3**  
lifab = **LIFA, LIFB**

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	TAP
PAGE 2 of 4	066

**GENERAL EXPLANATION (cont)**

**MESSAGE**

sid yy-mm-dd hh:mm:ss  
almcde atag REPT EVT EQPT  
"aid:condeqpt,condeff:[conddescr],[aiddet]:,[tblislt]"  
;

**PARAMETER EXPLANATION**

**aid (cont)**

dgx-ldrab-ldrport (format for LDR units)  
where: dgx = **DG1, DG2, DG3**  
ldrab = **LDRA, LDRB**  
ldrport = **1**  
lgx-hifab (format for HIF units)  
where: lgx = **LG1, LG2**  
hifab = **HIFA, HIFB**

**condeqpt** Condition of equipment (see TNG-507, Table B, for alarm conditions and their definitions)

**condeff** Effect of an event on the condition of the NE

**CL** Standing condition cleared  
**SC** Standing condition raised  
**TC** Transient raised

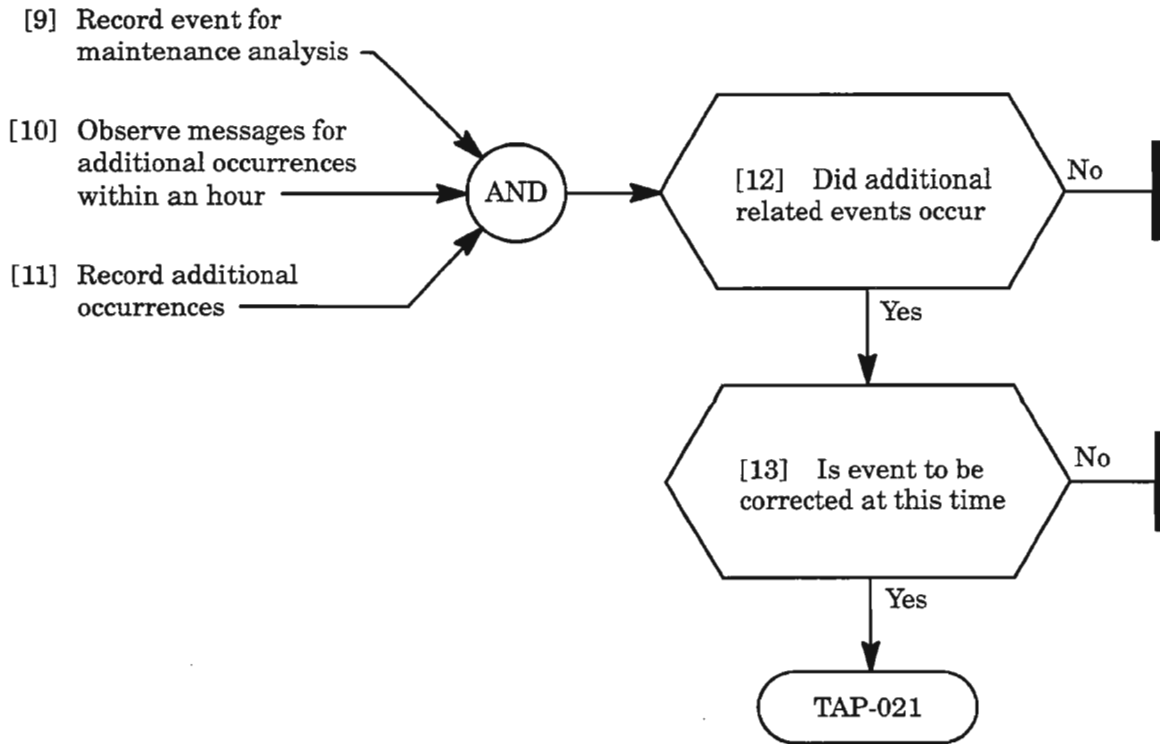
**[conddescr]**

Detailed text description of the trouble; 1-62 alphanumeric characters

**A** A side  
**B** B side  
**AB** Both sides A and B

**[tblislt]** Trouble isolation

**ISLTD** Isolated  
**NIMAN** Not isolated, manual isolation required  
**NIPSS** Not isolated, passed diagnostics



**[1] WARNING: Plug-in units contain static-sensitive devices. These devices are susceptible to static discharge damage in unconnected circuit conditions. The following procedure should always be followed when installing or removing the plug-in units.**

[2] A grounded wrist strap must be worn

[3] DO NOT touch circuit traces or components. Handle the units at front and side edges only

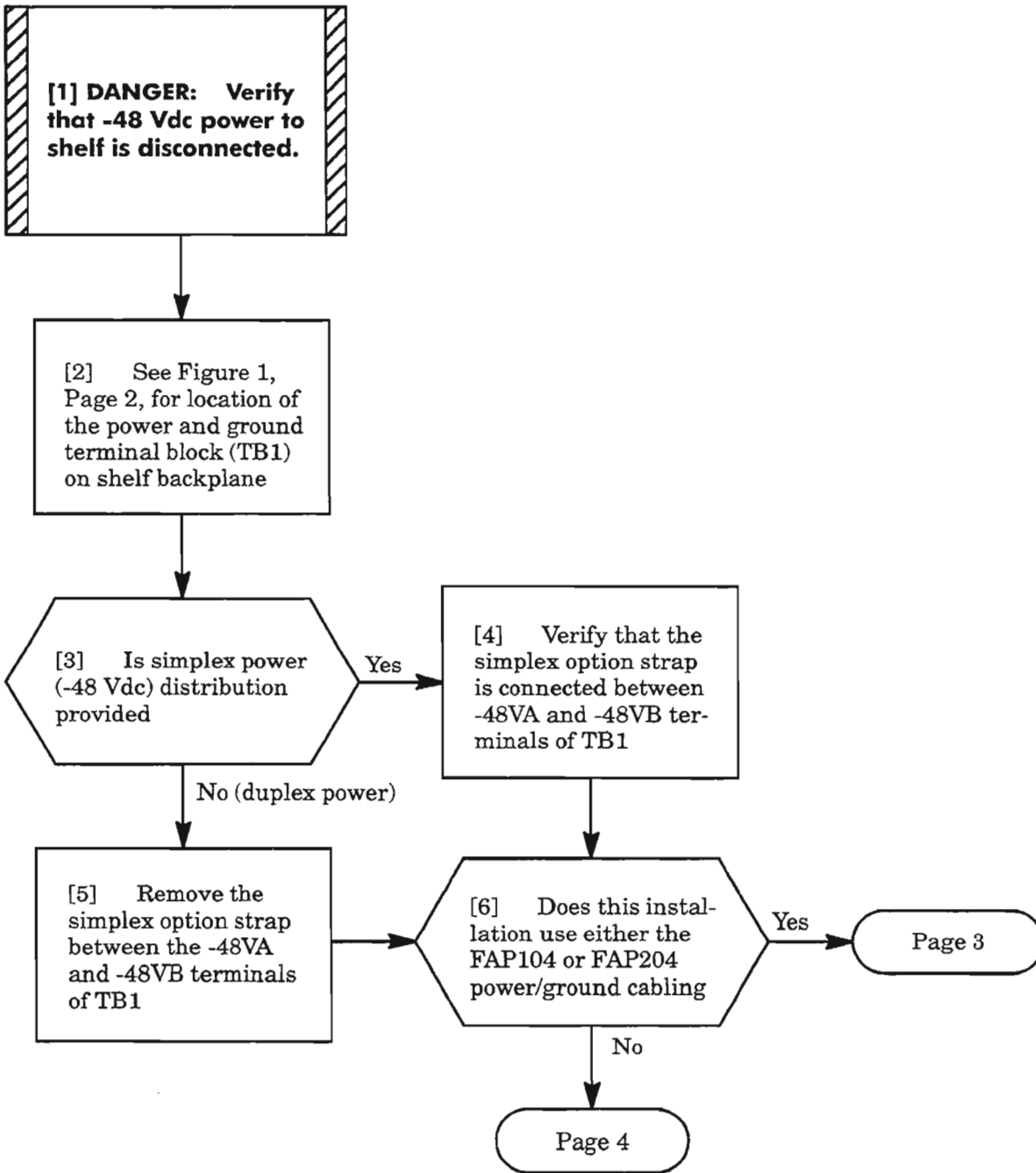
[4] The 1603/12 SM shelves are equipped with grounding jacks for connecting static ground wrist straps. The jacks are located below the PWR A and PWR C positions

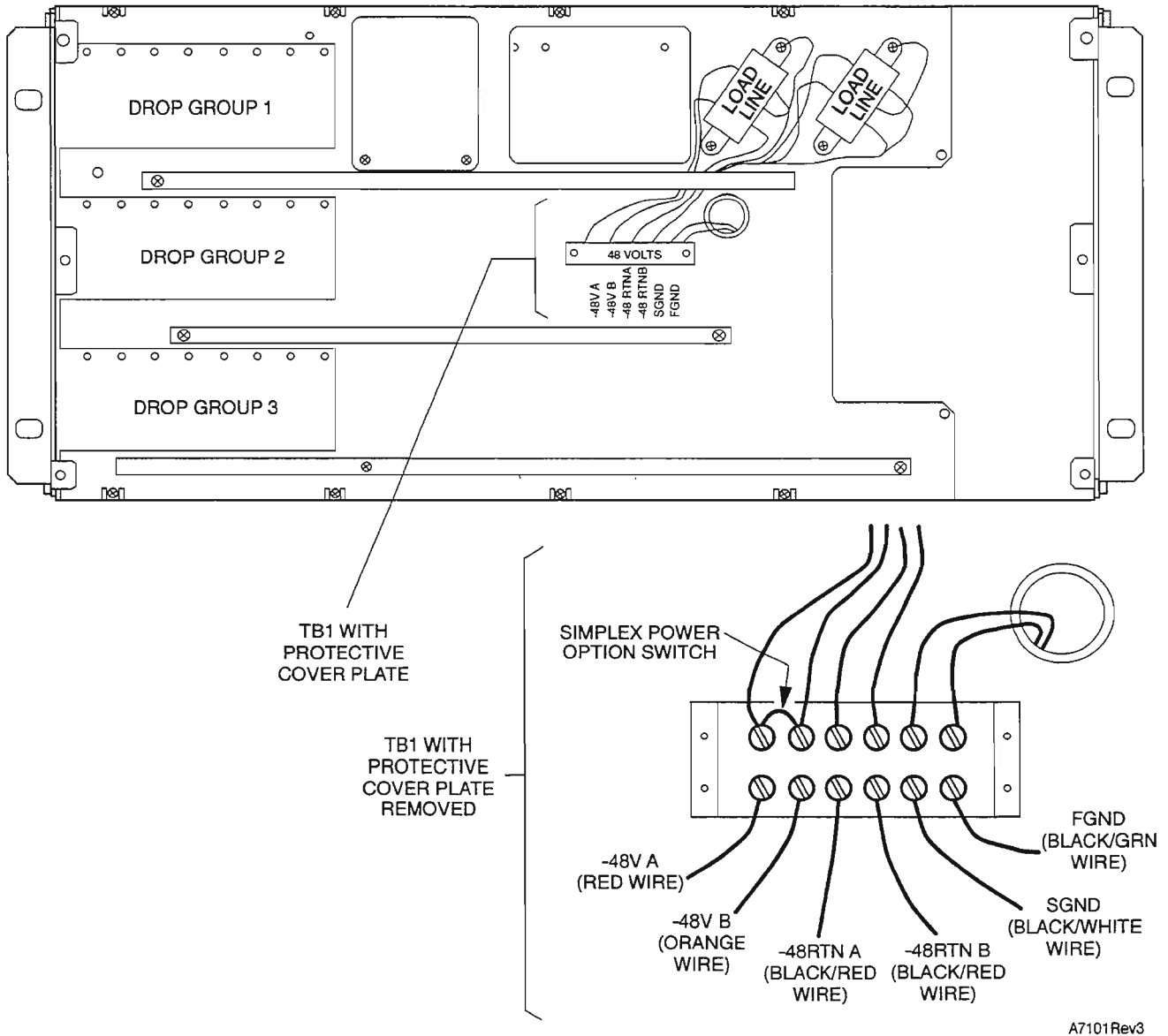
AND

```
graph LR; I1[ ] --> AND((AND)); I2[ ] --> AND; I3[ ] --> AND; I4[ ] --> AND; AND --- GND[ ]
```









A7101 Rev3

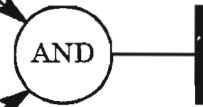
Figure 1. Location of Power and Ground Terminal Block

ISSUE 1	OCT 1994
ALCL 363-203-502	DLP
PAGE 2 of 4	004

VERIFY POWER AND GROUND WIRING

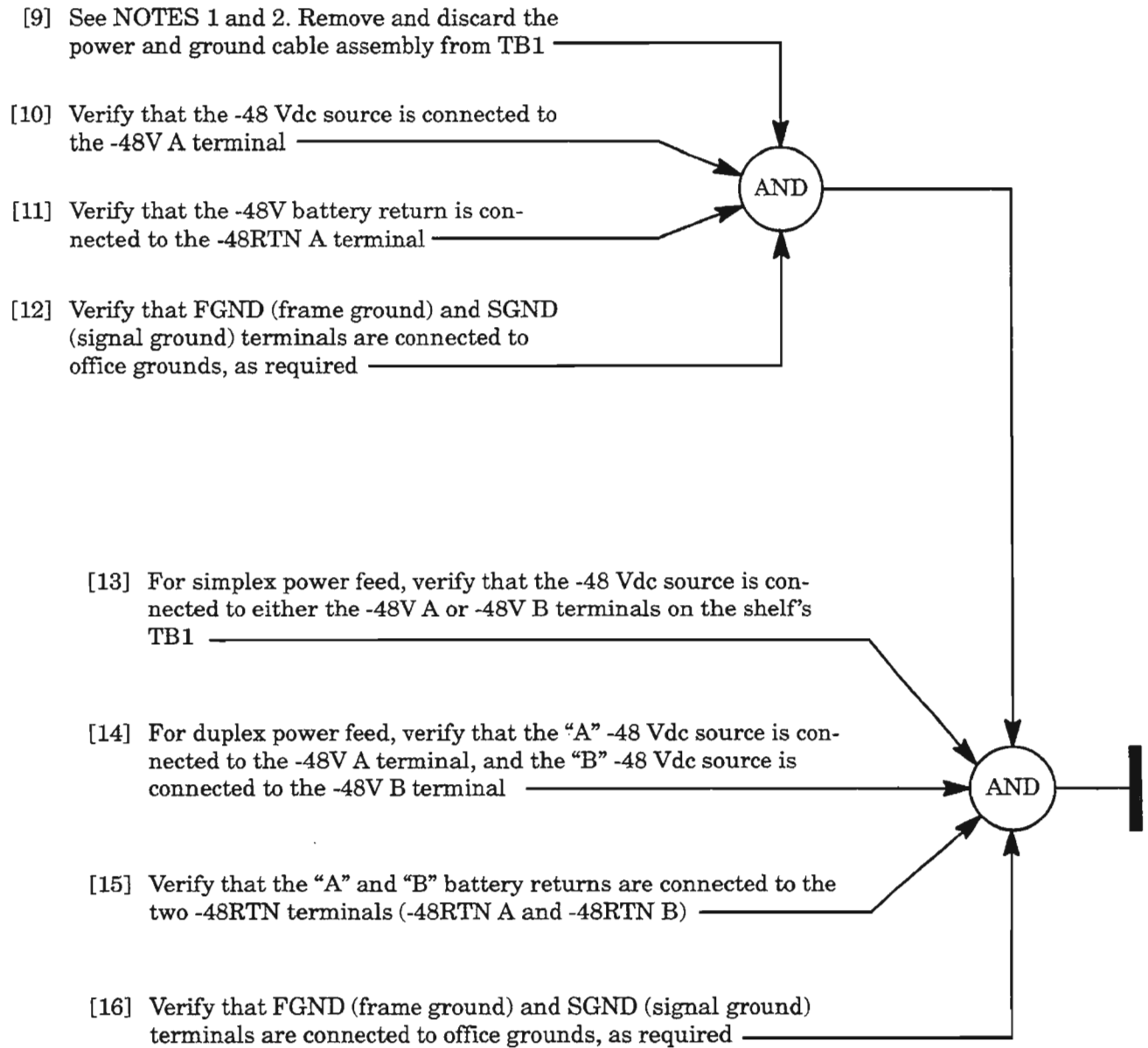
[7] Verify that the power and ground cable assembly is plugged into the FAP cable assembly that is routed down the side of the frame

[8] Verify that each wire of the harness is connected to TB1 per the color codes listed in Figure 1, Page 2



**VERIFY POWER AND GROUND WIRING**

ISSUE 1	OCT 1994
ALCL 363-203-502	DLP
PAGE 3 of 4	004



- NOTES:** 1. In some installations, frame ground is connected to either or both the signal ground and /or the -48V Return bus. This is typically done on the frame's fuse panel. However, if this installation does not use a fuse panel, the connects can be made on TB1 using short jumper wire straps.
2. Signal ground must be connected to either frame ground or the -48V Return bus. This is typically done on the FAP.

ISSUE 1	OCT 1994
ALCL 363-203-502	DLP
PAGE 4 of 4	004

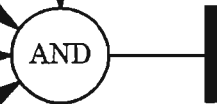
**[1] DANGER: Exercise caution when handling unterminated fibers. If far-end equipment is active, invisible laser radiation will be present at the fiber ends. Avoid direct exposure to beam.**

[2] Clean fibers per local practice. If no local practice exists, complete the following steps

[3] Spray connector end with Contact-Renu® or equivalent nonresidue cleaner

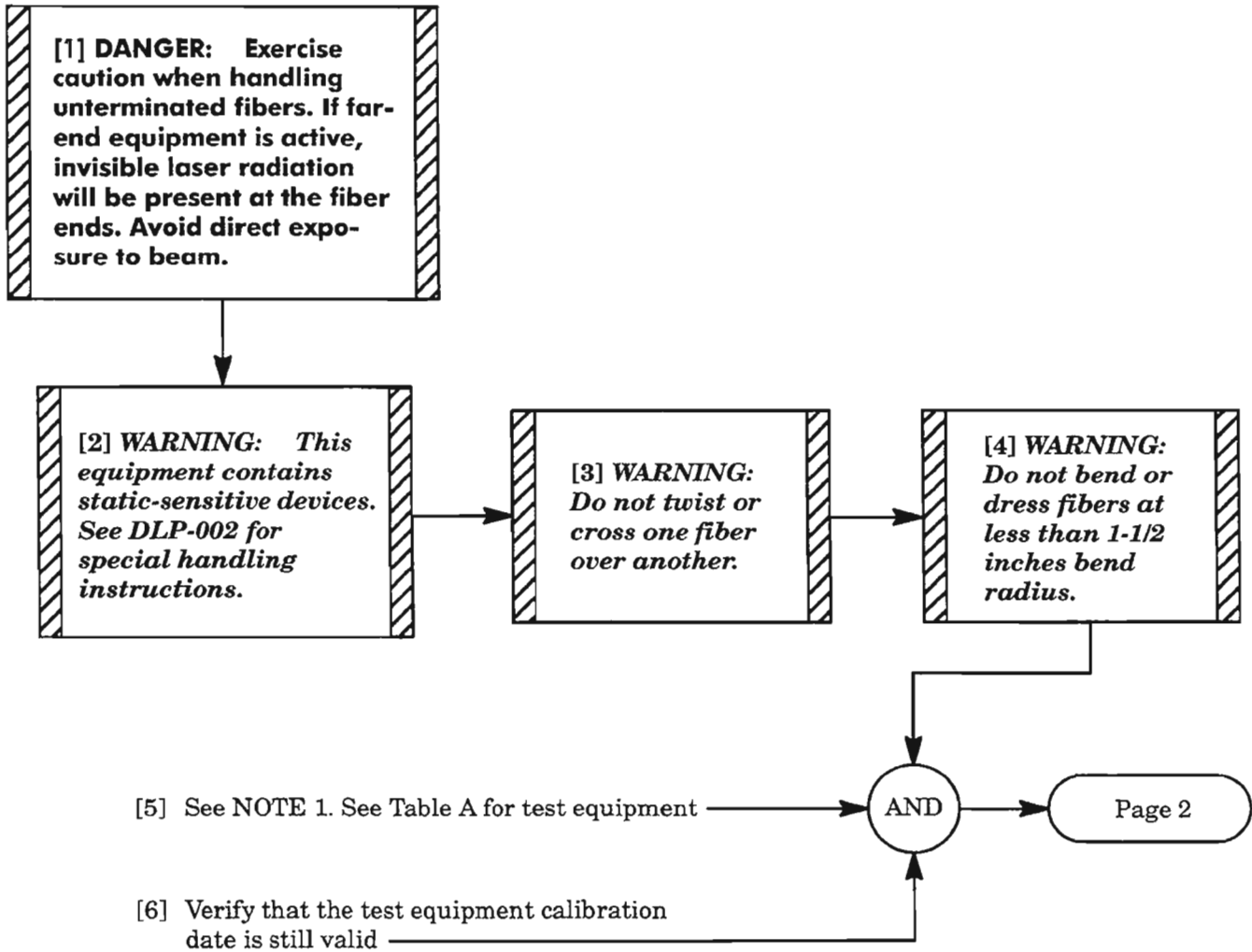
[4] Wipe ferrule end with a lint-free cloth or tissue such as Kim-wipe®

[5] Blow compressed air into the optical connectors (IN and OUT) on the HIF plug-in



*Contact-Renu is a registered trademark of Miller-Stephenson.  
Kim-wipe is a registered trademark of Kimberly-Clark.*





**Table A. Test Equipment**

Equipment	Quantity
A. Fiber Optic Multimeter, Photodyne Model 22XLC, or equivalent	1
B. 2- to 10-meter fiber optic test jumper cables, FC/PC connector type (HIF101/501) or SC/PC connector type (HIF102/502)	2
C. Fiber Optic Single Mode Variable Attenuator, Photodyne 19XT, or equivalent	1
D. Copy of TNG-504 for recording measurements	1

**NOTE: 1.** This procedure should be performed only during normal environmental conditions. For environmental requirements, see ALCL 363-203-100 in the 1603/12 SM Product Information Manual, 650205-823-001.

[7] Determine which HIFs are to be measured (HIF-A and/or HIF-B for Line Group 1 and/or Line Group 2)

[8] If necessary (see NOTE 2), switch the equipment so the HIF to be tested is not active (ACT LED is not lighted) by entering the following command:

**OPR-PROTNSW-OC3::lgx-oc3ab:::MAN;**

where: lgx = LG1 or LG2 (Line Group 1 or 2)  
oc3ab = OC3A or OC3B (side to switch from)

[9] For the HIF(s) being tested, silence OC-3 alarms by entering the following command (DLP-214):

**ED-OC3::lgx-oc3s:::::MA;**

where: lgx = LG1 or LG2 (Line Group 1 or 2)  
oc3s = OC3, OC3A, or OC3B

[10] If present, disconnect fiber cables from the transmit (OUT) and receive (IN) optical connector on the HIF (DLP-112)

[11] Clean both ends of the test jumper cable, the HIF OUT connector, and the optical meter sensor head connector per DLP-012

AND

Page 3

**NOTE: 2.** Switch is required only if active side is carrying traffic and duplex HIFs are provided.

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 11	013

**PERFORM OPTICAL PERFORMANCE TESTS FOR HIFXXX PLUG-IN**

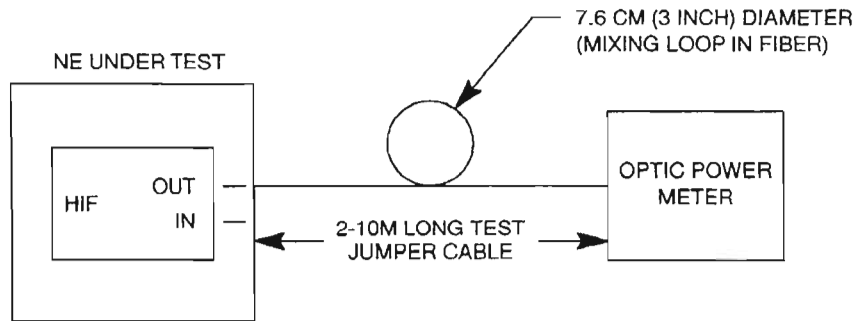
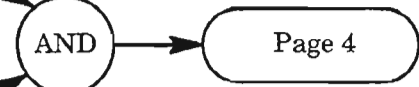


[12] See Figure 1. Connect the test jumper cable between the HIF OUT connector and the optical meter sensor head (see NOTE 3)

[13] Allow 5 minutes for system and meter to stabilize before taking a measurement (see NOTE 4)

[14] See NOTE 5. Observe the meter reading and ensure the reading does not fluctuate. Record the reading

[15] Disconnect "both" ends of the test jumper cable. Repeat Steps 12 through 15 until five stable readings are obtained (see NOTE 6)



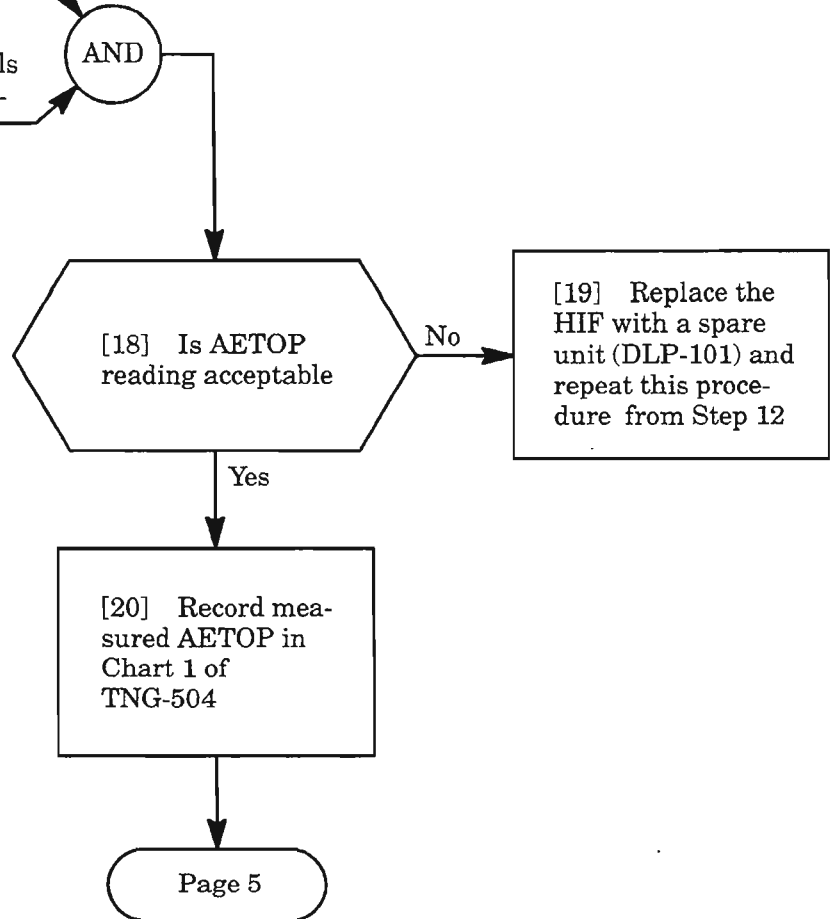
A7132Rev1

Figure 1. Output Power Measurement Test Configuration

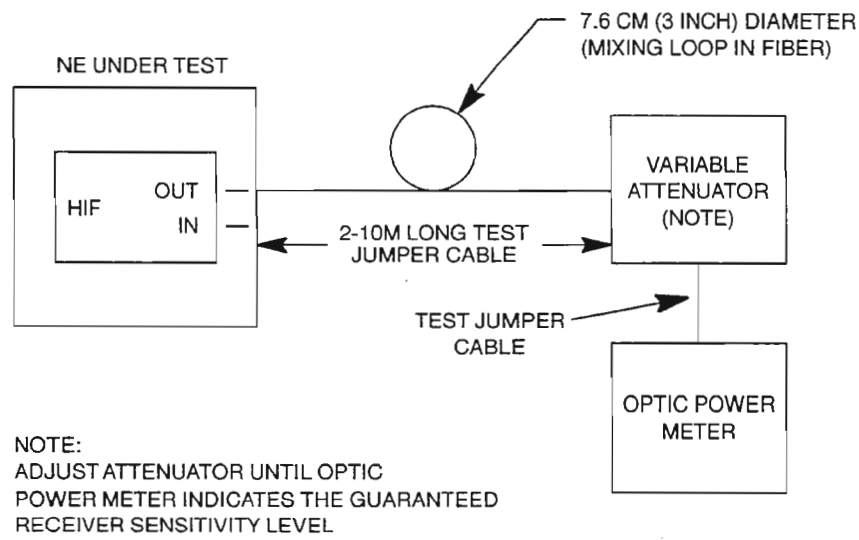
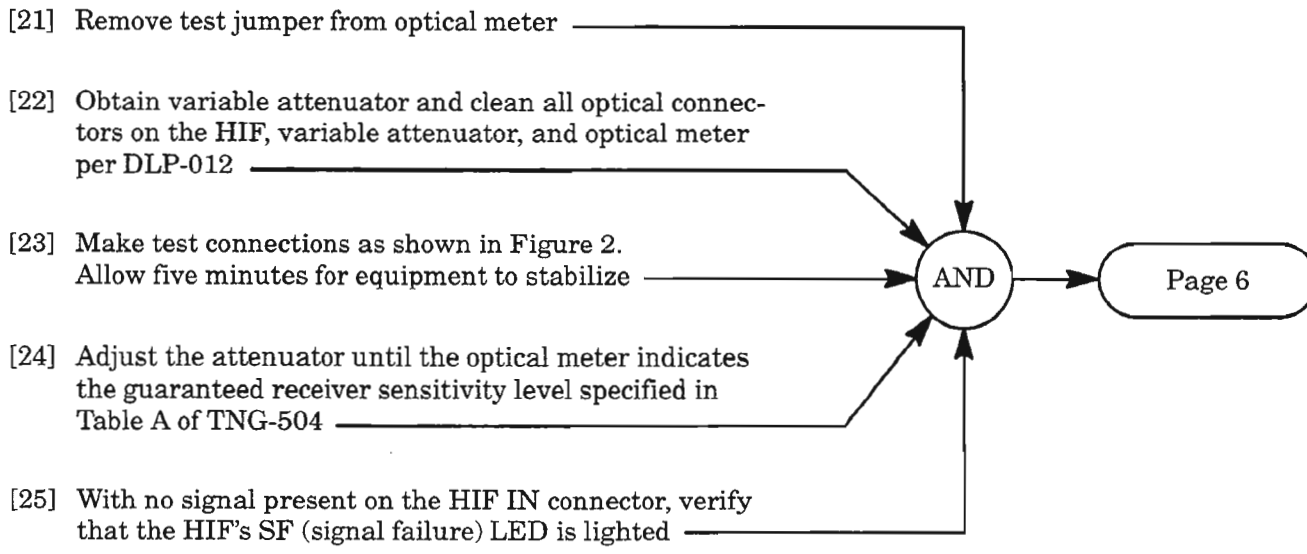
- NOTES:**
3. Figure 1 shows a loop in the test jumper cable. The loop is required (per EIA 526) to ensure that the optical modes (coming from the transmitter) are mixed adequately to provide a reasonable simulation of actual mode mixing in a conventional network situation.
  4. If the equipment is being initially powered up (cold), the system should be allowed to stabilize (warm up) for at least 30 minutes (per EIA / TIA-526-2).
  5. If the meter reading varies more than 0.4 dB, the output is not stable and the reading should be disregarded.
  6. Power output is directly affected by the components which make up the optic medium. Any dust or misalignment can be detrimental. Repeating the disconnect, clean and reconnect sequence for ALL optic components should eliminate these factors and provide the best possible measurements.

[16] Calculate the average of the five readings as the Average Effective Transmitter Output Power (AETOP)

[17] Verify that the AETOP measured falls within the required TOP range specified in Table A of TNG-504



ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 4 of 11	013



A7134Rev1

Figure 2. Initial Configuration for Receiver Test

[26] See NOTE 7. Enter the following command to determine the BERL-LT threshold:

**RTRV-TH-OC3:[tid]:lgx-OC3:[ctag]::BERL-LT;**

where: lgx = LG1 or LG2 (line group number)  
OC3 = OC3 interface

[27] If necessary, reproviseion the alarm threshold (per site requirements) by entering the following command:

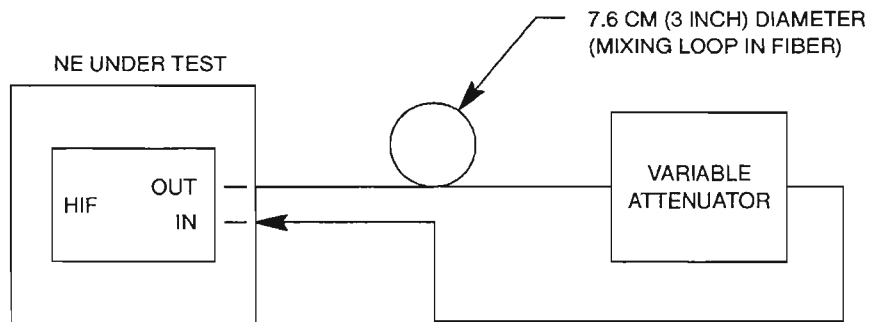
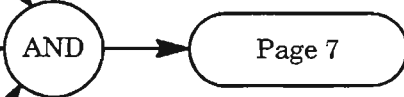
**SET-TH-OC3:[tid]:lgx-OC3:[ctag]::BERL-LT,thlev;**

where: lgx-OC3 is same as used in Step 26,  
thlev = 5...9 (threshold level,  $10^{-5}$ ... $10^{-9}$ )  
defaults are: 7 for 15-MIN  
7 for 1-DAY

[28] Remove the test jumper from the optical meter and connect it to the HIF's IN connector per Figure 3. Allow five minutes for equipment to stabilize

[29] Verify that the HIF's SF LED is not lighted. If the SF LED is not lighted, write YES for "Passed RCVR Sensitivity Test" in Chart 1 of TNG-504

[30] If the SF LED is lighted, repeat this procedure from Step 22. If SF LED does not go off, replace the HIF with a spare unit (DLP-101) and repeat all tests



A7135Rev2

**Figure 3. Looping Adjusted Power for Receiver Test**

**NOTE: 7.** The BERL-LT (degraded failure of BIT error ratio) alarm will be used to determine if the unit passes the receiver sensitivity test since it is the most sensitive alarm threshold available.

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 6 of 11	013

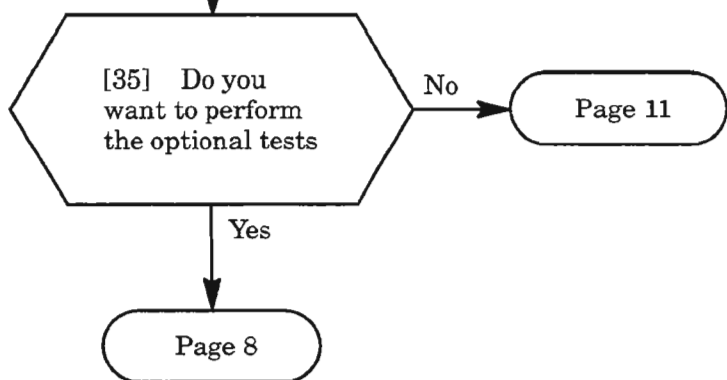
**PERFORM OPTICAL PERFORMANCE TESTS FOR HIFXX PLUG-IN**

[31] This completes the basic optical tests. The remaining steps are optional tests

[32] Steps 36 to 43 will verify the guaranteed, normal operation  $10^{-10}$  BIT error ratio

[33] Steps 44 to 47 will measure the signal level at which the HIF starts to fail

[34] Steps 48 to 52 will determine the operating margin



[36] If not already done, allow OC3 PM reporting by entering the command:

**ALW-PMREPT-OC3:[tid]:lgx-OC3:[ctag];**

[37] Verify facility being tested (A or B) is active, by entering the command:

**RTRV-COND-EQPT:[tid]:lgx-hifs;**

where: lgx-hifs is: line group # - HIF, HIFA, or HIFB

[38] See NOTE 8. If facility being tested is standby, enter one of the following two commands:

**OPR-PROTNSW-OC3:[tid]:lgx-oc3ab:[ctag]:MAN;**

where: lgx-oc3ab is: line group # - OC3A or OC3B

(if no previous protection switch is active)

-or-

**RLS-PROTNSW-OC3:[tid]:lgx-oc3ab:[ctag];**

(if protection switch is active)

[39] Reset (provision) the NE's BIPL counter for zero errors by entering the following command (RTP-001):

**INIT-REG-OC3:[tid]:lgx-oc3s:[ctag]:BIPL,,,,1-DAY,,;**

where: lgx-oc3s is: line group # - OC3, OC3A, or OC3B

[40] See NOTE 9. Allow the equipment to run for 30 minutes (or 24 hours)

[41] Display the BIPL count by entering the command (RTP-001):

**RTRV-PM-OC3:[tid]:lgx-oc3s:[ctag]:BIPL,1-UP,,,1-DAY,,0-0;**

where: lgx-oc3s is same as used in Step 39

[42] If the count reported is less than 28 for 30 minutes (1327 for 24 hours), write YES for "Passed  $10^{-10}$  BIT ERR Test" in Chart 1 of TNG-504

[43] If the count is over 28 (1327), replace the HIF with a spare unit per DLP-101; repeat the test one time. If the count is still exceeded, Alcatel Customer Service should be contacted (TNG-505)

AND

Page 9

**NOTES: 8.** Facility must be active for PM reporting of BIPL count.

**9.** If possible, the test should be run 24 hours to allow for a more accurate assessment.

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 8 of 11	013

**PERFORM OPTICAL PERFORMANCE TESTS FOR HIFXXX PLUG-IN**

[44] While observing the HIF's SF LED, VERY slowly increase the attenuation via the attenuator until the HIF's SF LED lights

[45] Disconnect the fiber from the HIF's IN connector and connect it to the optical meter

[46] Allow 5 minutes for the equipment to stabilize

[47] Record the meter reading for "RCVR Fail Level" in Chart 1 of TNG-504. This is the signal level where the receiver just starts to fail (BERL-LT threshold is exceeded)

AND

Page 10

[48] Determine which fiber is connected to the far-end HIF's OUT connector and that the far-end HIF is functioning

[49] Clean the optic meter connectors and the fiber connectors per DLP-012

[50] Connect the IN fiber (from far-end OUT) to the optical meter

[51] Record the meter reading for "Level from Far-end HIF" in Chart 1 of TNG-504

[52] The difference in the Step 47 level and the Step 51 level is the operating margin. Record this value for "Calculated Operating Margin" in Chart 1 of TNG-504 (see NOTE 10)

AND

AND

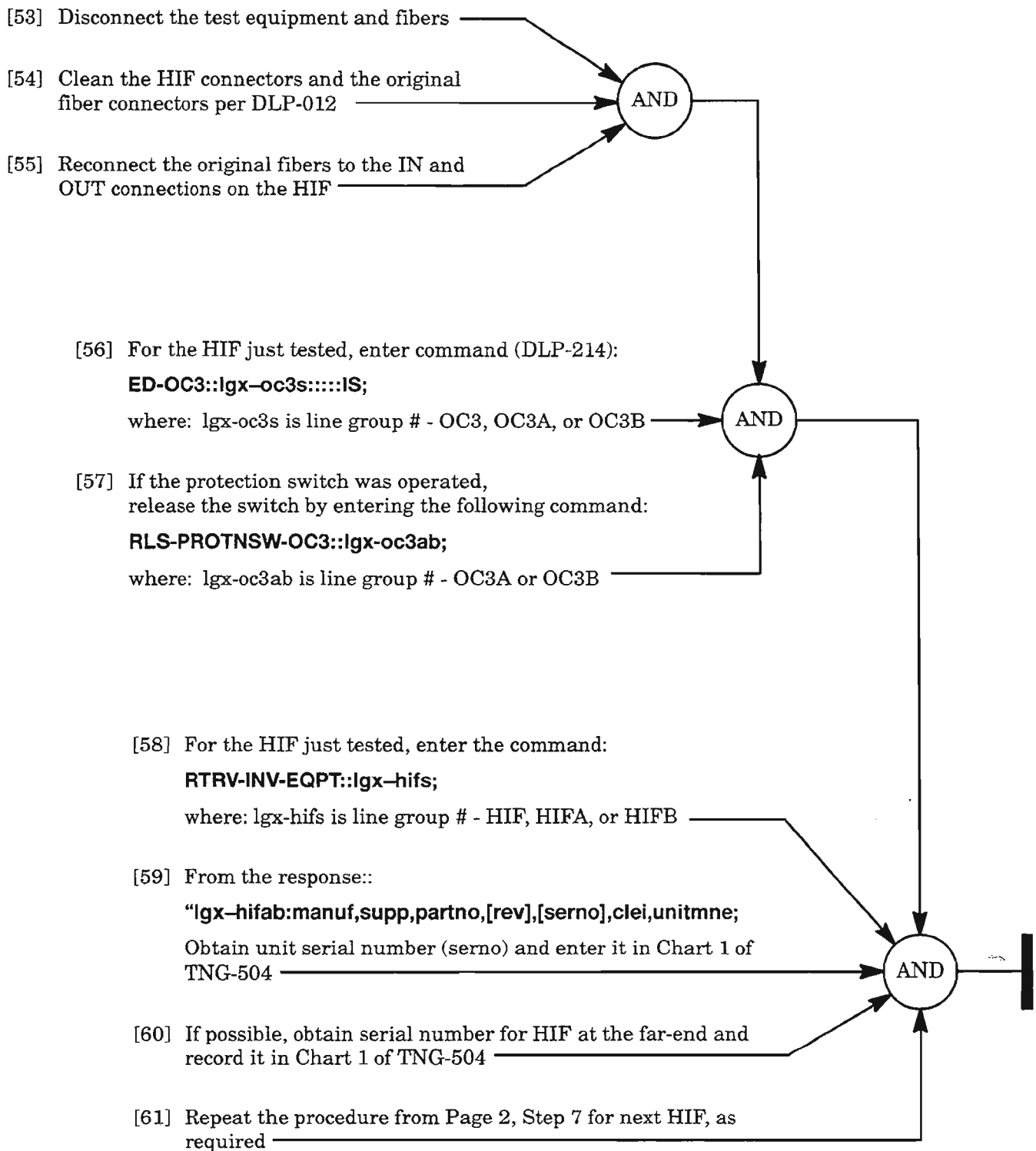
Page 11

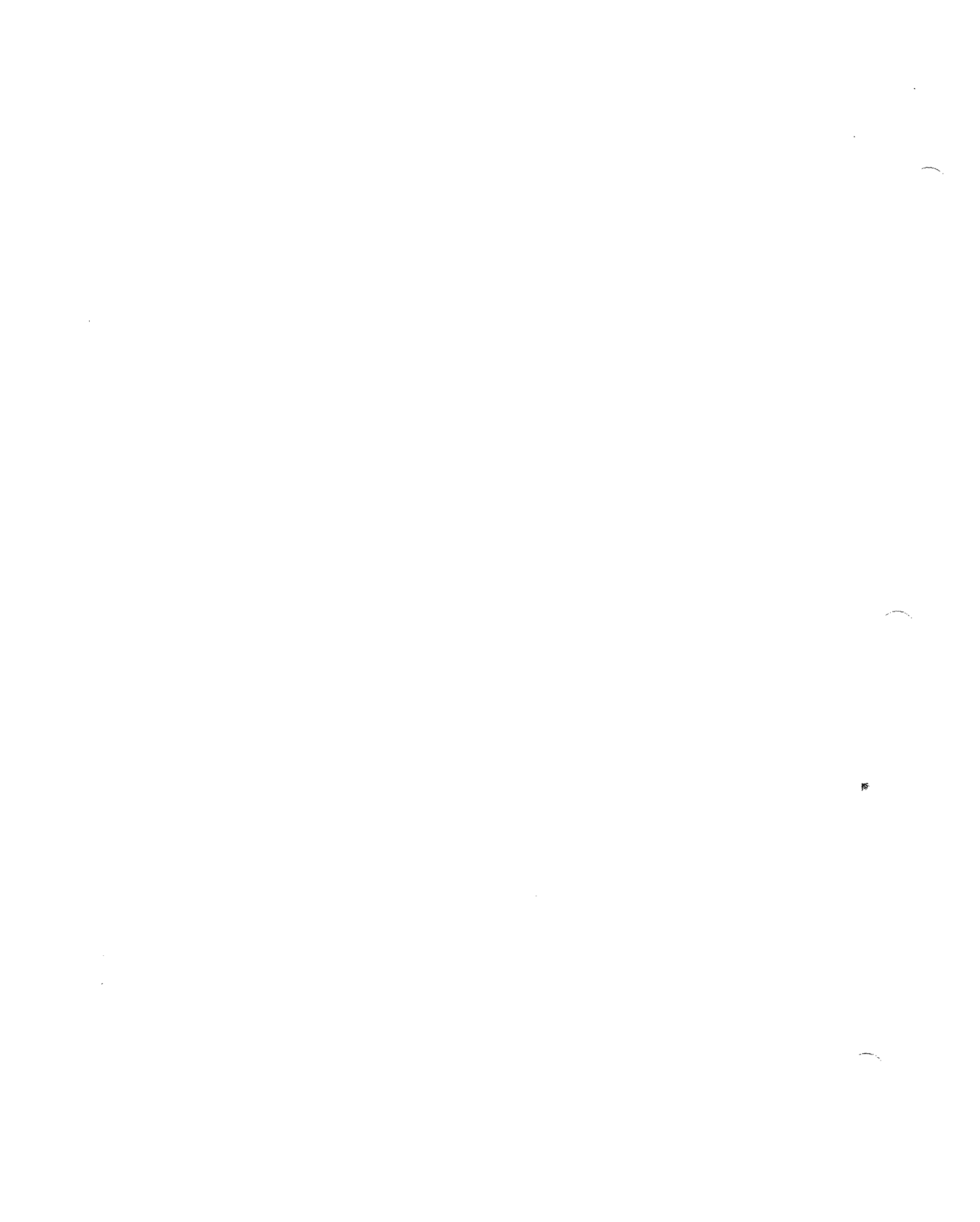
**NOTE: 10.** *It is important to realize that most of the fiber components within any system and /or network will experience a certain amount of degradation over time. Therefore, the initial installation operating measurements will degrade with time. Since no two NEs will experience exactly the same environment and operating situations, there will be further variations in future measurements. This margin can be checked periodically to detect system degradation.*

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 10 of 11	013

**PERFORM OPTICAL PERFORMANCE TESTS FOR HIFXX PLUG-IN**



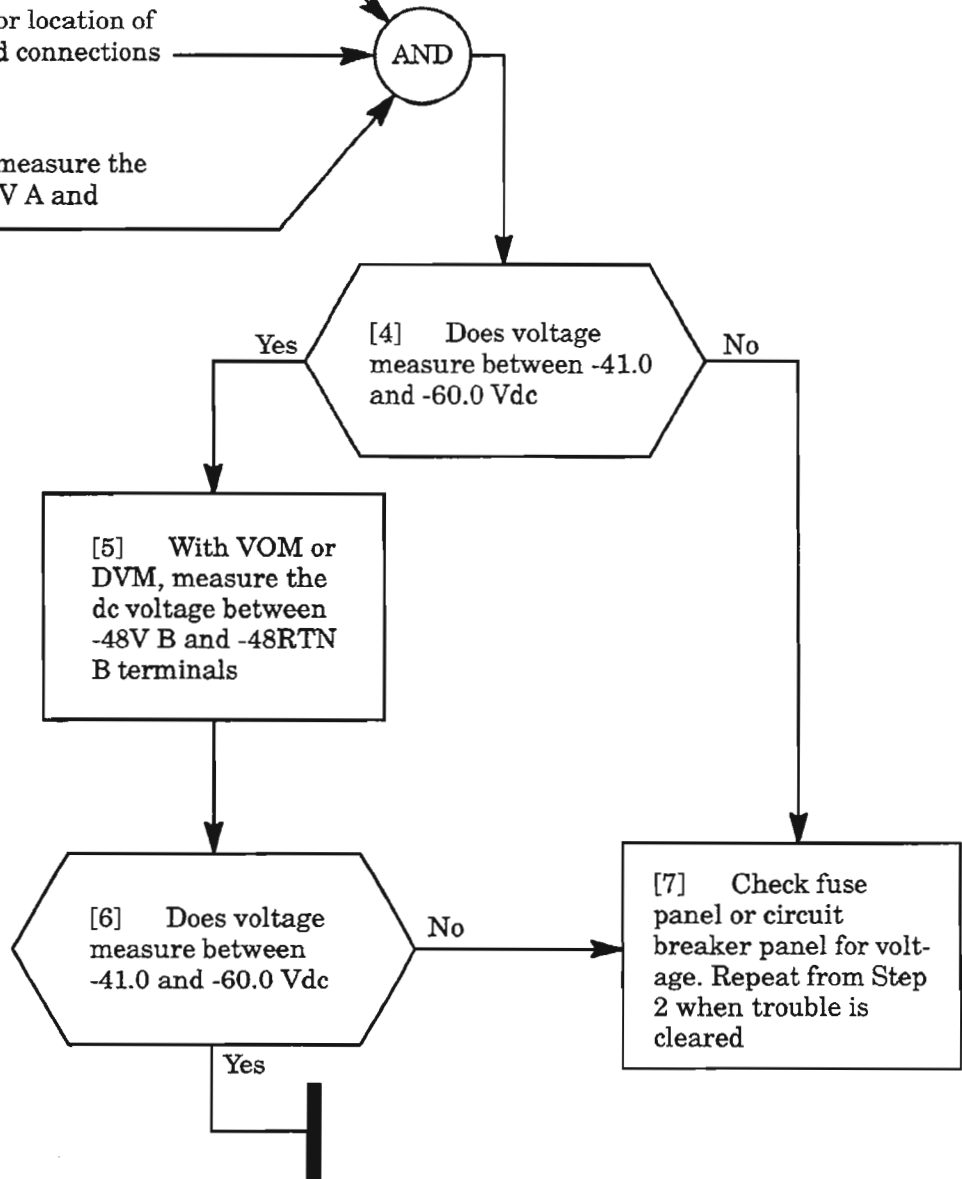


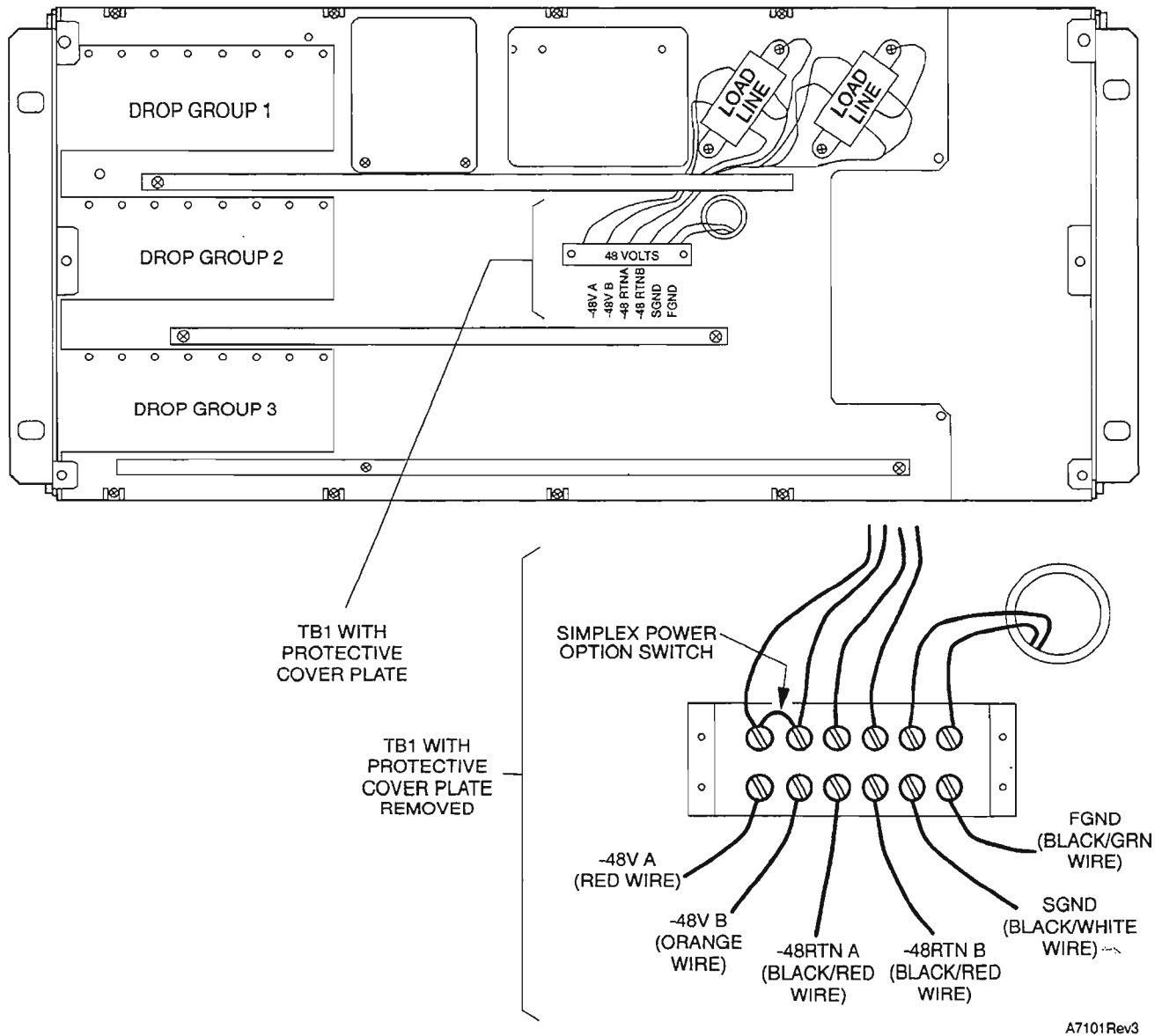


[1] Verify fuses are installed, or circuit breaker is closed at fuse panel or battery circuit breaker panel

[2] See Figure 1, Page 2, for location of shelf power and ground connections

[3] With a VOM or DVM, measure the dc voltage between -48V A and -48RTN A terminals





A7101Rev3

Figure 1. Location of 1603/12 SM Power and Ground Terminal Block

ISSUE 1	OCT 1994
ALCL 363-203-502	DLP
PAGE 2 of 2	015

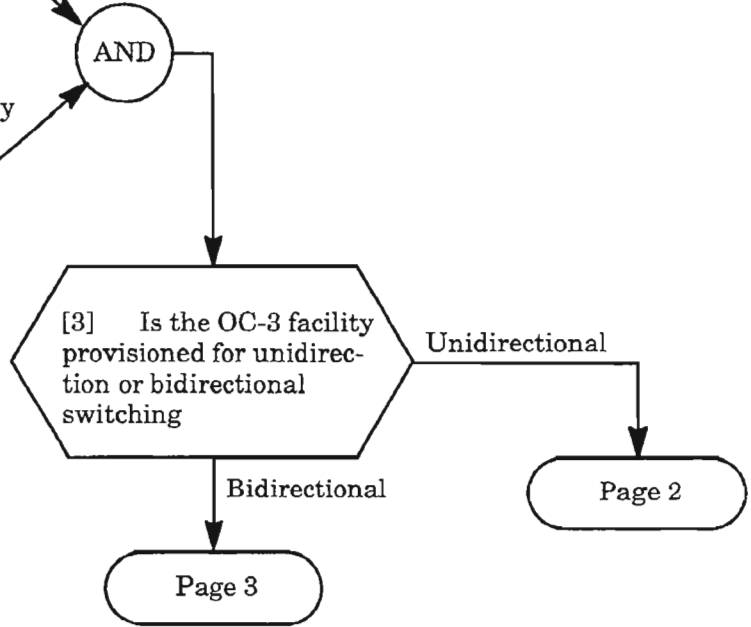
VERIFY -48 VDC POWER AT 1603/12 SM SHELF

- [1] Enter the following command at both ends of the OC-3 span to determine the facility protection switching mode (see DLP-214 for explanation of response):

**RTRV-FFP-OC3:[tid]:lgx-OC3:[ctag];**

where: lgx = LG1 or LG2

- [2] See NOTE 1. If you wish to change the facility protection switching parameters, refer to DLP-214 before continuing



**NOTE: 1.** The switch direction parameter must be set to the same value (unidirectional or bidirectional) at both ends of the OC-3 facility.

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 1 of 3	016

[4] Determine which side of the facility is active by entering the following command (DLP-214):

**RTRV-OC3:[tid]:lgx-oc3s:[ctag];**

where: lgx = LG1 or LG2  
oc3s = OC3, OC3A, or OC3B

[5] Enter the following command to switch the facility:

**OPR-PROTNSW-OC3:[tid]:lgx-oc3ab:[ctag]::MAN;**

where: lgx = LG1 or LG2  
oc3ab = OC3A or OC3B (select active side)

[6] Verify that the switch took place by observing ACT (active) LEDs on the HIF or autonomous message:

A ctag REPT EVENT OC3  
"lgx-oc3s:MANWKSWPR,TC,,,,,;"

[7] If switch did not occur, verify that there are no alarms on the OC-3 facility; if necessary, replace HIF plug-ins (DLP-101)

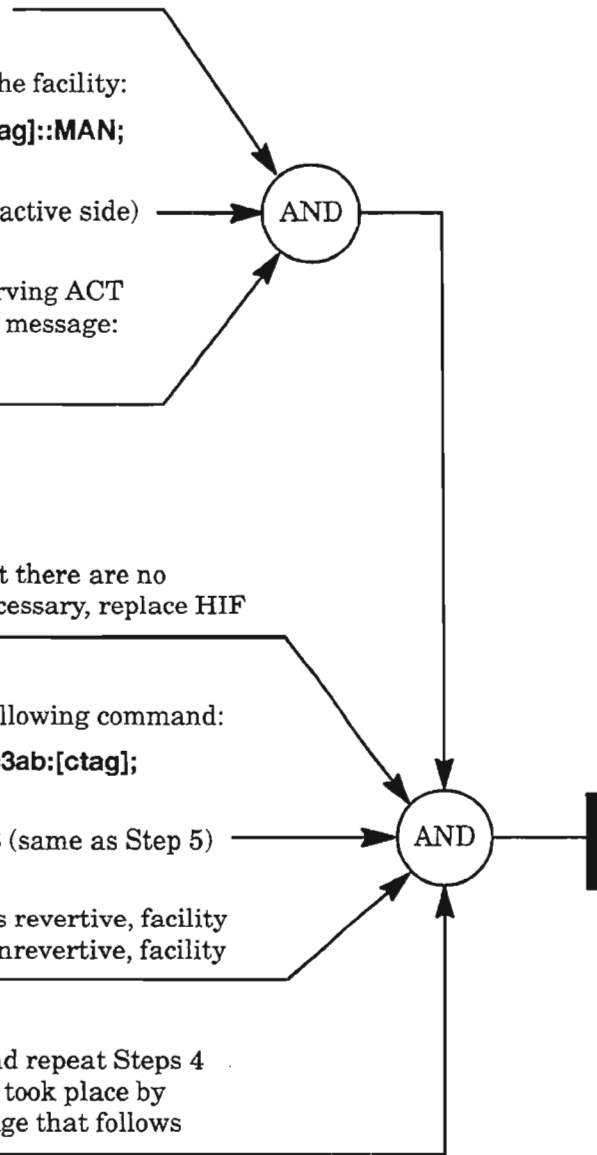
[8] Release switch by entering the following command:

**RLS-PROTNSW-OC3:[tid]:lgx-oc3ab:[ctag];**

where: lgx = LG1 or LG2  
oc3ab = OC3A or OC3B (same as Step 5)

[9] See NOTE 2. If switching mode is revertive, facility should return to the A-side. If nonrevertive, facility does not return to previous side

[10] Log on to the far-end terminal and repeat Steps 4 through 9. Verify that the switch took place by observing the autonomous message that follows execution of the command



**NOTE: 2.** *If switching mode is revertive, the A-side is always the working side, and the B-side is the standby side. If switching mode is nonrevertive, the active side becomes the working side when the protection switch is released.*

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 3	016

[11] See NOTE 3. Log on to the far-end NE (DLP-117) if a craftsperson is not there to observe events

[12] Determine which side of the facility is active by entering the following command (DLP-214):

**RTRV-OC3:[tid]:lgx-oc3s:[ctag];**

where: lgx = LG1 or LG2  
oc3s = OC3, OC3A, or OC3B

[13] Enter the following command to switch the facility:

**OPR-PROTNSW-OC3:[tid]:lgx-oc3ab:[ctag]::MAN;**

where: lgx = LG1 or LG2  
oc3ab = OC3A or OC3B (select active side)

[14] Verify that the switch took place by observing ACT (active) LEDs on the HIF or autonomous message:

A ctag REPT EVENT OC3  
"lgx-oc3s:MANWKSWPR,TC,,,,,;"

[15] If switch did not occur, verify that there are no alarms on the OC-3 facility; if necessary, replace HIF plug-ins (DLP-101)

[16] Release switch by entering the following command:

**RLS-PROTNSW-OC3:[tid]:lgx-oc3ab:[ctag];**

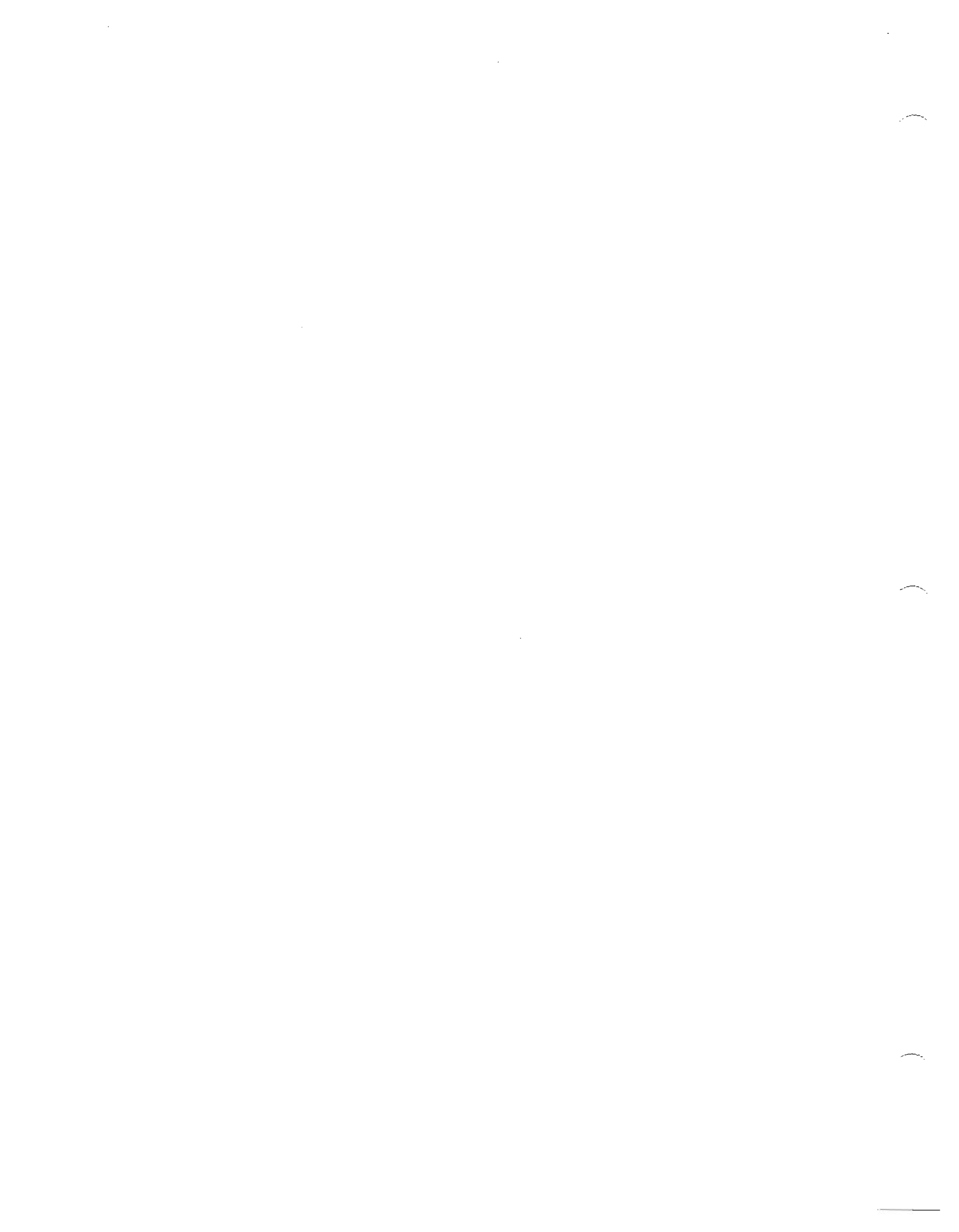
where: lgx = LG1 or LG2  
oc3ab = OC3A or OC3B (same as Step 5)

[17] See NOTE 4. If switching mode is revertive, facility should return to the A-side. If nonrevertive, facility does not return to previous side



**NOTES: 3.** For bidirectional switching, observe that switching takes place at both NEs.

**4.** If switching mode is revertive, the A-side is always the working side, and the B-side is the standby side. If switching mode is nonrevertive, the active side becomes the working side when the protection switch is released.





[1] See NOTES 1 through 3. Obtain the following test equipment:

- (a) T1/DS1 Digital Transmission Test Set (Tautron Model S5108, or equivalent)
- (b) WECO 310-to-310 patch cords as required
- (c) WECO 310-to-Bantam patch cords as required

[2] Verify that DS1 ports to be tested are wired to cross-connect panel. See Figures 1, 2 and 3, Pages 2 and 3, for typical test configurations

[3] At the test access NE, connect DS1 #1 IN to the S5108 OUPUT, or as required

[4] To test multiple DS1s, daisy-chain as many DS1s as needed by connecting DS1 #1 OUT to DS1 #2 IN, and so on

[5] Connect DS1 #84 OUT (or last DS1 to be tested) to the S5108 INPUT jack, or as required

[6] Verify that DS1 signals are looped back toward the test access NE either at a second NE or via the OC-3 optical loopbacks per Figure 1

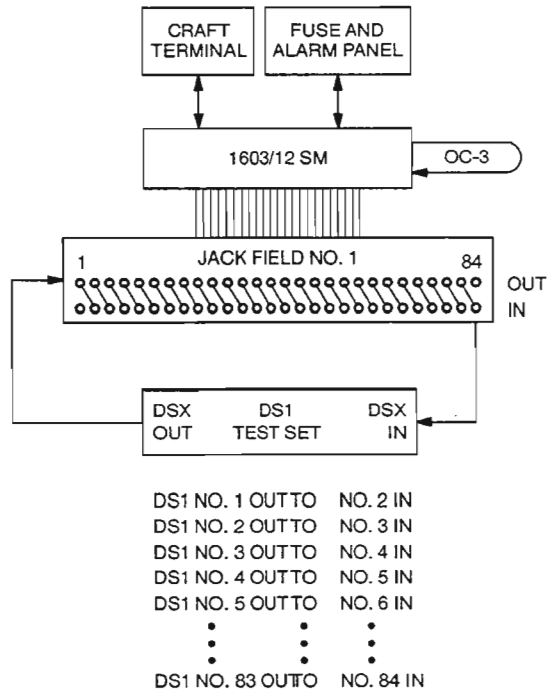
AND

Page 4

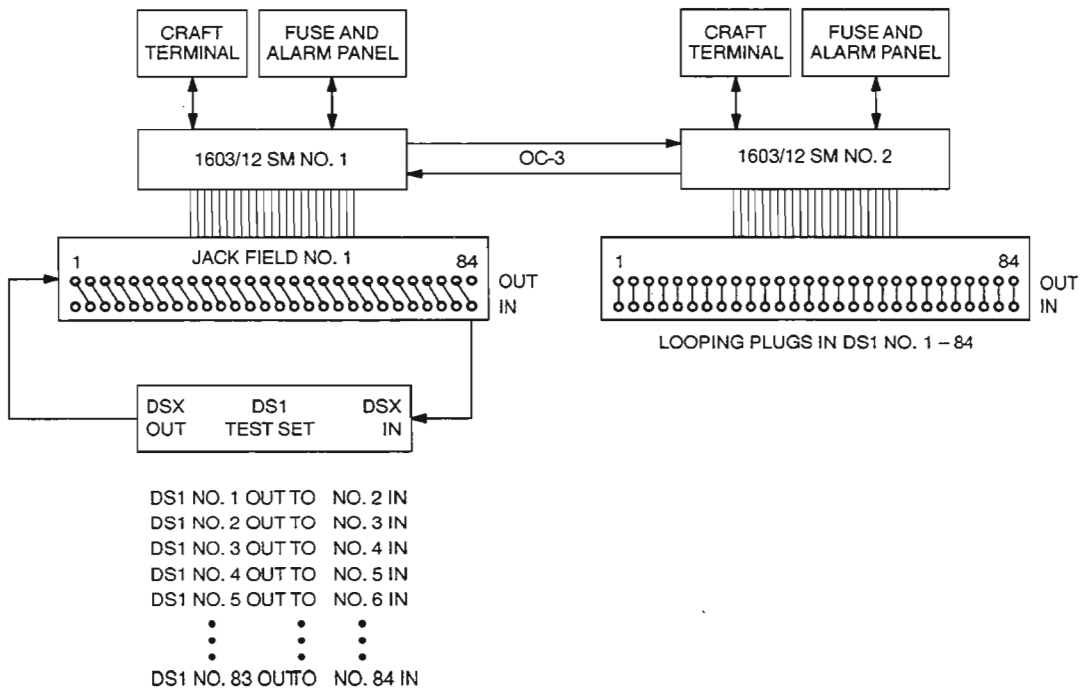
**NOTES:** 1. *This procedure verifies the transport of asynchronous DS1 level signals using AMI and B8ZS line codes. Performance monitoring of bipolar violations at each DS1 port indicates the system's ability to transport and detect line coding errors. Bipolar violations are not propagated through multiple multiplexers (ports) and, therefore, can be isolated by interrogating performance monitoring registers at each port. Criteria for these tests are found in Bellcore TR-499 Issue 3, Dec. 1989.*

2. *This procedure can be used for testing several configurations as shown in Figures 1 through 3. It is assumed that at each Network Element (NE), the DS1 (T1) port(s) are entered into service per NTP-005 and are connected to a DSX-1 cross-connect for test equipment access.*

3. *This procedure uses the Tautron Model S5108 T1/DS1 Digital Transmission Test Set. If a different test set is used, refer to the User's Manual for that equipment to obtain the equivalent test parameters, or use test parameters per local procedure.*



**Figure 1. DS1 Test Configuration – One NE with OC-3 Loopback**



**Figure 2. DS1 Test Configuration – Two NEs with Loopback Provided at Second NE**

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 8	018

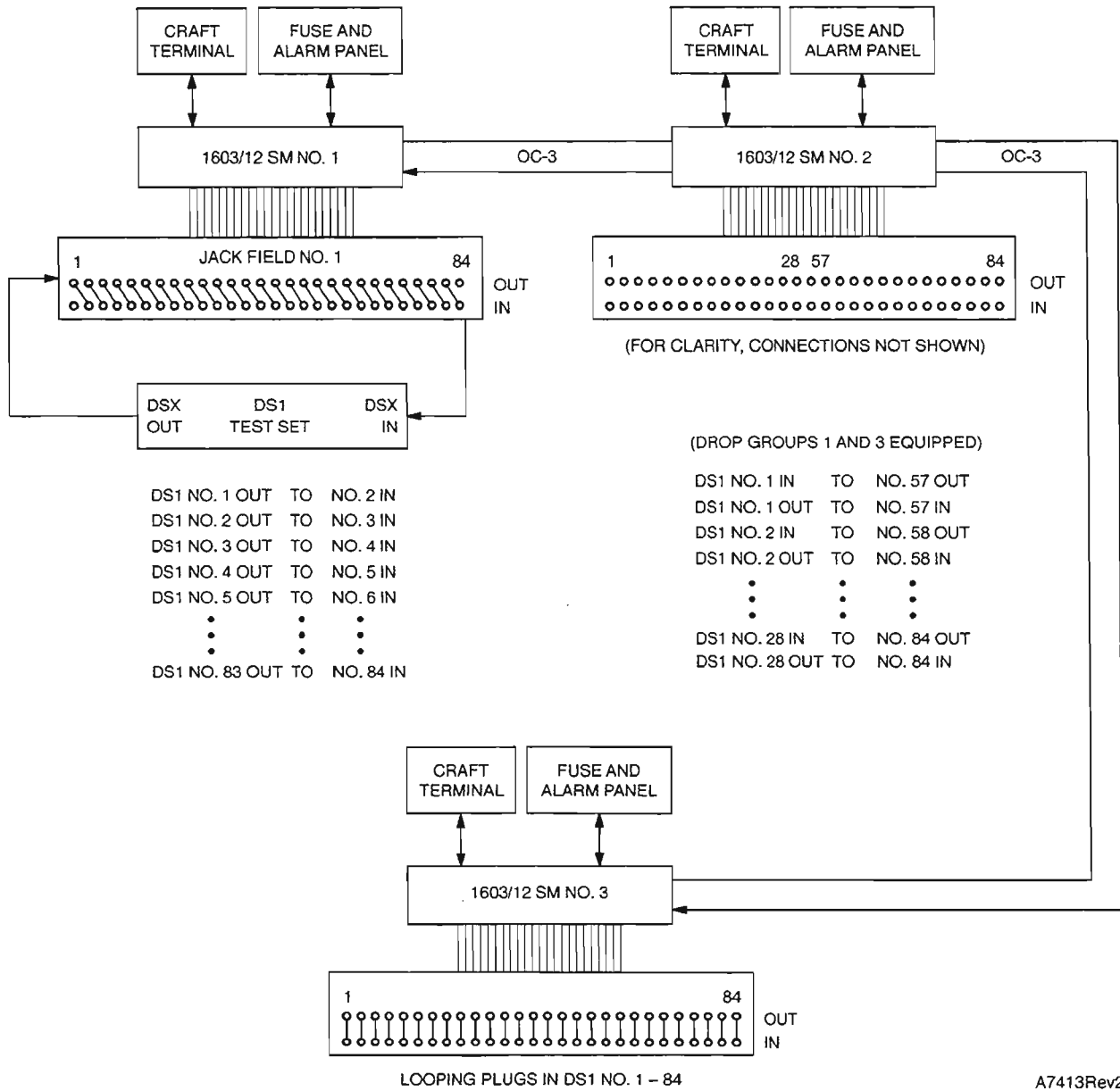


Figure 3. DS1 Test Configuration – Three NEs

A7413Rev2

[7] At each NE, provision the DS1 ports for AMI line code and OOS-MA primary state by entering the following command (DLP-212):

**ED-T1:[tid]:dgx-T1-pathno:[ctag]::LINECDE=AMI:MA;**

where: dgx = DG1, DG2, or DG3  
 pathno = 1...28 (use grouping as necessary to provision all DS1s)

EXAMPLE:

**ED-T1:[tid]:DG1-T1-1&&-28:::LINECDE=AMI:MA;**

[8] At each NE, enter the following command to set the ESL (Line Errored Seconds) threshold to 2 counts:

**SET-TH-T1:[tid]:dgx-T1-pathno:[ctag]::ESL,2,,,15-MIN;**

where: dgx = DG1 DG2 or DG3  
 pathno = 1...28 (use grouping as necessary to provision all DS1s)

[9] Set up the test set as follows:

- (a) Format ..... DS1 unframed
- (b) Pattern ..... QRW (standard quasirandom word;  
 $2^{20}-1$  PRBS w/ 14-zero constraint)
- (c) Line Code .... AMI
- (d) Path Timing .. Internal
- (e) Error Type ... BPV (bipolar violation)
- (f) Error  
 Generator .... ERR FREE (no continuous errors)
- (g) Interface  
 Group ..... DSX
- (h) Measurement  
 Mode ..... Continuous
- (i) Measurement  
 Category ..... BPVs and excessive zeros



ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 4 of 8	018

[10] The following steps verify that system will pass AMI data without errors

[11] At each NE, initialize the performance monitoring registers for the DS1 ports being tested by entering the command (RTP-004):

**INIT-REG-T1:[tid]:aidt1:[ctag];**

where: aidt1 = dgx-T1-pathno or ALL

dgx = DG1, DG2 or DG3

pathno = 1...28 (DS1 line no.)

[12] Press test set RUN/STOP key. Allow the test to run at least 15 minutes. After 15 minutes, verify that there are no errors reported on the test set

[13] At each NE, enter the following command for each T1 port carrying the test signal (RTP-004):

**RTRV-PM-T1:[tid]:aidt1:[ctag];**

where: aidt1 = dgx-T1-pathno or ALL

dgx = DG1, DG2 or DG3

pathno = 1...28 (DS1 line no.)

[14] From the response, verify that no error counts are reported

AND

Page 6

[15] The following steps verify that when B8ZS encoded data is transported via AMI interfaces, bipolar violations will be recorded

[16] Press the test set RN/STOP key to stop the test.  
Set the test set LINE CODE to B8ZS

[17] Press the RUN/STOP key and allow the test to run at least 3 minutes. Verify that the S5108 test set reports BPV errors

[18] At each NE, enter the command (RTP-004):

**RTRV-PM-T1:[tid]:aidt1:[ctag];**

where: aidt1 = dgx-T1-line or ALL

dgx = DG1, DG2 or DG3

line = 1...28 (DS1 line no.)

[19] From the response, verify that BPVs and one ESL/second are reported during the time period

AND

Page 7

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 6 of 8	018

[20] The following steps verify that system will pass B8ZS encoded data without errors

[21] At each NE, provision the DS1 ports for B8ZS line code by entering the following command (DLP-212):

**ED-T1:[tid]:dgx-T1-pathno:[ctag]::LINECDE=B8ZS;**

where: dgx = DG1, DG2 or DG3  
pathno = 1...28 (use grouping as necessary to provision all DS1s)

[22] At each NE, initialize the performance monitoring registers by entering the command (RTP-004):

**INIT-REG-T1:[tid]:aidt1:[ctag];**

where: aidt1 = dgx-T1-pathno or ALL  
dgx = DG1, DG2 or DG3  
pathno = 1...28 (DS1 line no.)

[23] With the test set LINE CODE set to B8ZS, press RUN/STOP key to start test

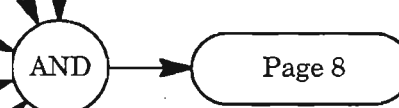
[24] Allow the test to run at least 3 minutes. After 3 minutes verify that the test set reports no errors

[25] At each NE, enter the command (RTP-004):

**RTRV-PM-T1:[tid]:aidt1:[ctag];**

where: aidt1 = dgx-T1-pathno or ALL  
dgx = DG1, DG2 or DG3  
pathno = 1...28 (DS1 line no.)

From the response, verify that no errors are reported



Page 8

[26] The following steps verify that when AMI encoded data is transported via B8ZS interfaces, bipolar violations will be recorded

[27] With the test set LINE CODE set to AMI, press the RUN/STOP key to start the test

[28] Allow the test to run at least 3 minutes. Verify that the S5108 test set reports error

[29] At each NE, enter the command (RTP-004):

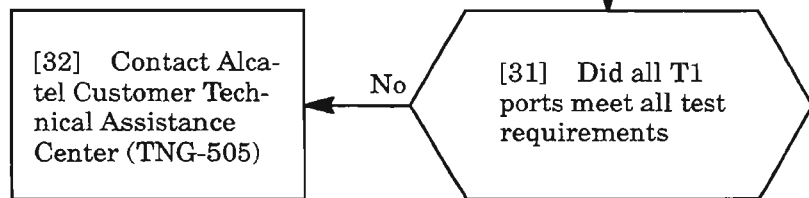
**RTRV-PM-T1:[tid]:aidt1:[ctag];**

where: aidt1 = dgx-T1-pathno or ALL

dgx = DG1, DG2 or DG3

pathno = 1...28 (DS1 line no.)

[30] From the response, verify that bipolar violations (BPV) and one ESL/second are reported during the time period



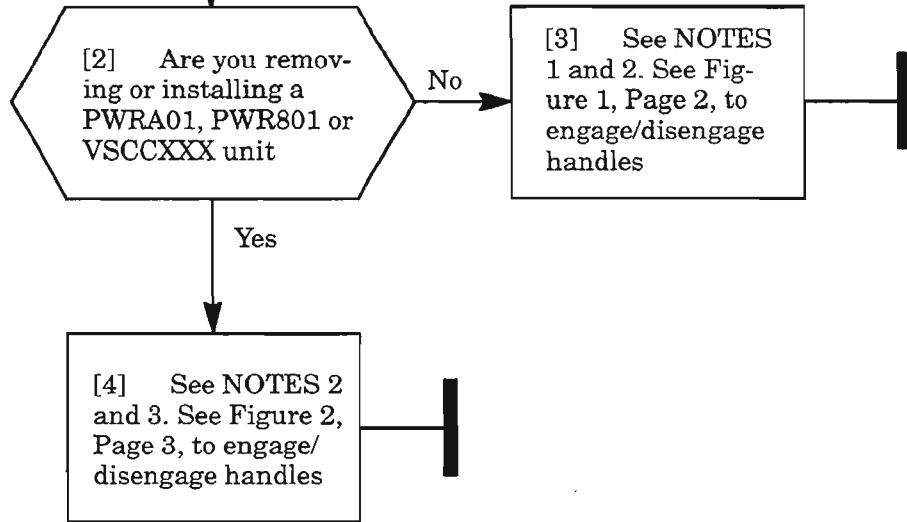
[33] Remove all test equipment, patch cords and loopbacks

[34] If necessary, edit the T1 ports to return parameters to their previous values (DLP-212)

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 8 of 8	018

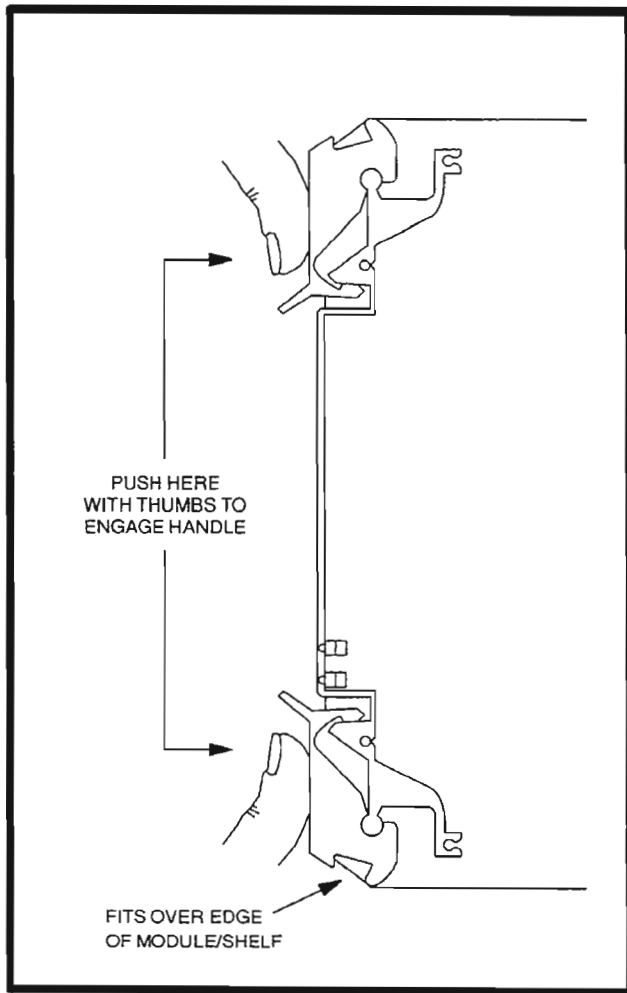


**[1] WARNING: This equipment contains static-sensitive devices. See DLP-002 for special handling instructions.**

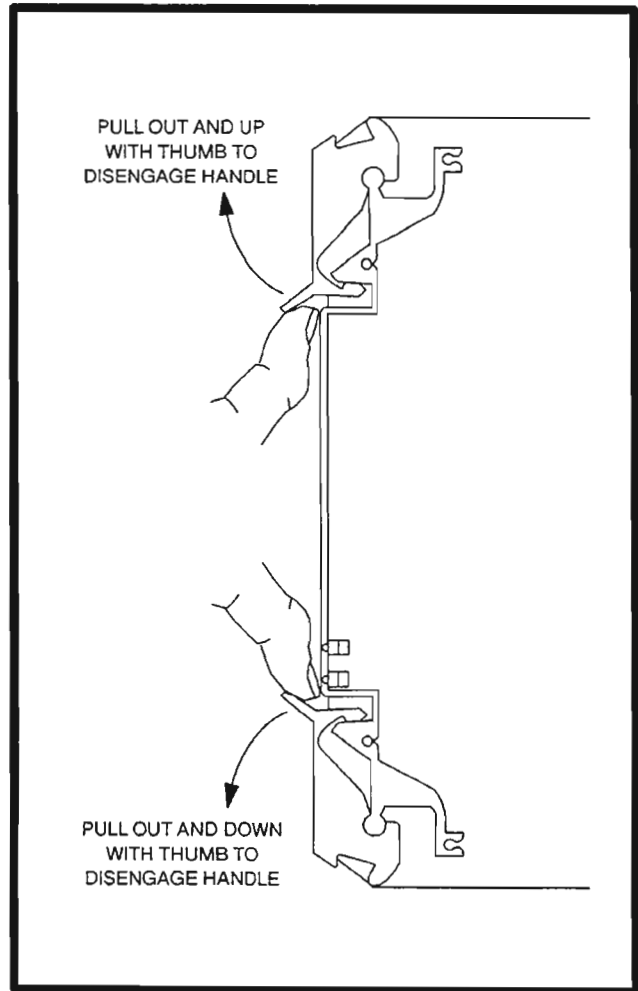


- NOTES:**
1. All units except PWRA01, PWR801 (used in ADM150 shelf only), and VSCCXXX are equipped with special locking type handles for inserting and removing the units. Figure 1, Page 2, shows how to engage/disengage the handles.
  2. Plug-in units have either one or two handles. On units with only one handle, the bottom handle is present.
  3. PWRA01, PWR801 (used in ADM150 shelf only), and VSCCXXX units have handles that require turning the thumbscrew(s) after the unit is installed, or to remove the unit.

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 1 of 3	100



ENGAGE (INSERT)

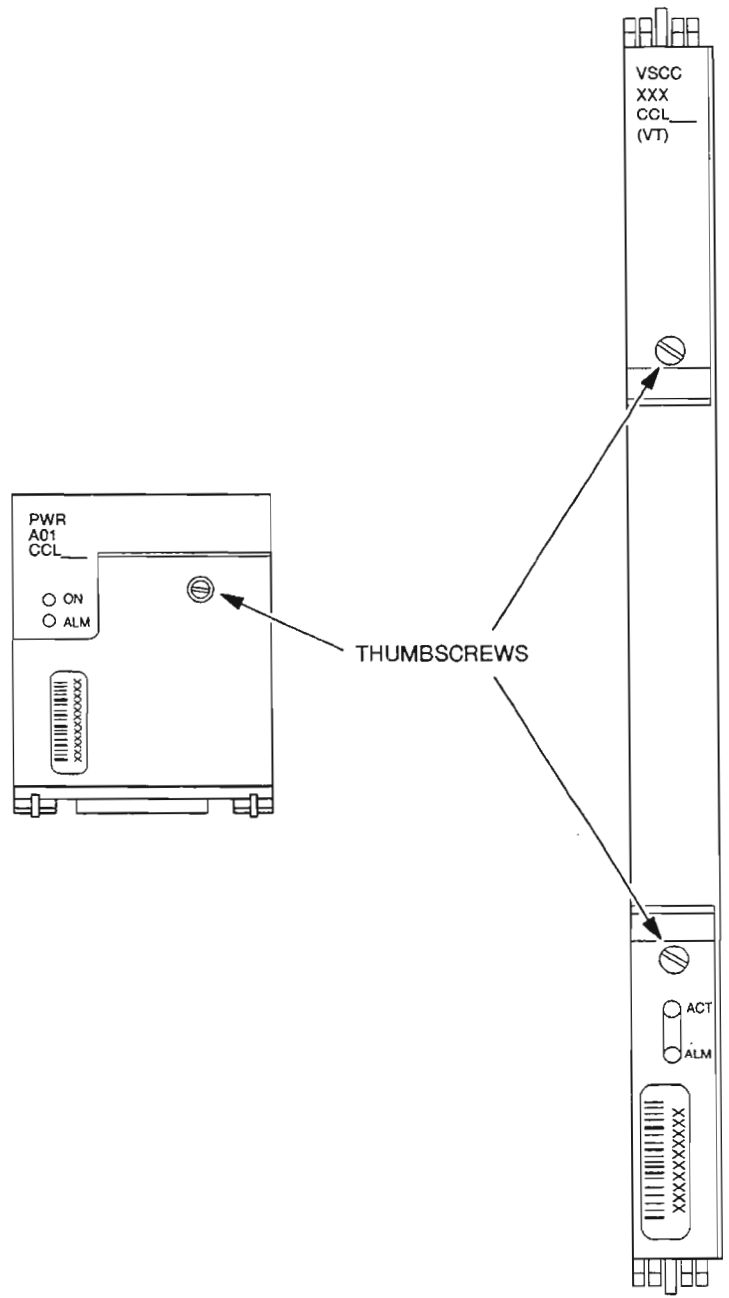


DISENGAGE (REMOVE)

A6914

Figure 1. Handle Locations on Plug-in Units

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 3	100

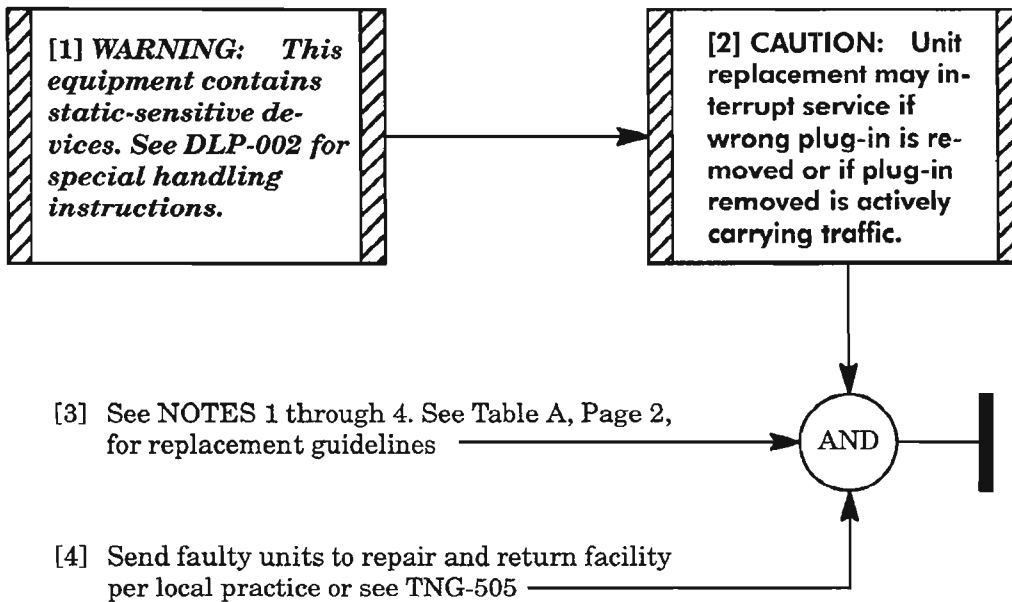


A7853

Figure 2. PWRA01 and VSCCXXX Units

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 3 of 3	100





- NOTES:**
1. This procedure provides the steps for replacing a faulty or suspected faulty plug-in unit. Do not remove a unit that is providing service.
  2. In this procedure, the unit being replaced and, if applicable, its associated facility may be placed into the Out-Of-Service for Maintenance activity state (OOS-MT) using the RMV command to prevent additional alarms. This is optional and per local procedure. Use the RST command to restore unit to In-Service (IS) after it is replaced.
  3. Replace a plug-in unit with the same type of plug-in. If a unit is being replaced with a different type of plug-in, edit the data base entry to reflect the new equipment. If the ED-EQPT entry is not accepted, delete the old unit (DLT-EQPT command) and enter the new unit (ENT-EQPT command).
  4. See Table A, Page 2. For duplex equipment (CLK, DMI, LIF, VSCC101), switch traffic (SW-DX-EQPT command) to the standby unit, if the unit being replaced is active. If the unit being replaced is an A-side unit and revertive switching is selected, a switch to the B-side unit reverts to the A-side unit after approximately two minutes (if the A-side unit is equipped and able to carry traffic). Therefore, unplug the unit being replaced within two minutes after entering the switch command. As an alternative, edit the equipment parameters (ED-EQPT command) to disable revertive switching before replacing the unit.

**Table A. 1603/12 SM Plug-in Units Replacement Summary**

UNIT	PROCEDURE
CLK20X	<ol style="list-style-type: none"> <li>1. <b>CAUTION: If provided, BITS input/output is interrupted on SYNCPRI if CLK-A is removed, and on SYNCSEC if CLK-B is removed.</b></li> <li>2. If DMI, LIF, or VSCC101 units are active on the same side as CLK being replaced, switch unit(s) to standby side (SW-DX-EQPT command). If HIF is active on side being replaced, switch HIF per steps for HIF below.</li> <li>3. If unit being replaced is active and duplex, switch to standby unit (SW-DX-EQPT command).</li> <li>4. Replace unit with spare (DLP-106).</li> <li>5. If necessary, switch service back to replaced unit (SW-DX-EQPT command).</li> </ol>
COA30X or COA40X	<ol style="list-style-type: none"> <li>1. <b>CAUTION: Do not remove NEP301, initialize system (cold- or warm-start), or remove power while COA is being replaced (provisioning data base will be lost).</b></li> <li>2. Replace unit with spare (DLP-103).</li> <li>3. If BKUPMEMP alarm is reported, reset COA; if BKUPMEMP alarm persists, replace COA.</li> <li>4. If MEMVER or MEMDIF alarm is reported with new COA, copy data base from NEP or to NEP as required (DLP-123).</li> </ol>
DMI102/ LIFX01	<ol style="list-style-type: none"> <li>1. If unit is active and duplex, switch to standby unit (SW-DX-EQPT command).</li> <li>2. Replace unit with spare (DLP-108).</li> <li>3. Enter RTRV-COND-EQPT on unit: If alarm condition = BOOT or PROGVER, download software (DLP-116) or copy software program from peer DMI or LIF (DLP-122) (applies only if duplex configuration and peer unit has desired software loaded).</li> <li>4. If necessary, switch service back to replaced unit (SW-DX-EQPT command).</li> </ol>
HIFXXX	<p><b>LINEAR CONFIGURATION:</b></p> <ol style="list-style-type: none"> <li>1. If unit is active and duplex, switch to standby unit (OPR-PROTNSW-OC3 command with LOCKOUT option if revertive switching is used).</li> <li>2. If unidirectional protection switching is used, using remote login, verify that far-end NE is not receiving on the side to be removed (RTRV-OC3 command) (DLP-214).</li> <li>3. If necessary, switch far-end side (OPR-PROTNSW-OC3 command with LOCKOUT option if revertive switching is used).</li> <li>4. Replace unit with spare (DLP-107).</li> <li>5. Enter RTRV-COND-EQPT on unit: If alarm condition = BOOT or PROGVER, download software (DLP-116) or copy software program from peer HIF (DLP-122) (applies only if duplex configuration and peer HIF has desired software loaded).</li> <li>6. Release OC-3 protection switch (RLS-PROTNSW-OC3 command) at the near end and at the far end, if necessary.</li> </ol>

ISSUE 3	OCT 1994
ALCL 363-203-502	DLP
PAGE 2 of 5	101

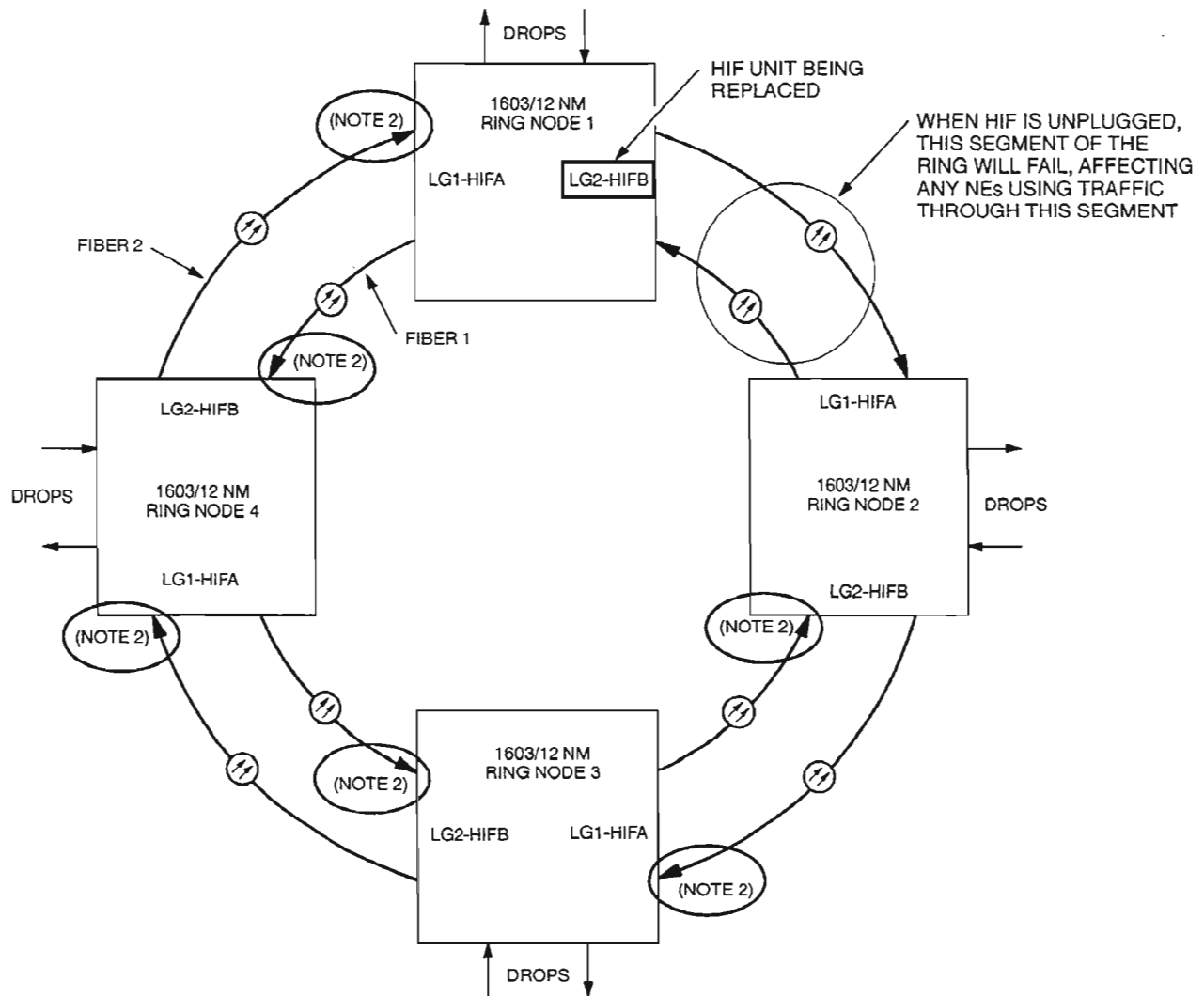
**Table A. 1603/12 SM Plug-in Units Replacement Summary (cont)**

UNIT	PROCEDURE
HIFXXX (cont)	<p><b>UPPS RING CONFIGURATION:</b></p> <ol style="list-style-type: none"> <li><b>CAUTION:</b> Unplugging the HIF removes a segment of the ring paths from the network and could cause possible service interruptions if there are other faults in the network that deny ring path switching. Take every precaution to ensure that the HIF being removed is faulty or that its removal will not cause service interruptions. See Figure 1, Page 5, for a typical ring network.</li> <li>At each NE, verify that there are no equipment failures (except for the HIF being replaced) by entering the RTRV-ALM-EQPT::ALL; command. Resolve any service-affecting alarms before continuing.</li> <li>At each OC3 interface in the network, except the one terminating the span from the HIF being replaced (see circled interfaces in Figure 1), verify that there are no service-affecting alarms by entering the RTRV-ALM-OC3::ALL; command. Look for the following conditions: LOS, LOF BERL-LT or BERL-HT. If found, resolve these alarms before continuing.</li> <li>At each NE, verify that there are no STS1 or VT1 path forced-level switches in effect (FRCDWKSWBK or FRCDWKSWPR conditions from the response of RTRV-COND-STs1 and/or RTRV-COND-VT1 commands).</li> <li>If forced switches are found, determine why the forced switch conditions exist. Release the forced switches to allow path selectors to switch away from the HIF being removed (RLS-PROTNSW-STs1 and/or RLS-PROTNSW-VT1 commands).</li> <li>Enter RMV-OC3 command for HIF being replaced (sends AIS on ring to switch path selectors away from HIF) (DLP-214).</li> <li>Replace HIF unit with spare (DLP-107).</li> <li>Enter RTRV-COND-EQPT on unit: If alarm condition = BOOT or PROGVER, download software to unit (DLP-116).</li> <li>Restore OC3 facility (RST-OC3::LGx-OC3y;) (DLP-214).</li> </ol>
LDRX01	<p><b>NOTE:</b> <i>The LDR units switch with the LIF units (i.e., Side-A LDR is active when Side-A LIF is active).</i></p> <ol style="list-style-type: none"> <li>If unit is active and duplex, switch associated LIF to standby unit (SW-DX-EQPT command).</li> <li>Replace unit with spare (DLP-109).</li> <li>If necessary, switch service back to replaced unit (SW-DX-EQPT command).</li> </ol>
NEP301	<ol style="list-style-type: none"> <li>Replace unit with spare (DLP-104).</li> </ol> <p><b>NOTE:</b> <i>Data base is automatically copied from COAXXX.</i></p> <ol style="list-style-type: none"> <li>If NEP is running bootcode (unit ABN LED flashing) or PROGVER alarm, download software to NEP (DLP-116).</li> </ol>

Table A. 1603/12 SM Plug-in Units Replacement Summary (cont)

UNIT	PROCEDURE
PWRA01	<p><b>NOTE:</b> <i>On an alarmed PWRA01, remove unit for five seconds and reseal before replacing with a spare.</i></p> <ol style="list-style-type: none"> <li>1. Replace unit with spare (DLP-102).</li> </ol>
PWR801	<p><b>NOTE:</b> <i>PWR801 used in ADM150 shelf only.</i></p> <ol style="list-style-type: none"> <li>1. <b>WARNING:</b> <i>Turn off the plug-in power switch before removing or installing this unit.</i></li> <li>2. If necessary, switch service <u>from</u> CLK201 and DMI102/LIF201 units on side (A or B) powered by the PWR801 being replaced (SW-DX-EQPT command).</li> <li>3. Turn off unit power switch and remove unit being replaced.</li> <li>4. Verify power switch is OFF on spare unit. Install spare unit (DLP-102).</li> <li>5. Turn on unit power switch.</li> </ol>
VSCC101	<ol style="list-style-type: none"> <li>1. If unit is active and duplex, switch to standby unit (SW-DX-EQPT command).</li> <li>2. Replace unit with spare (DLP-105).</li> <li>3. Enter RTRV-COND-EQPT on unit:  If alarm condition = BOOT or PROGVER, download software (DLP-116) or copy software program from peer VSCC (DLP-122) (applies only if duplex configuration and peer unit has desired software loaded).</li> <li>4. If necessary, switch service back to replaced unit (SW-DX-EQPT command).</li> </ol>
VSCC20X	<ol style="list-style-type: none"> <li>1. <b>CAUTION:</b> <i>The VSCC20X units have no active components, but may interrupt service if removed. Call Alcatel Customer Service (TNG-505) before removing or replacing the VSCC20X unit(s). To replace the VSCC20X with the VSCC101, refer to NTP-012 in the Turn-up and Administration Manual (650205-823-014).</i></li> </ol>
VTG101	<ol style="list-style-type: none"> <li>1. If unit is active, inhibit automatic switching to working unit (INH-SWTOWKG-EQPT command).</li> <li>2. Switch to protection unit (SW-TOPROTN-EQPT command).</li> <li>3. Replace unit with spare (DLP-109).</li> <li>4. If inhibited, allow switching (ALW-SWTOWKG-EQPT).</li> </ol>





**NOTES:**

ENTER THE FOLLOWING COMMANDS TO VERIFY THAT THERE ARE NO PREEXISTING CONDITIONS IN THE RING NETWORK THAT WOULD NOT ALLOW IT TO CARRY TRAFFIC WHEN THE HIF UNIT IS REMOVED:

1. AT EACH NE, VERIFY THAT THERE ARE NO SERVICE-AFFECTING EQUIPMENT FAILURES (EXCEPT FOR THE HIF TO BE REMOVED) BY ENTERING THE COMMAND:

**RTRV-ALM-EQPT::ALL;**

2. AT EACH RECEIVE OC3 INTERFACE CIRCLED IN THE RING DIAGRAM, VERIFY THAT THERE ARE NO OC3 TRAFFIC-AFFECTING CONDITIONS (LOS, LOF, BERL-LT OR BERL-HT) BY ENTERING THE COMMAND:

**RTRV-COND-OC3::LGx-OC3;**

WHERE: x = 1 OR 2

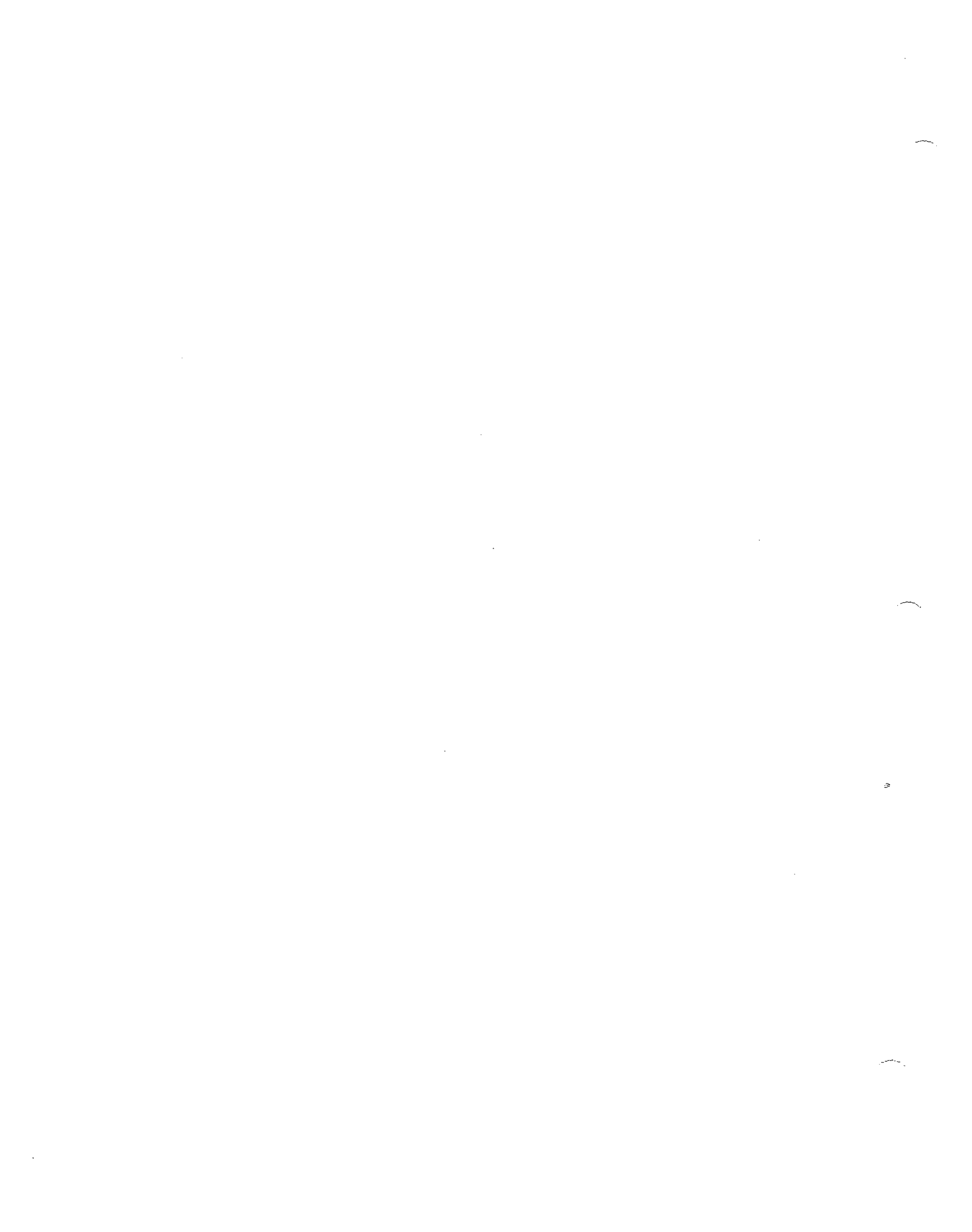
3. AT EACH NE, VERIFY THAT NO FORCED SWITCH CONDITIONS (FRCDWKSWBK OR FRCDWKSWPR) EXIST BY ENTERING THE FOLLOWING COMMANDS FOR EACH DROP GROUP:

**RTRV-COND-VT1::DGx-VT1-1-1&&-28; and RTRV-COND-STS1::DGx-STS1-1;**

WHERE: x = 1, 2, OR 3

A8074

**Figure 1. Replacing HIF Unit in a Ring Network**



[1] **WARNING:** *This equipment contains static-sensitive devices. See DLP-002 for special handling instructions.*

[2] Is the unit being installed a PWRA01

No

Page 3

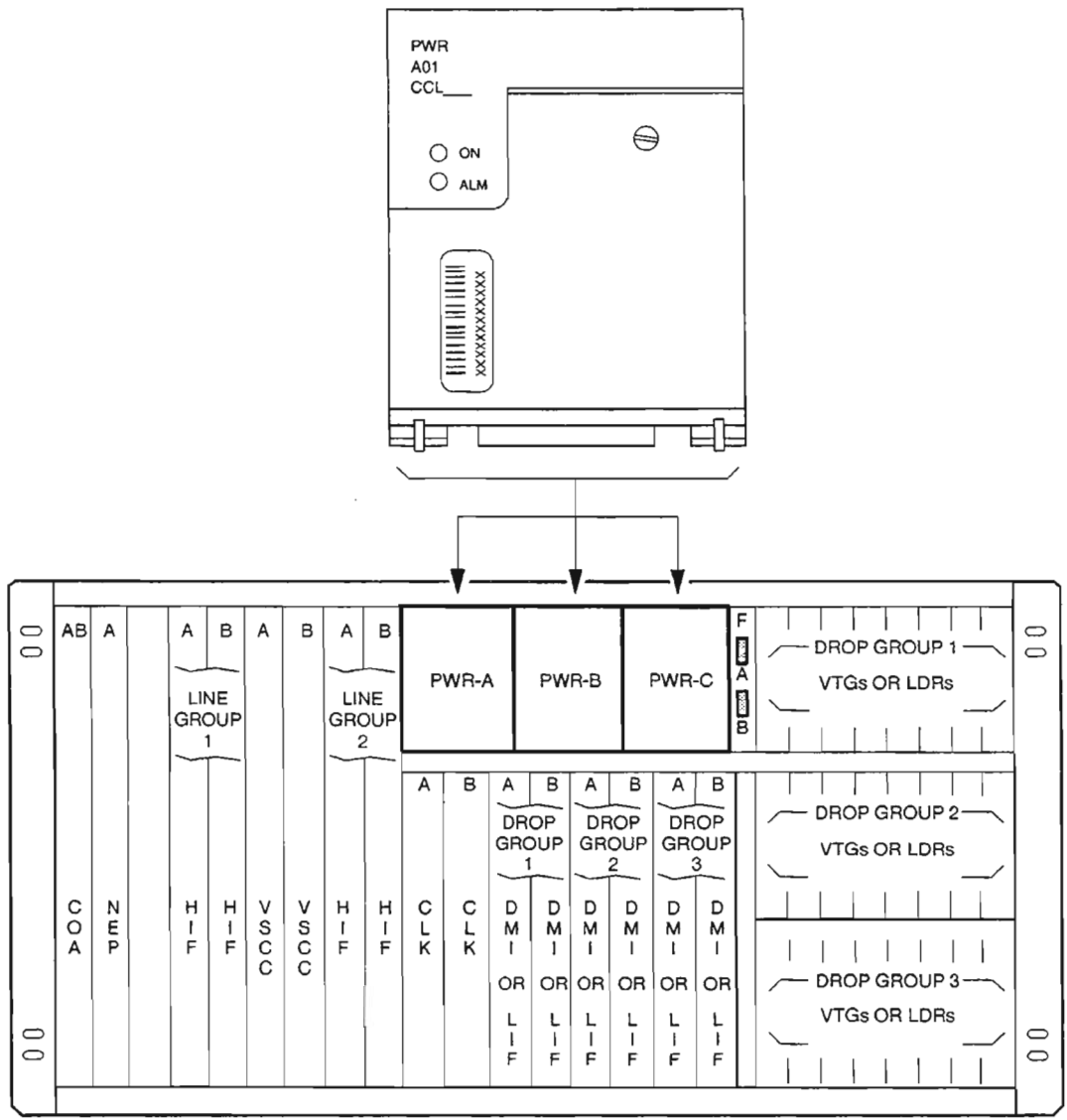
Yes

[3] See Figure 1, Page 2, for location of plug-in units

[4] On power converter plug-in unit(s), turn thumbscrew to the left, open plug-in handle and install unit(s) into PWR-A slot, PWR-B slot, and PWR-C slot (DLP-100)

[5] Close handle, seat unit(s) in place and turn thumbscrew hand-tight to the right (DLP-100)

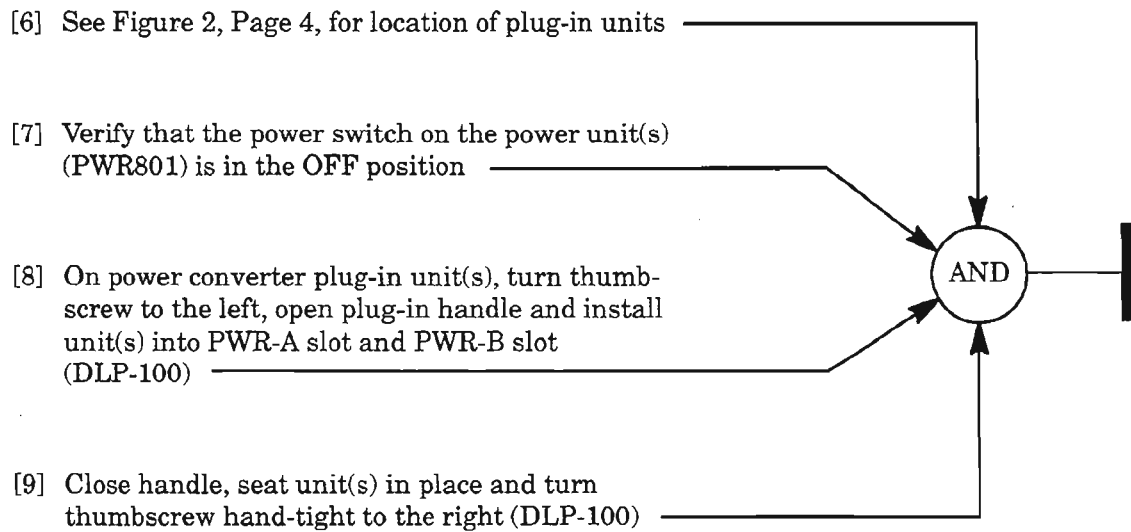
AND

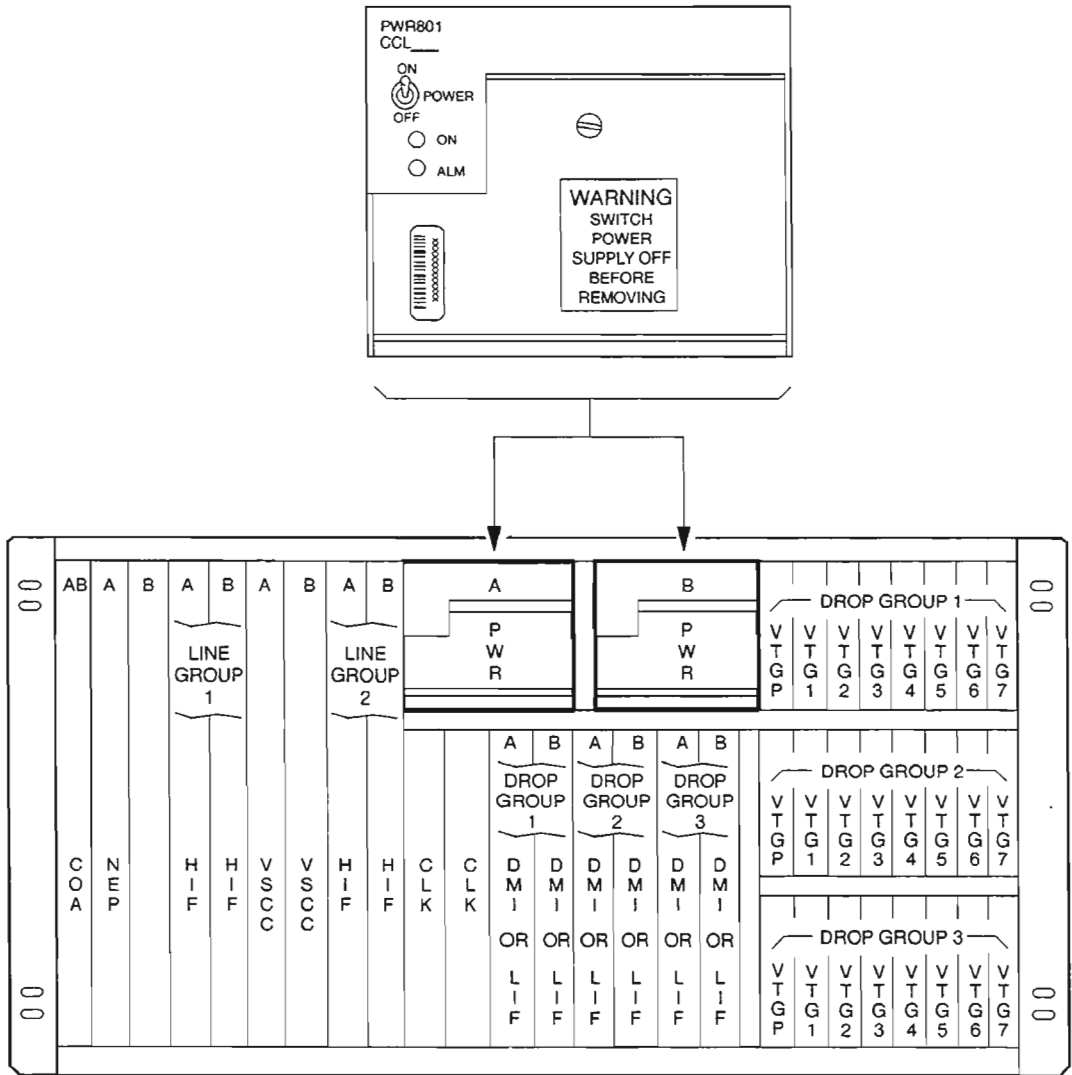


A7852

Figure 1. PWRA01 Plug-in Locations

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 4	102





A7019Rev1

Figure 2. PWR801 Plug-in Locations

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 4 of 4	102

**[1] WARNING: This equipment contains static-sensitive devices. See DLP-002 for special handling instructions.**

[2] See Figure 1, Page 2, for location of plug-in units

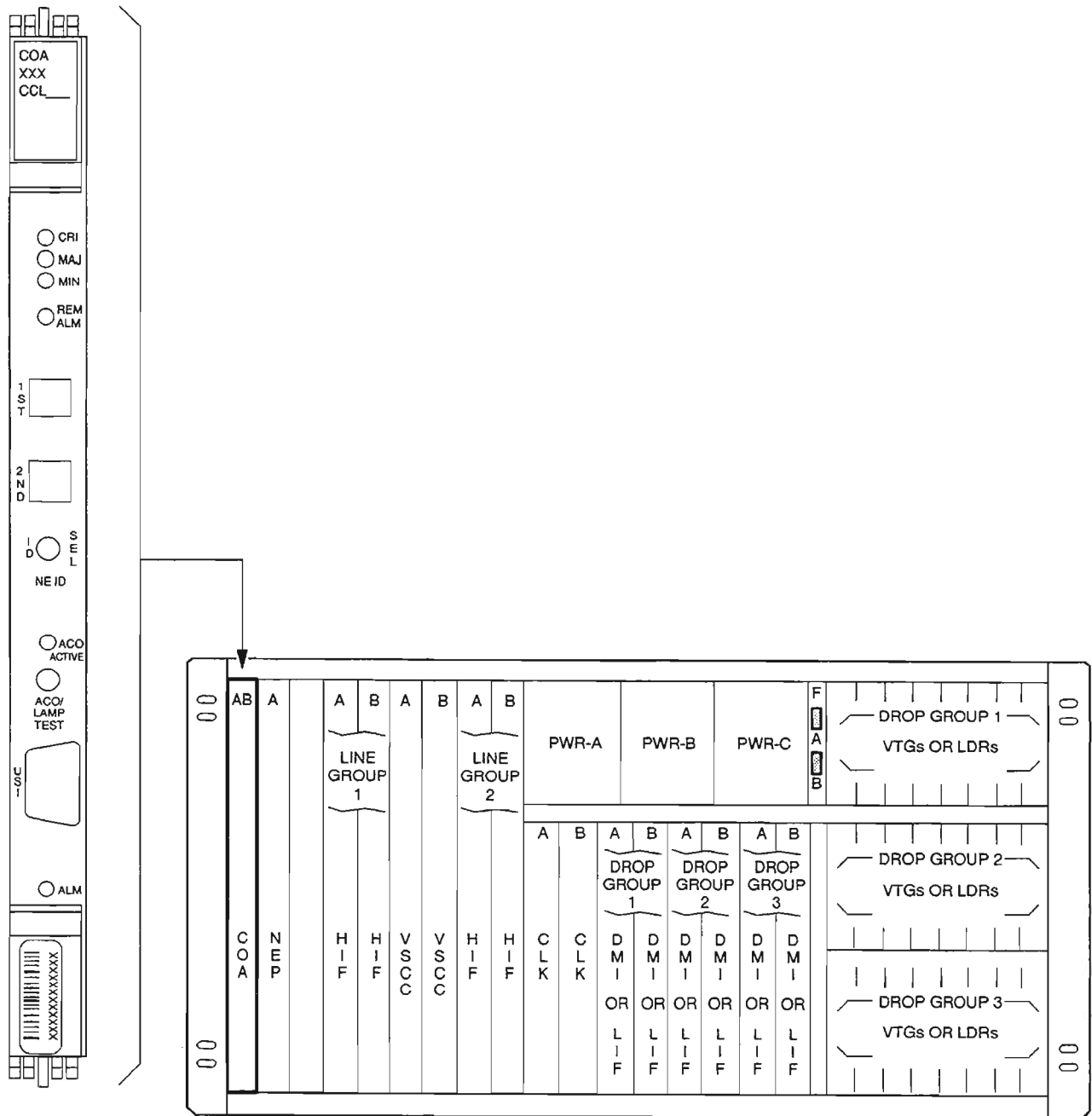
[3] See NOTE 1. Verify proper plug-in unit code (COA301/302/401/402)

[4] On COA plug-in unit, open plug-in handles and install unit into COA-AB slot (DLP-100)

[5] Close handle and seat unit in place (DLP-100)



**NOTE:** 1. The COA301 or COA401 provides a secondary craft port (RS-232) which is accessible via wire-wrap pins on the shelf backplane. The COA302 or COA402, instead, provides an RS-422 TBOS interface for serial E2A data to alarm reporting equipment (APR).



A7856Rev1

Figure 1. COAXXX Plug-in Location

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 2 of 2	103

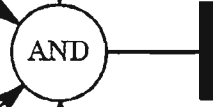


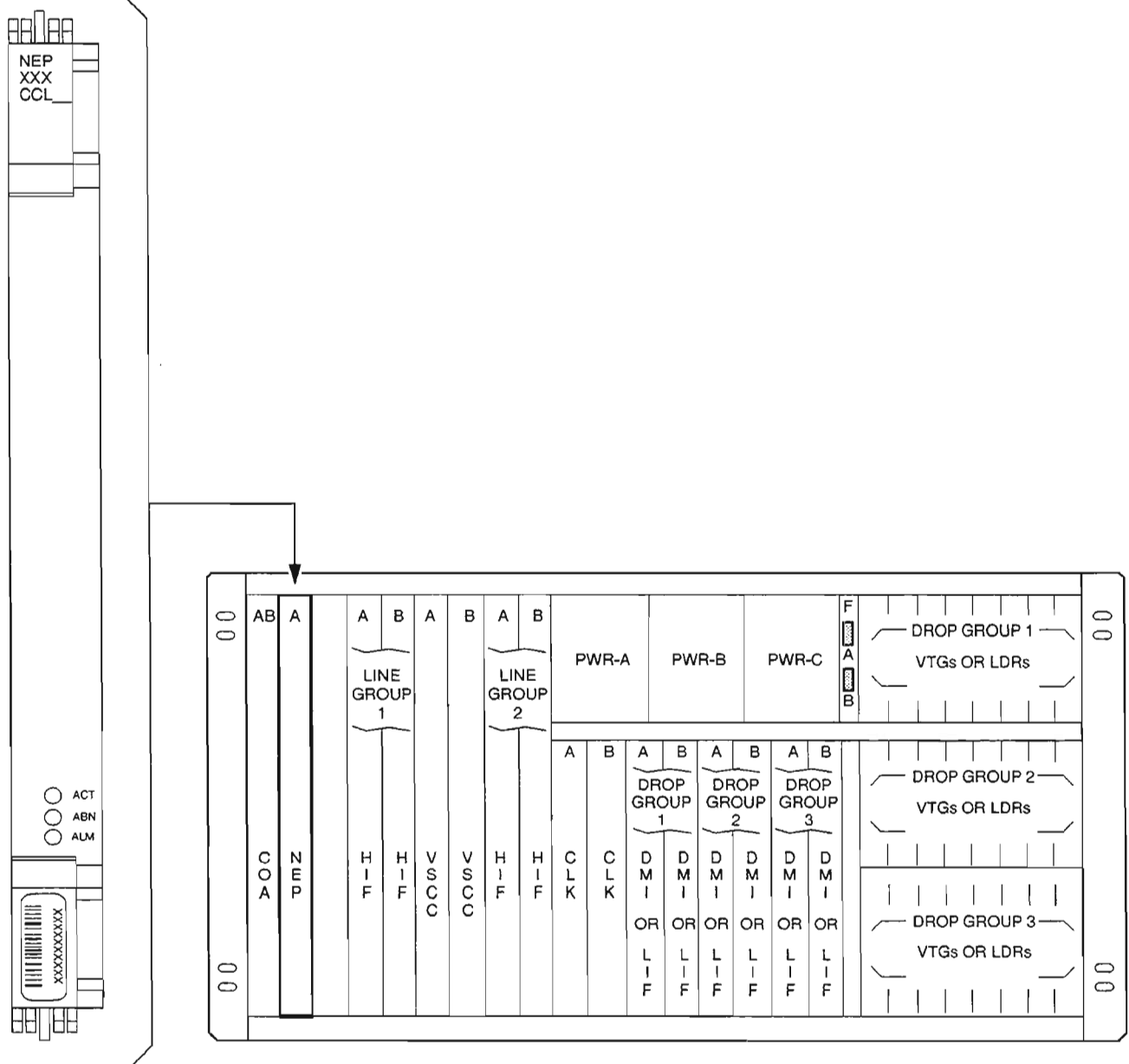
**[1] WARNING: This equipment contains static-sensitive devices. See DLP-002 for special handling instructions.**

[2] See Figure 1, Page 2, for location of plug-in units

[3] On NEP301 plug-in unit, open plug-in handles and install unit into NEP-A slot (DLP-100)

[4] Close handles and seat unit in place (DLP-100)





A7855

Figure 1. NEP301 Plug-in Location

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 2	104

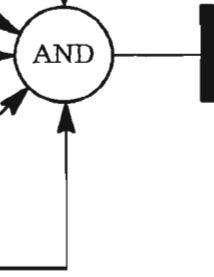
**[1] WARNING:** *This equipment contains static-sensitive devices. See DLP-002 for special handling instructions.*

[2] See Figure 1, Page 2, for location of plug-in units

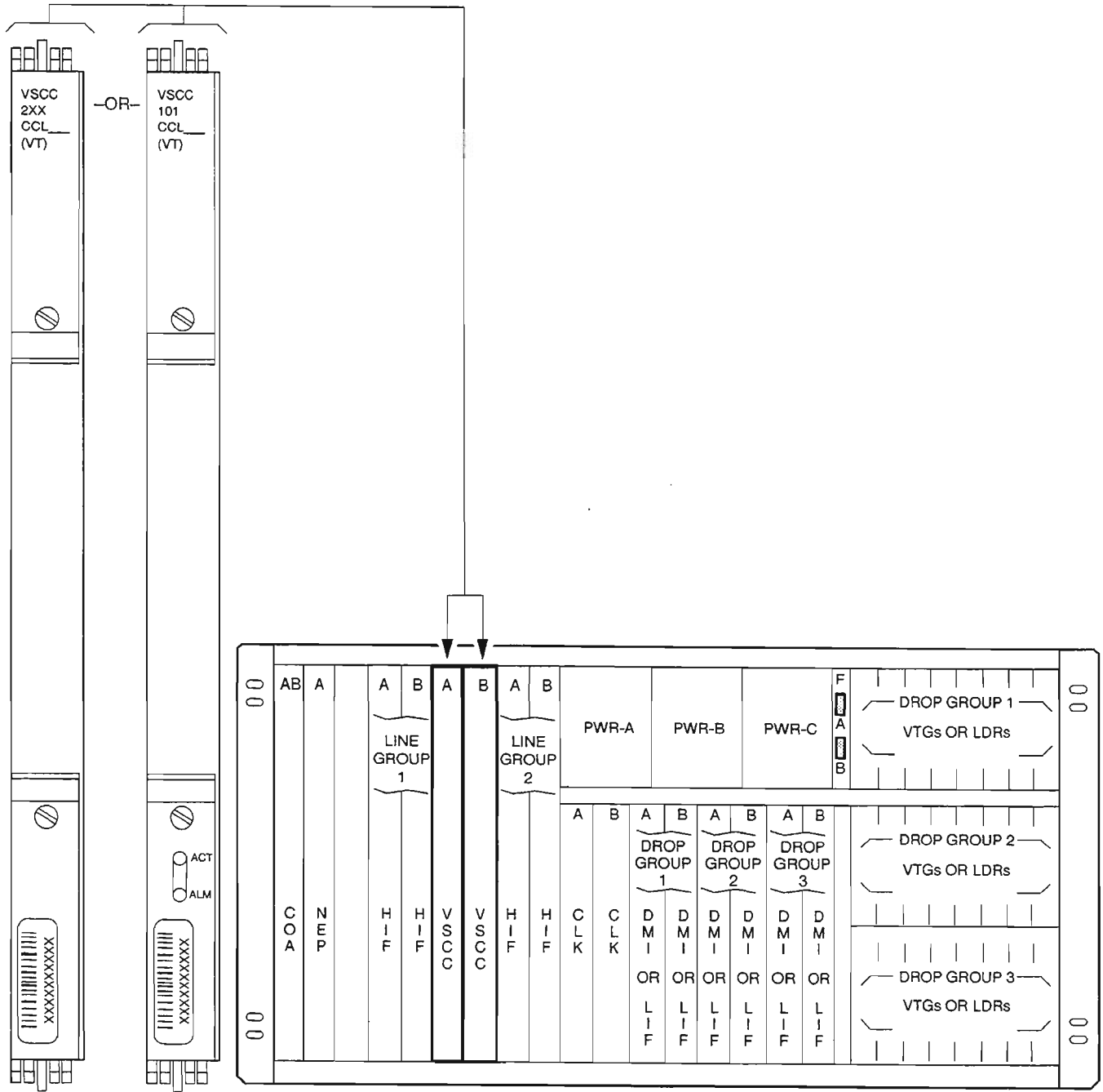
[3] See NOTE 1. Verify proper code of VSCC plug-ins

[4] On VSCC plug-in units, open thumbscrews on plug-in handles and install units into VSCC-A slot and VSCC-B slot (DLP-100)

[5] Close handles and seat units in place (DLP-100)



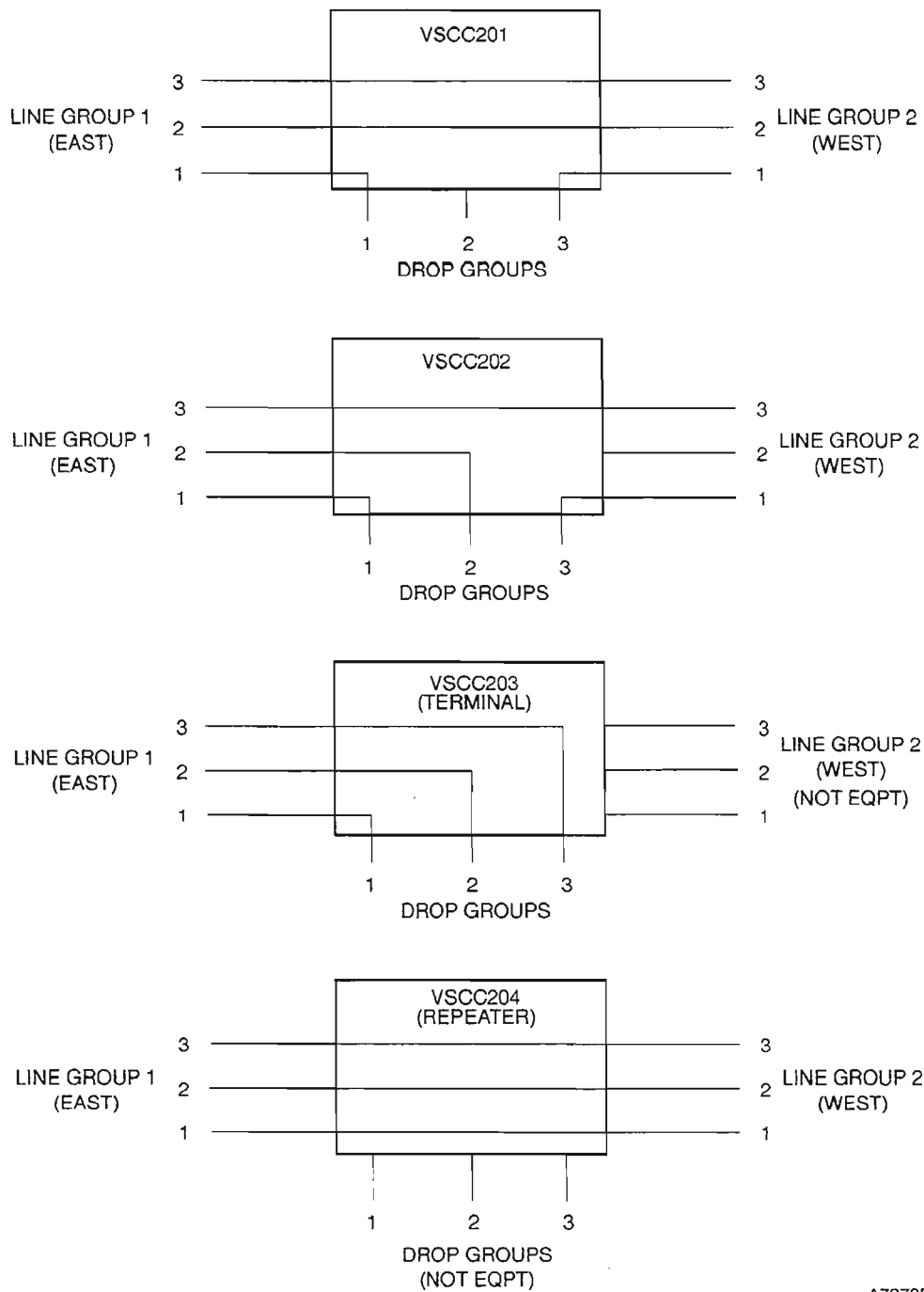
**NOTE:** 1. *If VSCC20X units are being installed, both VSCC20X units (Sides A and B) must be installed and must be the same type (plug-in code). See Figure 2, Page 3, for the cross-connections provided by the VSCC20X units. VSCC101 provides variable cross-connect capability and can be installed in simplex or duplex configuration.*



A7858

Figure 1. VSCC0X Plug-in Locations

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 3	105

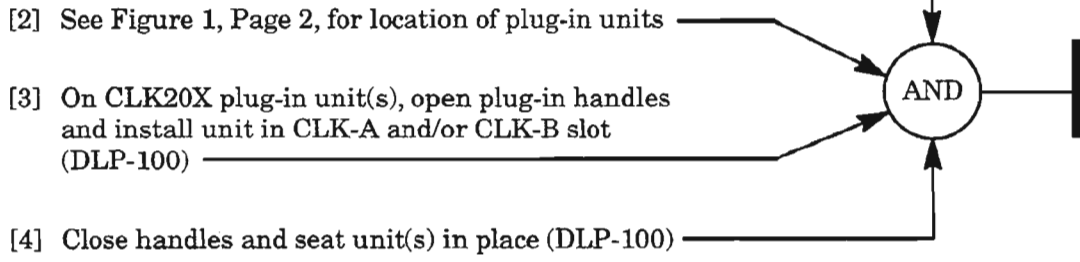


A7073Rev1

Figure 2. VSCC20X Traffic Routing Diagram



**[1] WARNING: This equipment contains static-sensitive devices. See DLP-002 for special handling instructions.**



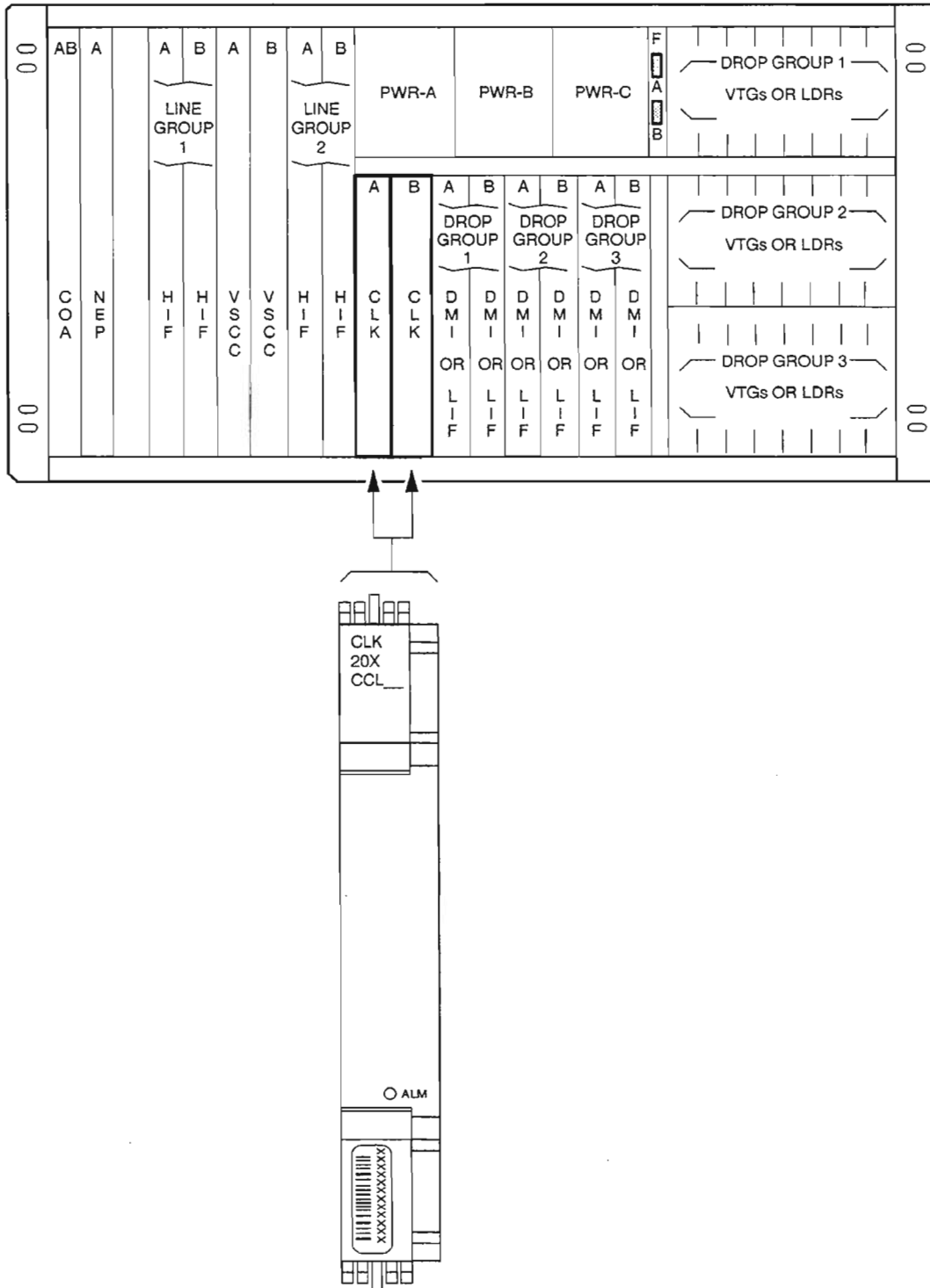


Figure 1. CLK20X Plug-in Locations

A7851Rev1

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 2 of 2	106



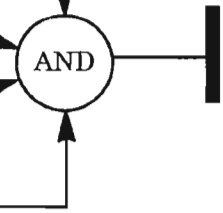
**[1] DANGER:** Exercise caution when handling unterminated fibers. If far-end equipment is active, invisible laser radiation will be present at the fiber ends. Avoid direct exposure to beam.

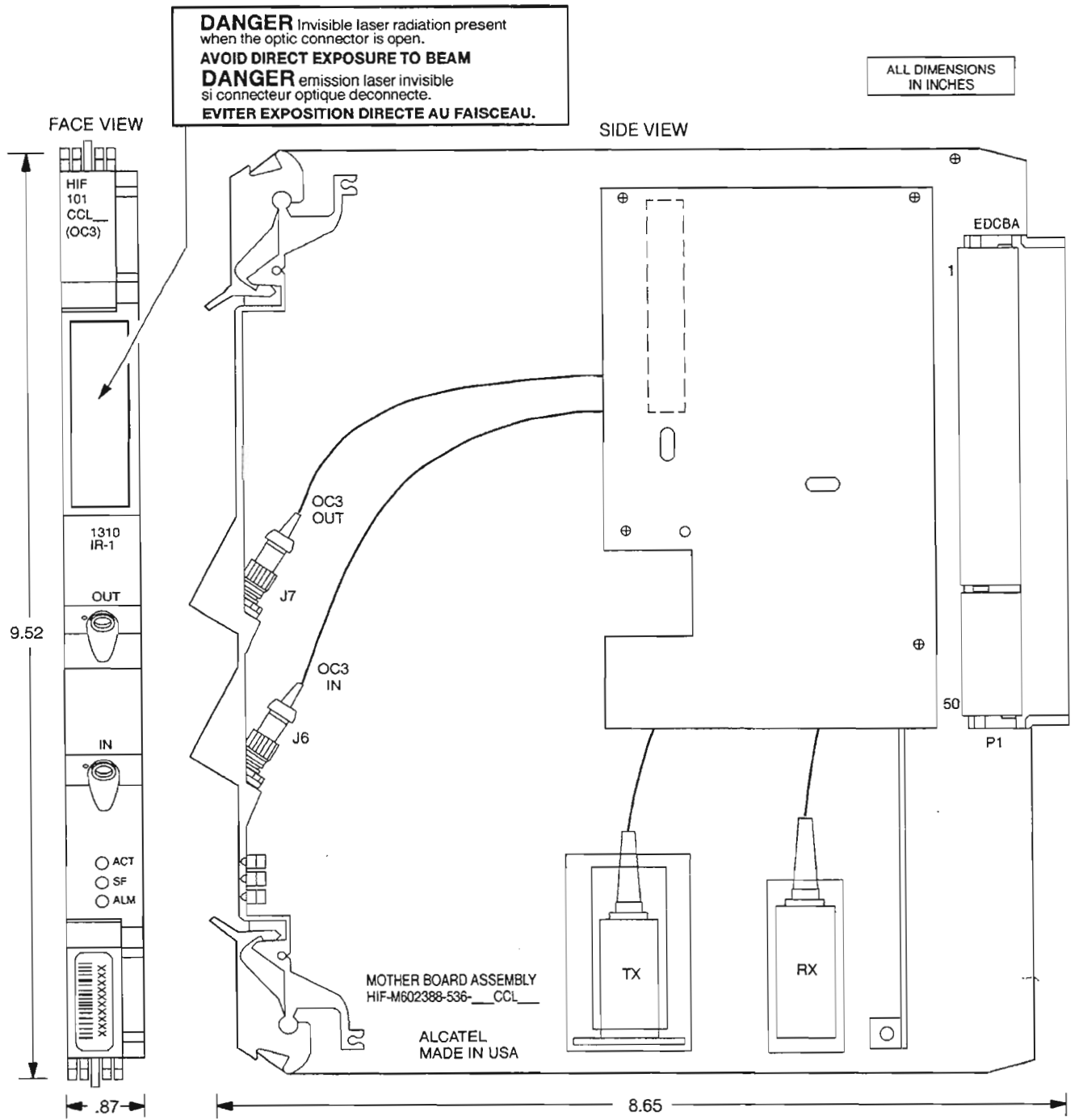
**[2] WARNING:** *This equipment contains static-sensitive devices. See DLP-002 for special handling instructions.*

[3] See Figure 1, Page 2, and Figure 2, Page 3. Determine which Line Group (LG1 and/or LG2) is being equipped and if Side A (HIF-A) and/or Side B (HIF-B) is being equipped

[4] On HIF plug-in unit(s), open plug-in handles and install unit(s) into appropriate HIF slots (DLP-100)

[5] Close handles and seat units in place (DLP-100)



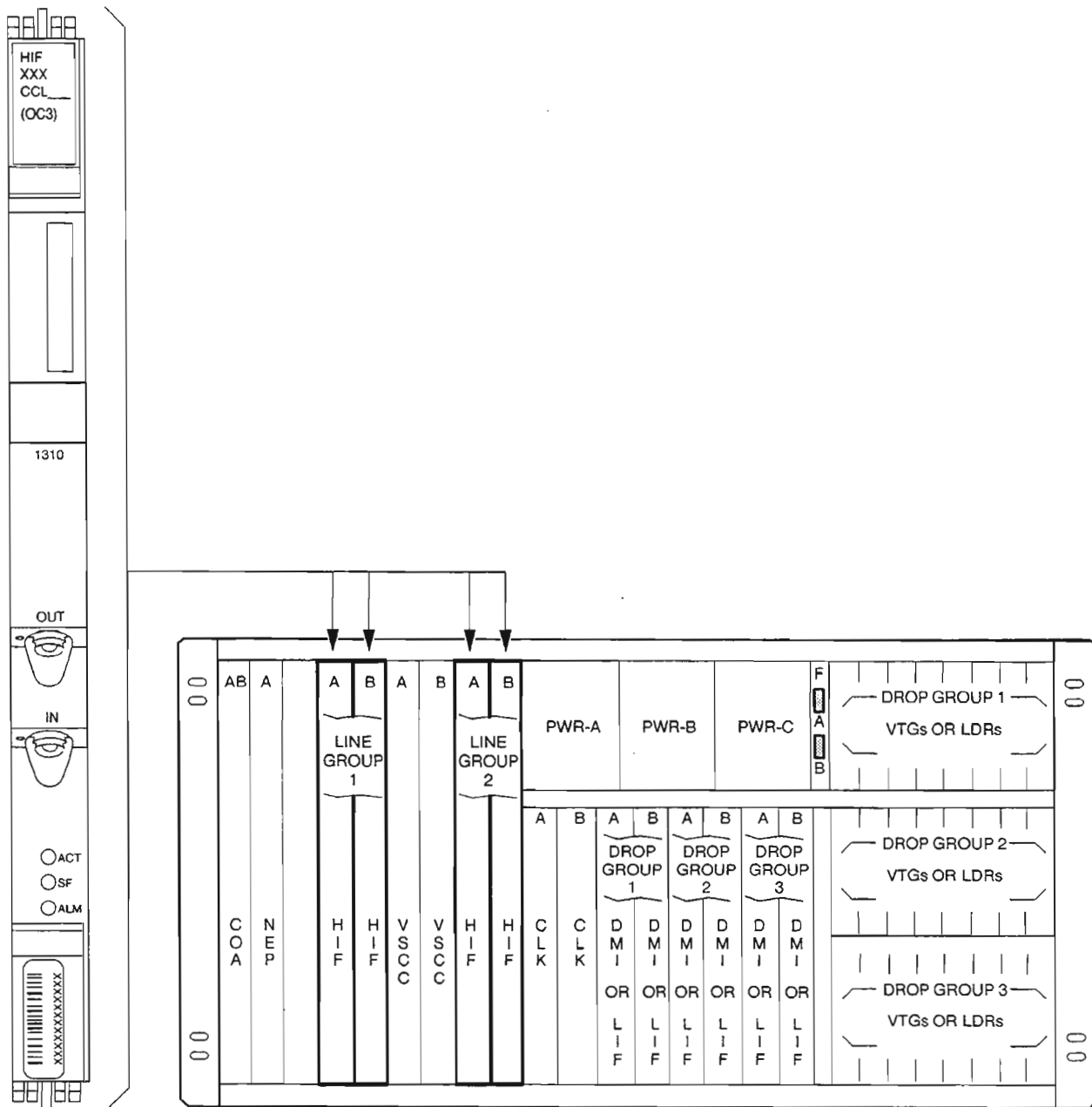


A6987Rev4

Figure 1. HIF101, 625606-000-001, Plug-in Unit

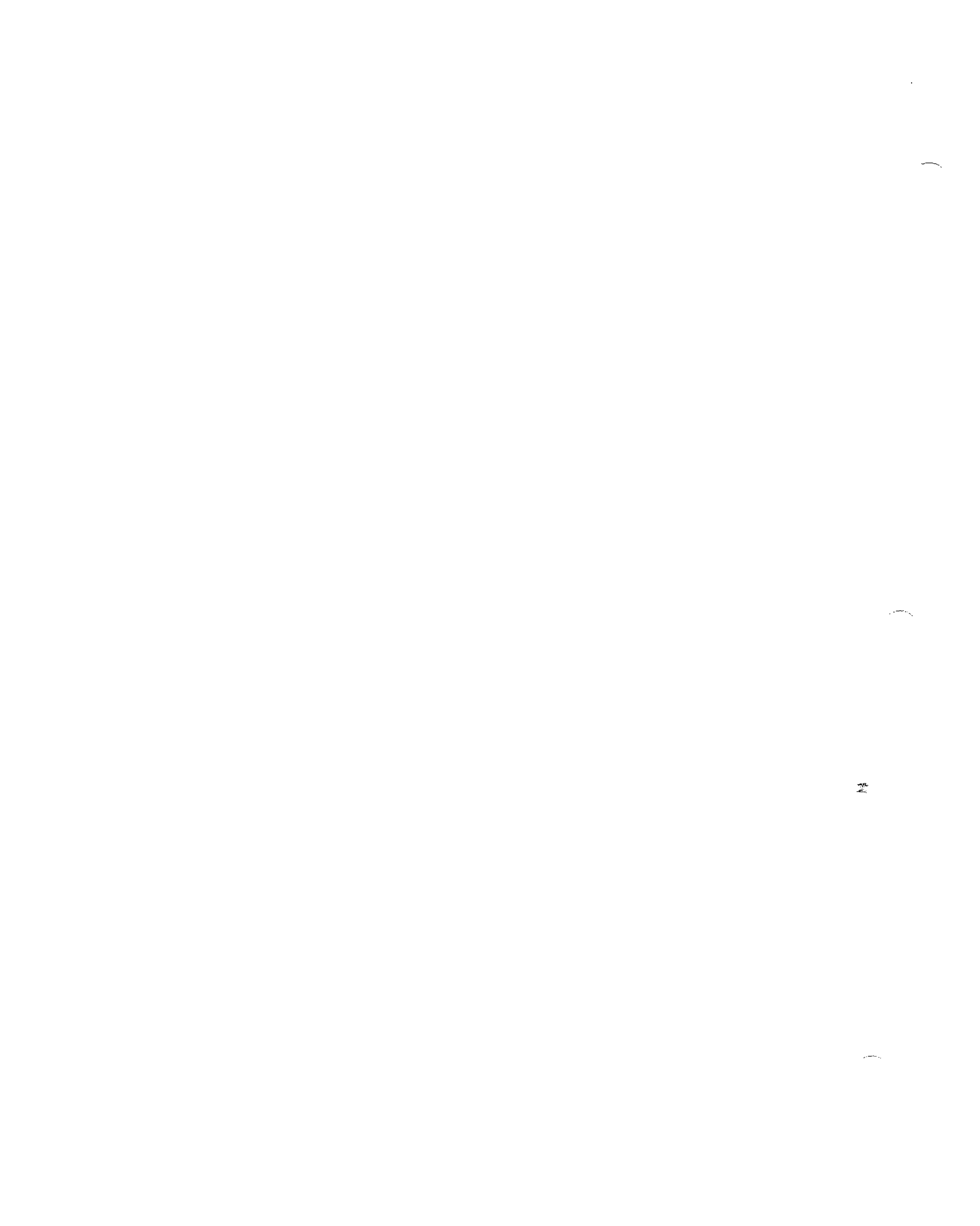
ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 3	107

HIFXXX (OC-3) PLUG-IN INSTALLATION



A7857

Figure 2. HIFXXX (OC-3) Location

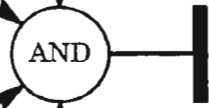


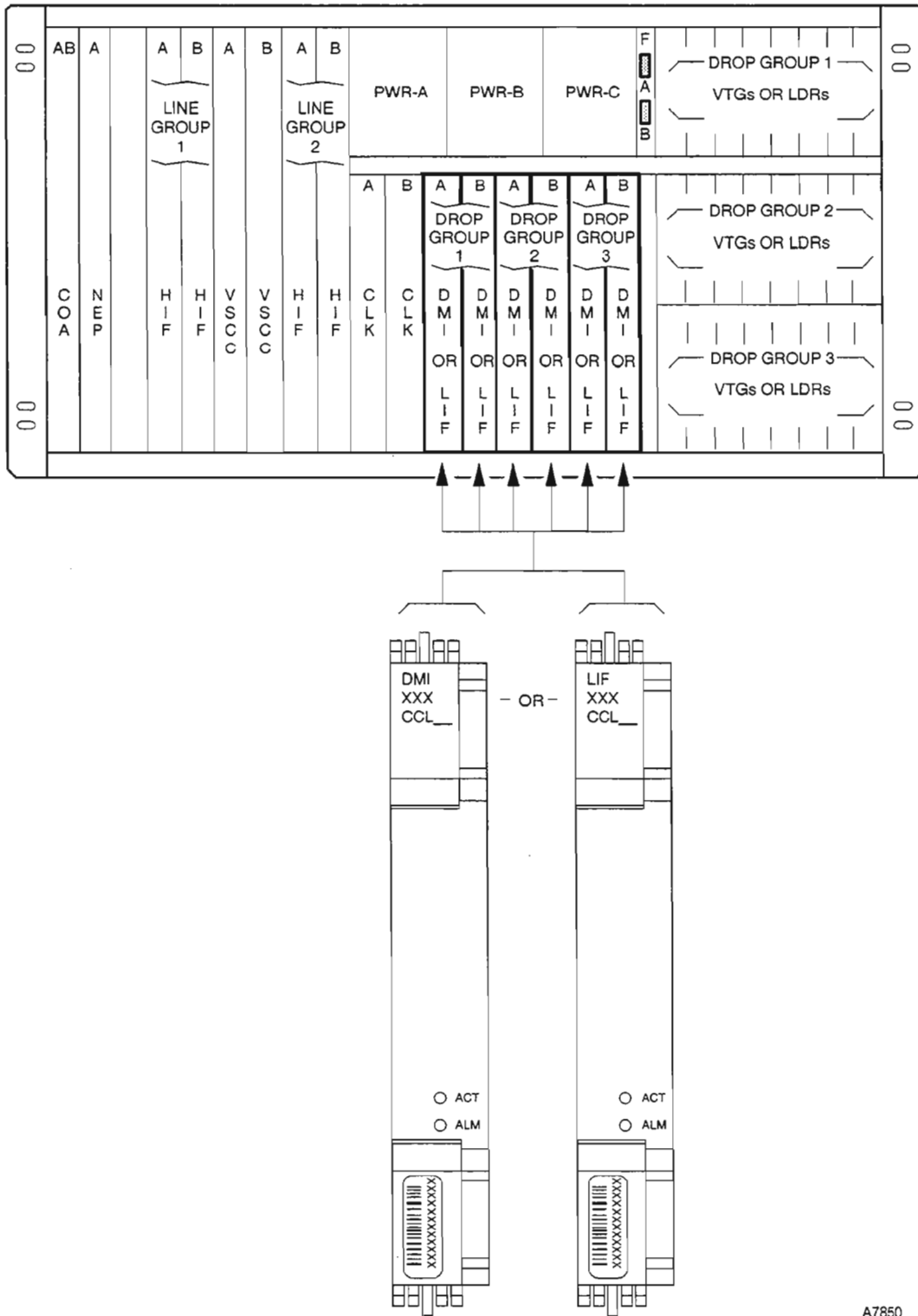
**[1] WARNING: This equipment contains static-sensitive devices. See DLP-002 for special handling instructions.**

[2] See Figure 1, Page 2, for location of plug-in units

[3] On DMI10X/LIFXXX plug-in unit(s), open plug-in handles and install unit(s) into LIF-B/DMI-A and/or LIF-B/DMI-B slot for the Drop Group (1, 2, or 3) being equipped (DLP-100)

[4] Close handles and seat unit(s) in place (DLP-100)

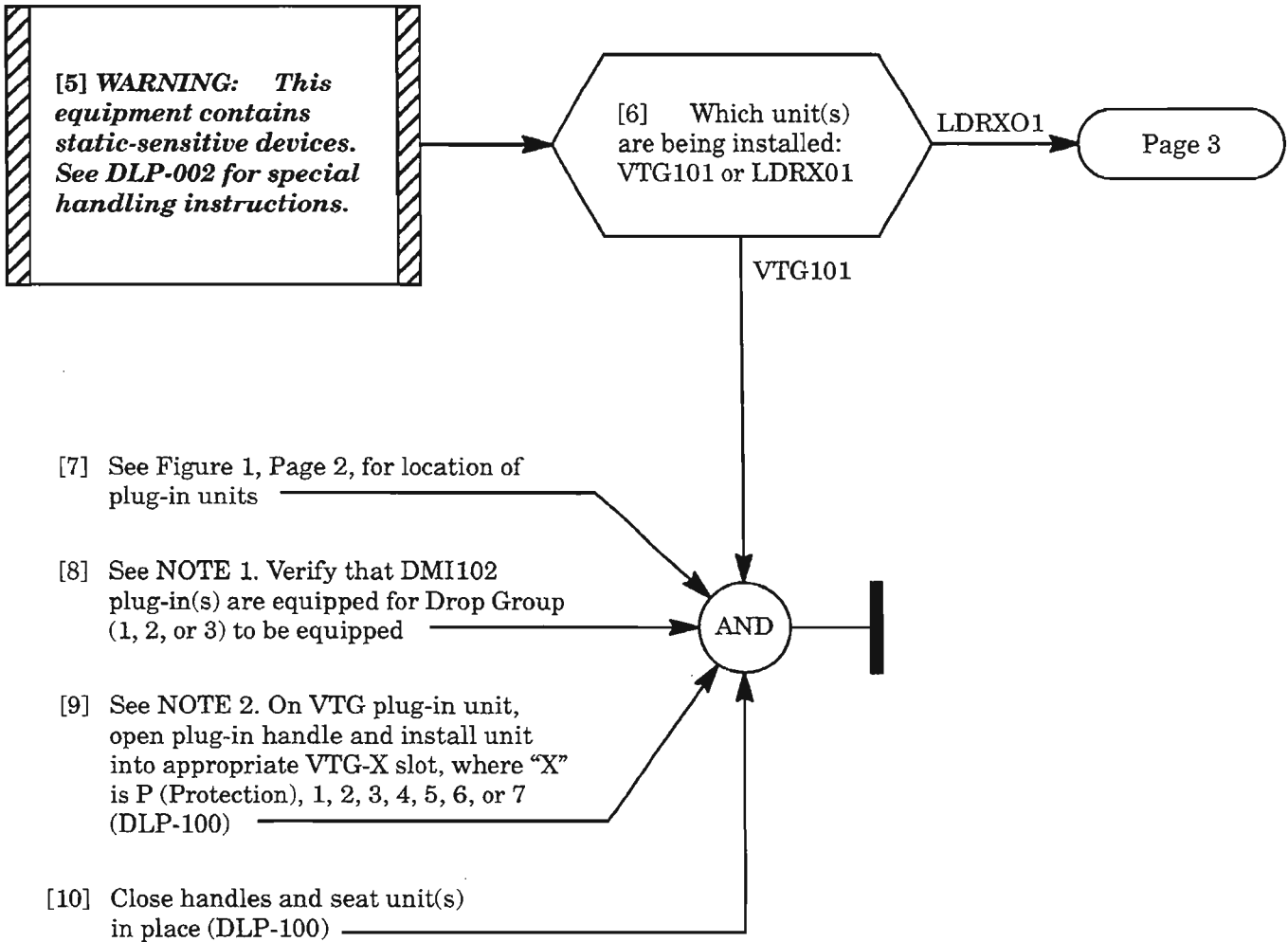




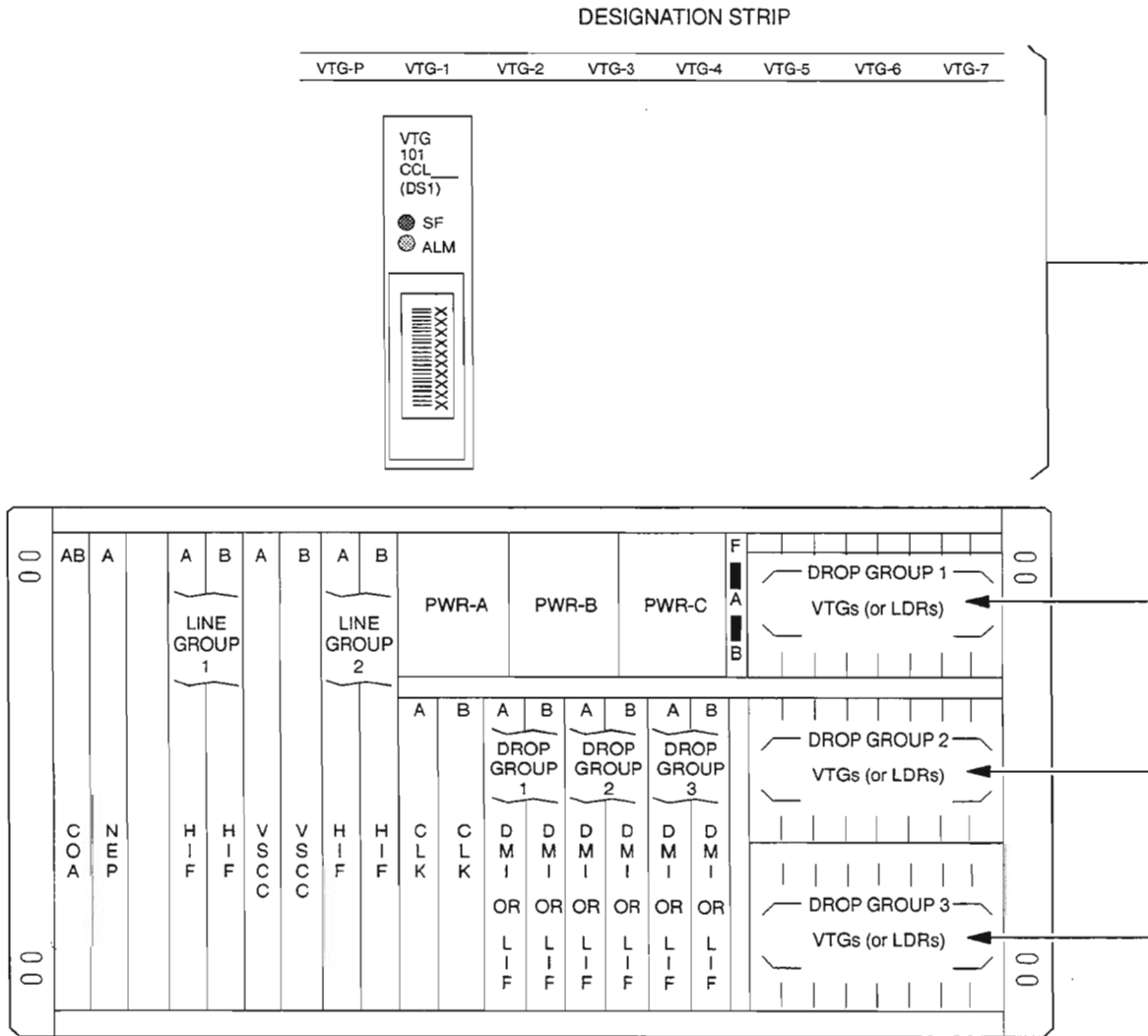
A7850

Figure 1. DMI10X/LIFXXX Plug-in Locations

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 2	108



- NOTES:** 1. *DMI102 plug-ins are required if the drop group is to be equipped with VTG101 asynchronous DS1 plug-ins.*
2. *For VTG units, if optional 1:7 protection is used, first unit installed in drop group must be the protection unit (VTG-P). Each additional unit must be equipped in sequence (1-7) with no gaps.*



A7897

Figure 1. VTG101 Plug-in Locations

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 4	109



**[1] DANGER: Exercise caution when handling unterminated fibers. Invisible laser radiation may be present at the fiber ends. Avoid direct exposure to beam.**

[2] See Figure 1, Page 3. Determine which Line Group (LG1 or LG2) is being looped back and if both Side A (HIF-A) and Side B (HIF-B) are equipped

[3] See NOTES 1 and 2. Also see Figure 2, Page 4. Obtain a fiber jumper for each HIF plug-in to be looped back. Verify that the jumpers have the proper type connectors for HIF plug-ins installed

[4] Remove lint caps from the optical connectors on the HIF plug-ins and the fiber jumpers

[5] Clean fiber connectors (DLP-012)

AND

Page 2

**NOTES: 1.** *The HIF101 and HIF501 plug-ins use FC/PC-type connectors which are threaded type connectors. The HIF102 AND HIF502 plug-ins use SC/PC-type connectors which are push-pull type connectors.*

**2.** *Optical attenuators are not required for looping the HIF10X plug-ins. Optical attenuators (5 dB to 15 dB) are required for HIF50X plug-ins.*

[6] **WARNING:** Do not bend fibers at less than 1-1/2 inches bend radius.

[7] What types of HIFs are used. See Figure 2, Page 4

HIF102/502

[8] Gently push the fiber jumper plug into the IN connector until it locks into place

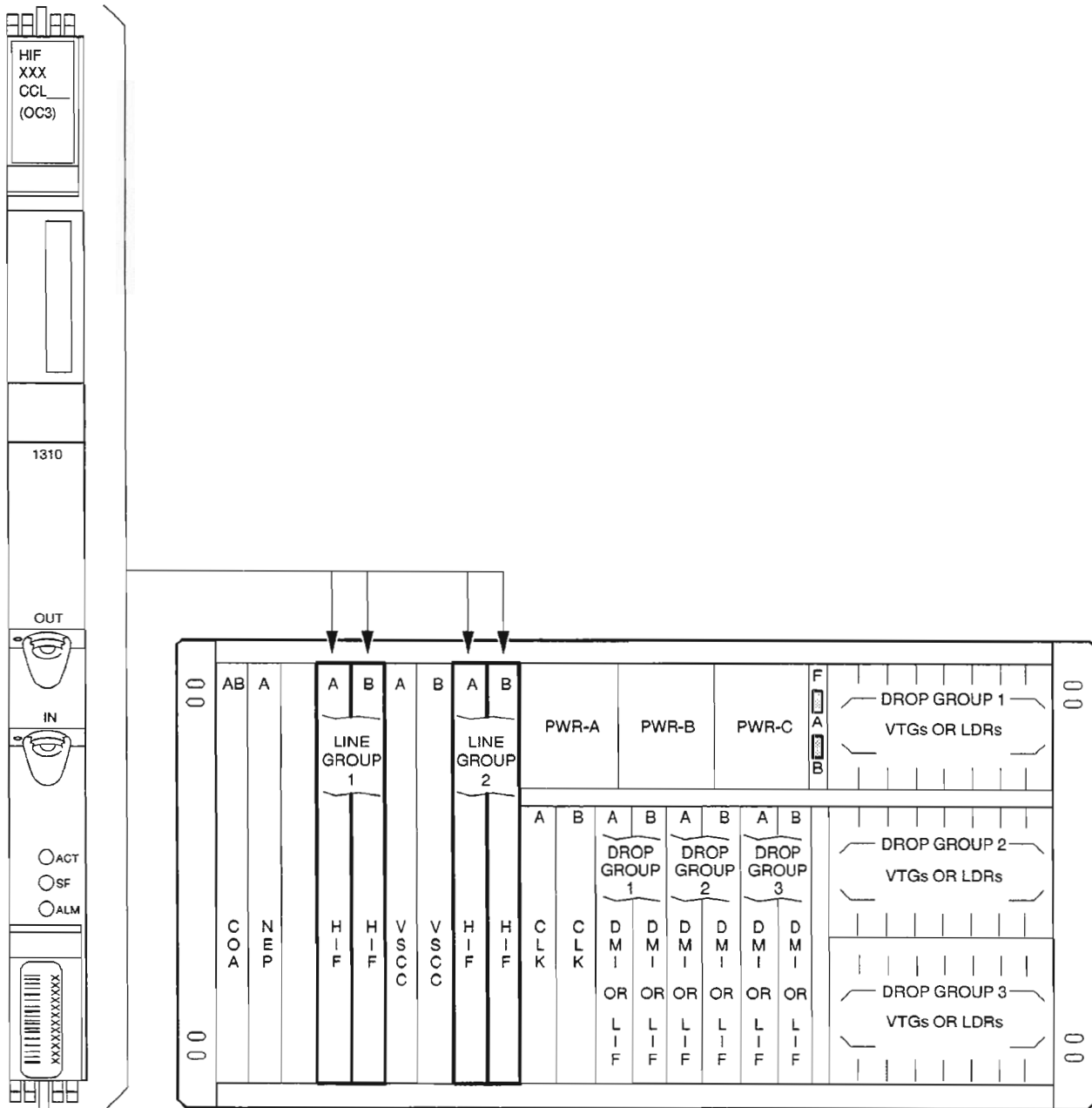
HIF101/501

[9] Align recessed guide on FC/PC fiber jumper plug with raised guide on connector (Figure 2) and gently screw the plug into the IN connector until it is snug

[10] Connect other end of jumper to the OUT connector of the same HIF plug-in

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP 110
PAGE 2 of 4	

LOOP OC-3 HIGH SPEED PORTS ON HIFXXX PLUG-IN UNITS USING FIBER OPTIC JUMPERS



A7857

Figure 1. HIFXXX (OC-3) Locations

LOOP OC-3 HIGH SPEED PORTS ON HIFXXX PLUG-IN UNITS  
USING FIBER OPTIC JUMPERS

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 3 of 4	110

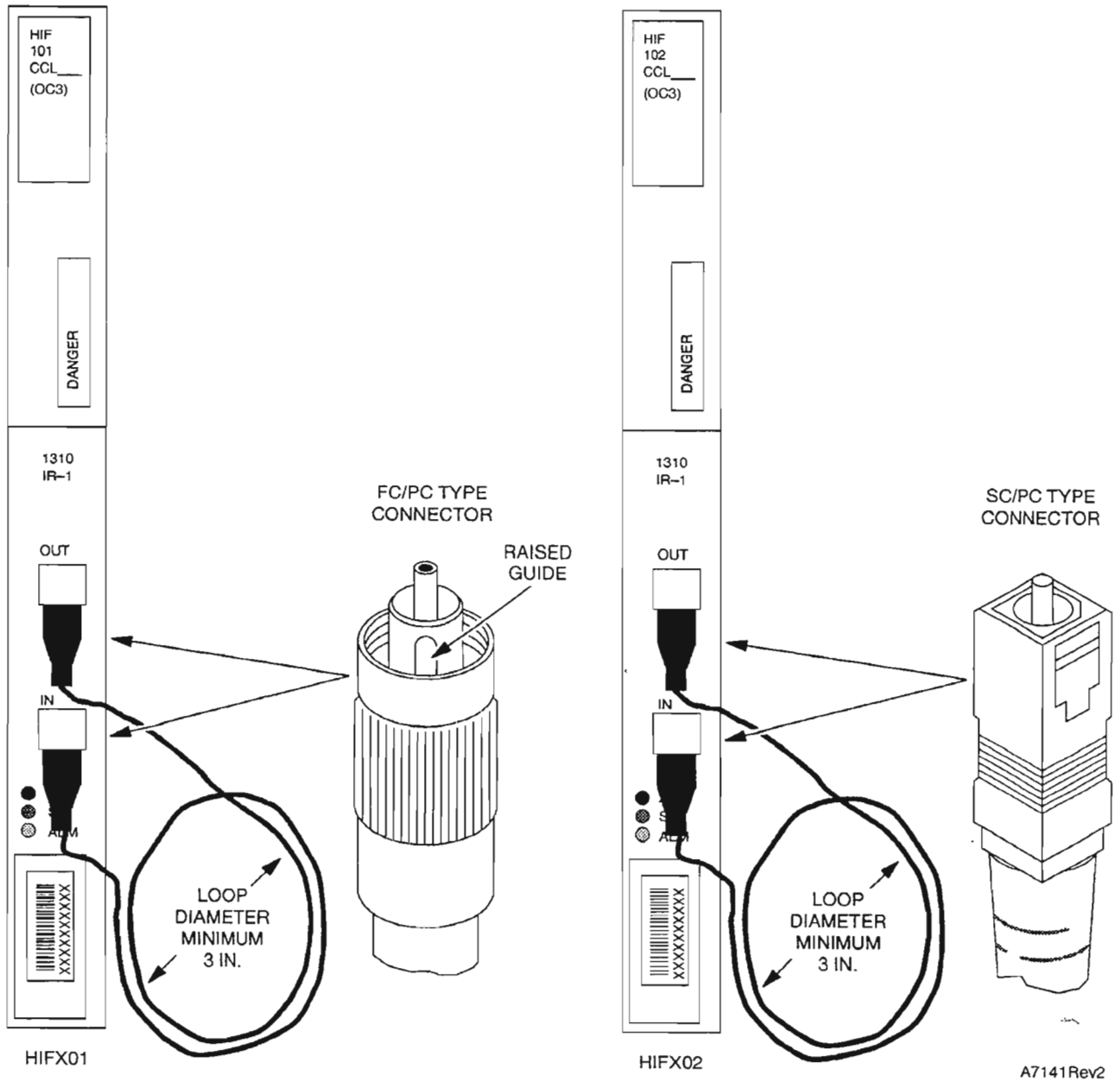


Figure 2. Optical Connector Types Used on the HIFXXX Plug-ins

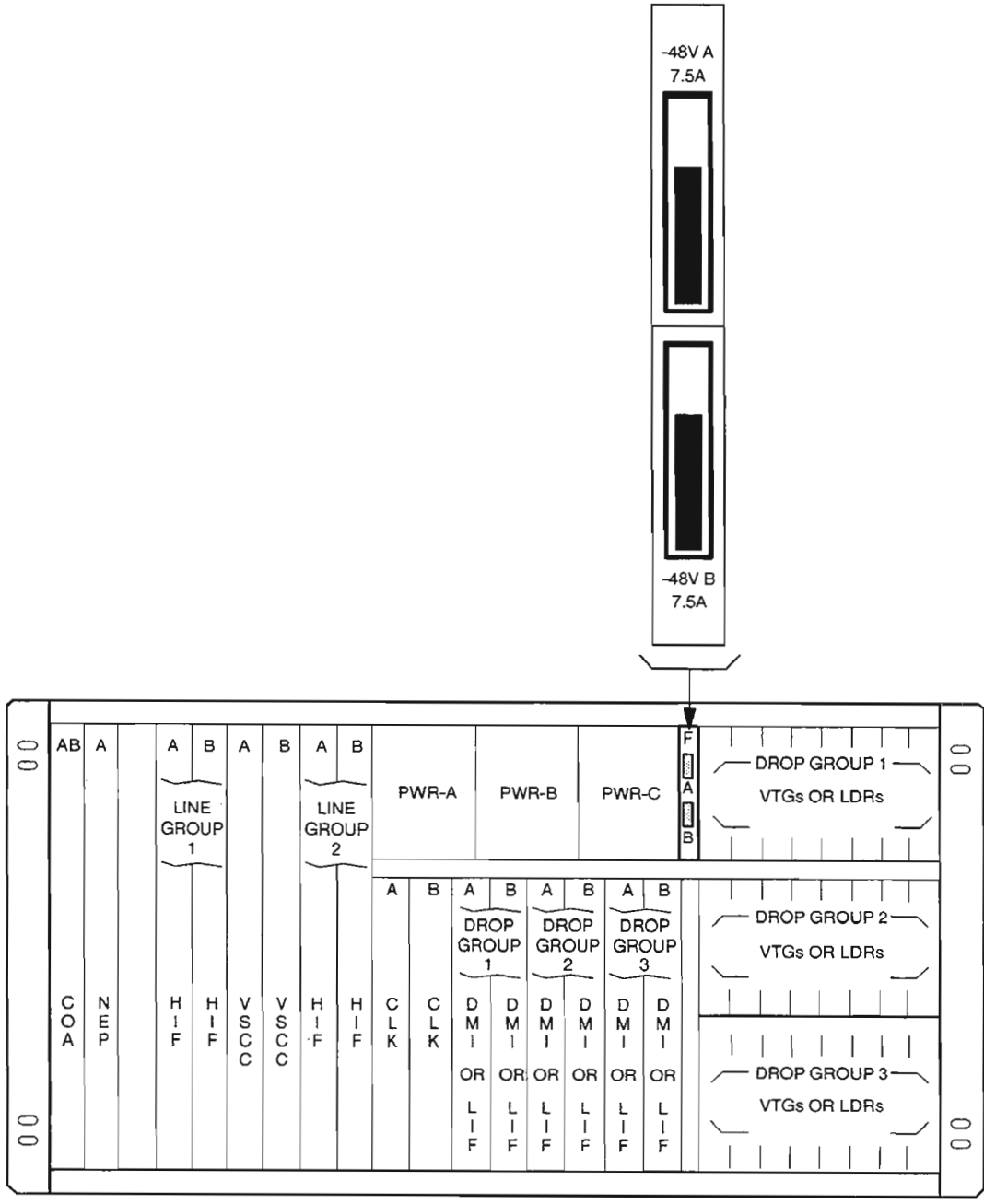
ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 4 of 4	110

LOOP OC-3 HIGH SPEED PORTS ON HIFXXX PLUG-IN UNITS  
USING FIBER OPTIC JUMPERS

[1] **WARNING:** For continued protection against risk of fire, replace the two shelf fuses (-48V A and -48V B) only with the same type and ratings of fuses.

- [2] Locate the two GMT-type, 7.5A fuses (black/white, Part No. 1AB-01441-0009) supplied in the miscellaneous accessories plastic bag
- [3] See Figure 1, Page 2, for the SP101 shelf or Figure 2, Page 3, for the ADM150 shelf. Locate the fuse assembly on the shelf
- [4] Insert a fuse into the fuse receptacles labeled -48V A 7.5A and -48V B 7.5A

AND

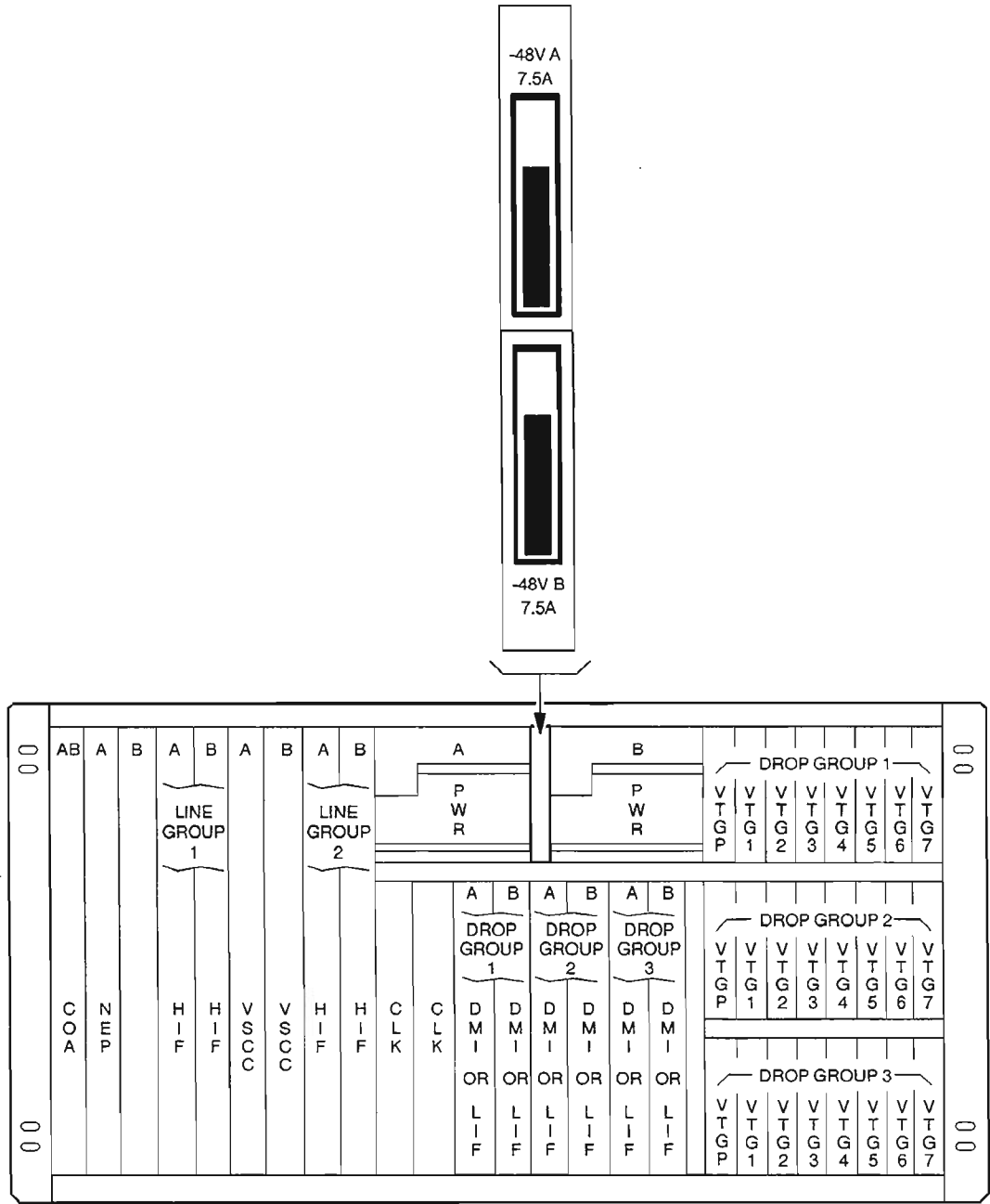


A7854

Figure 1. SP101 Shelf Fuse Assembly Location

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 3	111

INSTALL SHELF FUSES



A7142Rev1

Figure 2. ADM150 Shelf Fuse Assembly Location





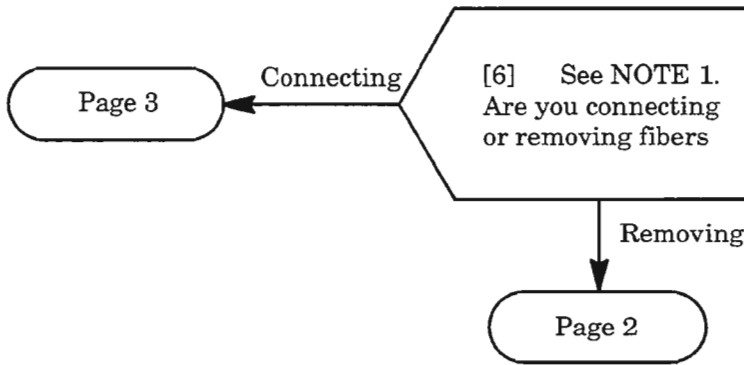
**[1] DANGER:** Exercise caution when handling unterminated fibers. If far-end equipment is active, invisible laser radiation will be present at the fiber ends. Avoid direct exposure to beam.

**[2] WARNING:** This equipment contains static-sensitive devices. See DLP-002 for special handling instructions.

**[3] WARNING:** Do not twist or cross one fiber over another.

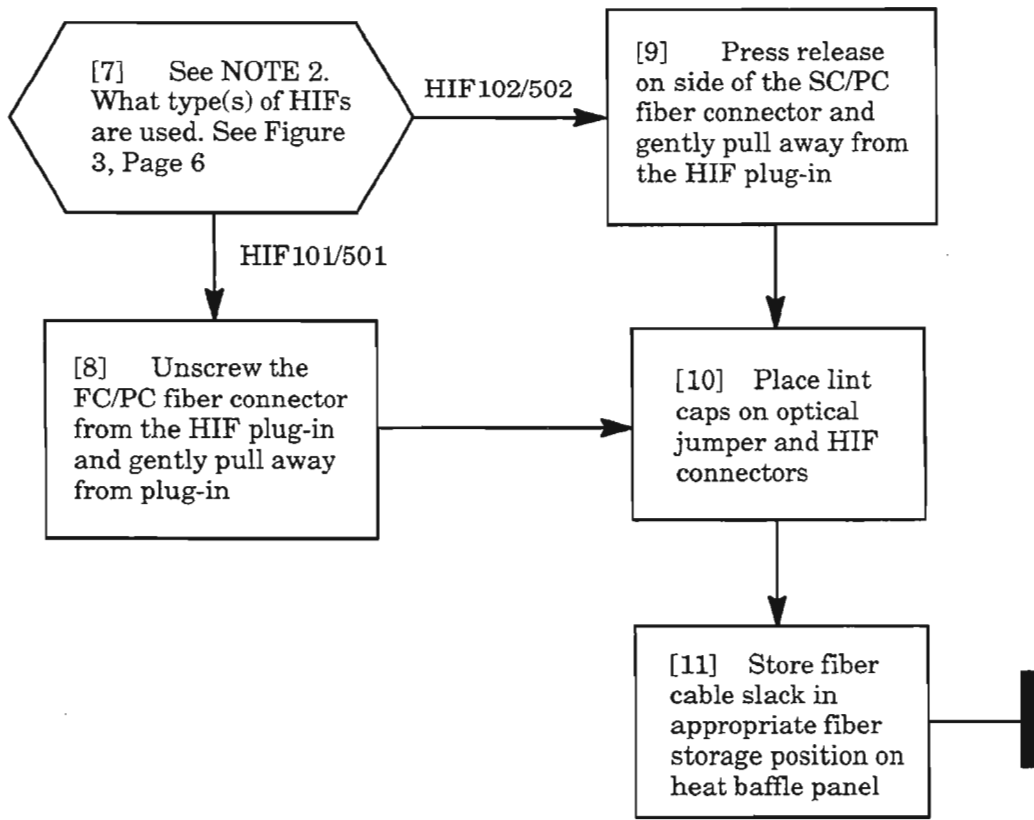
**[4] WARNING:** Do not bend or dress fibers at less than 1-1/2 inches bend radius.

**[5] WARNING:** Do not clamp or tie fibers in a tight bunch.



**NOTE: 1.** This procedure assumes that the fiber jumpers are routed to the 1603/12 SM shelf with the cable slack stored on the heat baffle assembly located beneath the shelf (see Figures 1 and 2, Pages 4 and 5). The heat baffle has five fiber storage loop positions to help hold the cables and maintain an orderly ring shape. Each position has three cable clips that are twist-on, twist-off style. Each position holds up to four cables positioned under the plug-in group served. Because of the plug-in placement, the two left-hand storage positions are used for the Line Group cables, and the three right-hand positions are used for the Drop Group positions (future applications).

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 1 of 6	112



**NOTE: 2.** *The HIF101 and HIF501 plug-ins use FC/PC type fiber connectors which are threaded-type connectors. The HIF102 and HIF502 plug-ins use SC/PC type connectors which are push-pull type connectors.*

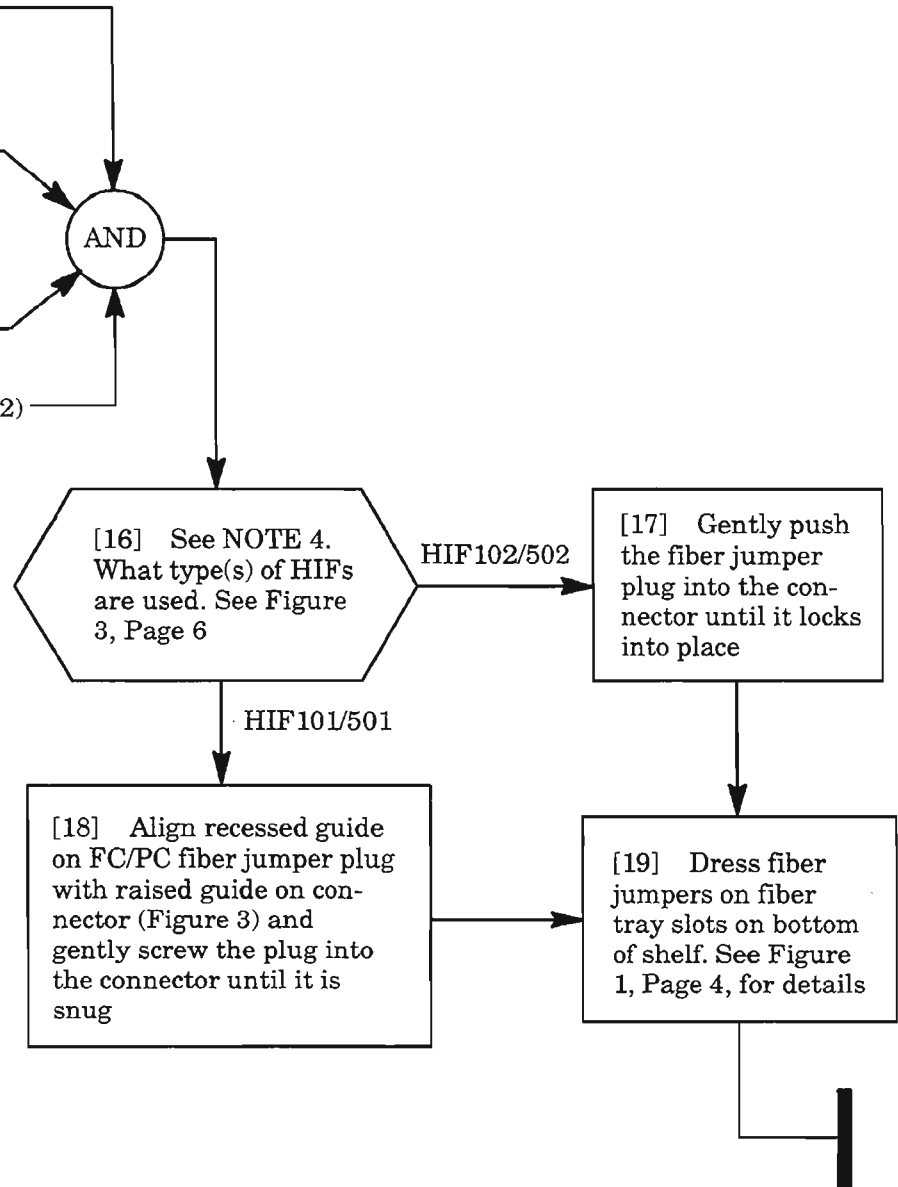
ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 6	112

[12] Carefully remove enough fiber cable from the cable clips on the baffle to reach the HIF fiber connectors

[13] Locate label on fiber cables to identify the IN and OUT fiber jumpers

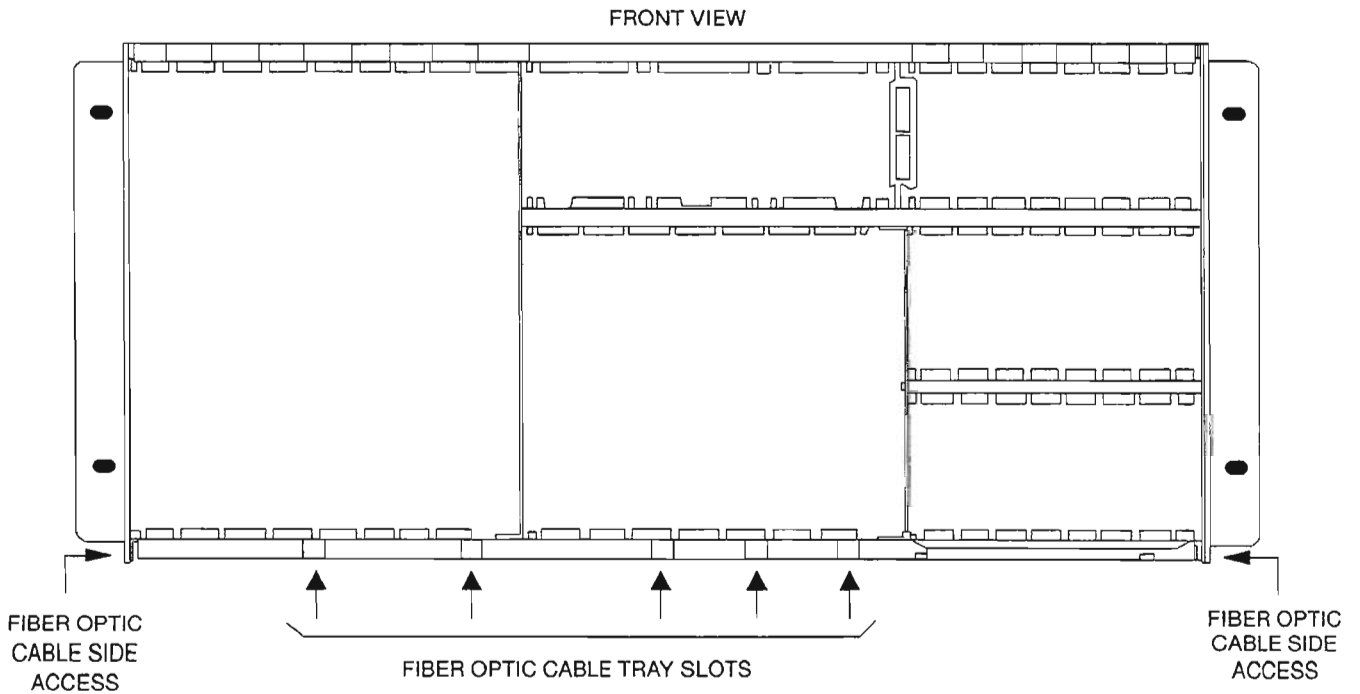
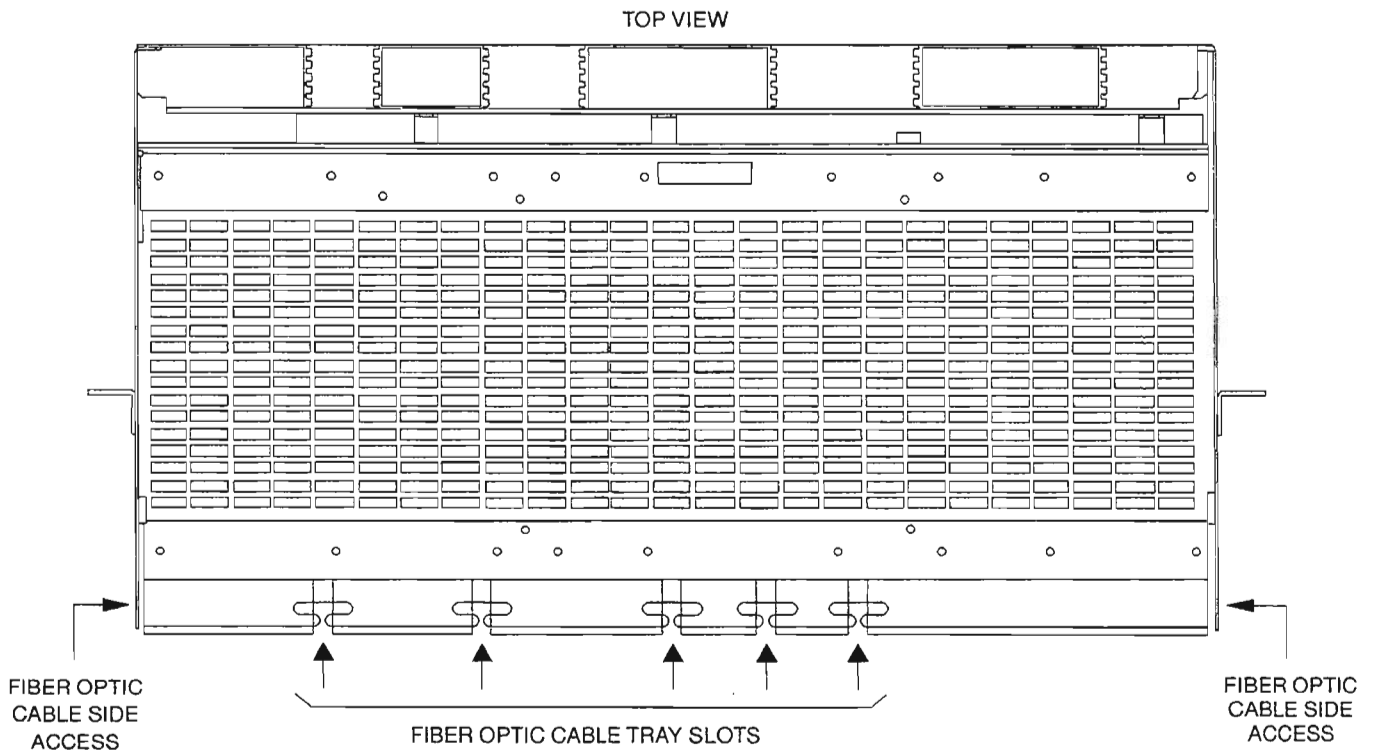
[14] See NOTE 3. Remove lint caps from the optical connectors on the HIF plug-ins and the fiber jumpers

[15] Clean fiber connectors (DLP-012)



**NOTES:** 3. Do not discard lint caps. If an HIF plug-in is removed, the lint caps must be put back on when the fibers are removed.

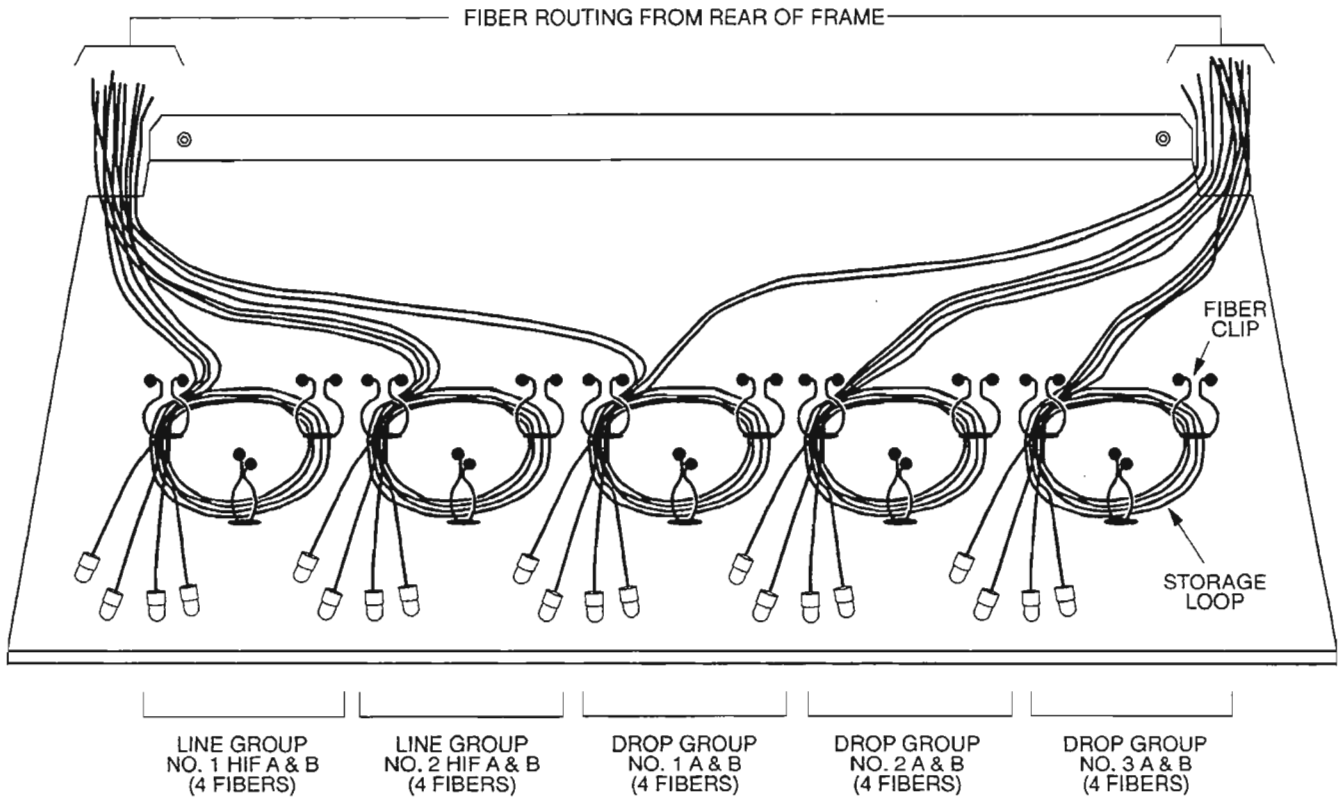
4. The HIF101 and HIF501 plug-ins use FC/PC type fiber connectors which are threaded-type connectors. The HIF102 and HIF502 plug-ins use SC/PC type connectors which are push-pull type connectors.



A7863

**Figure 1. Inserting Fiber Optic Cables in Fiber Tray Slots**

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 4 of 6	112



A7401Rev2

**Figure 2. Heat Baffle Fiber Optic Cable Management**

**CONNECT/REMOVE FIBERS FROM HIFXX PLUG-IN**

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 5 of 6	112

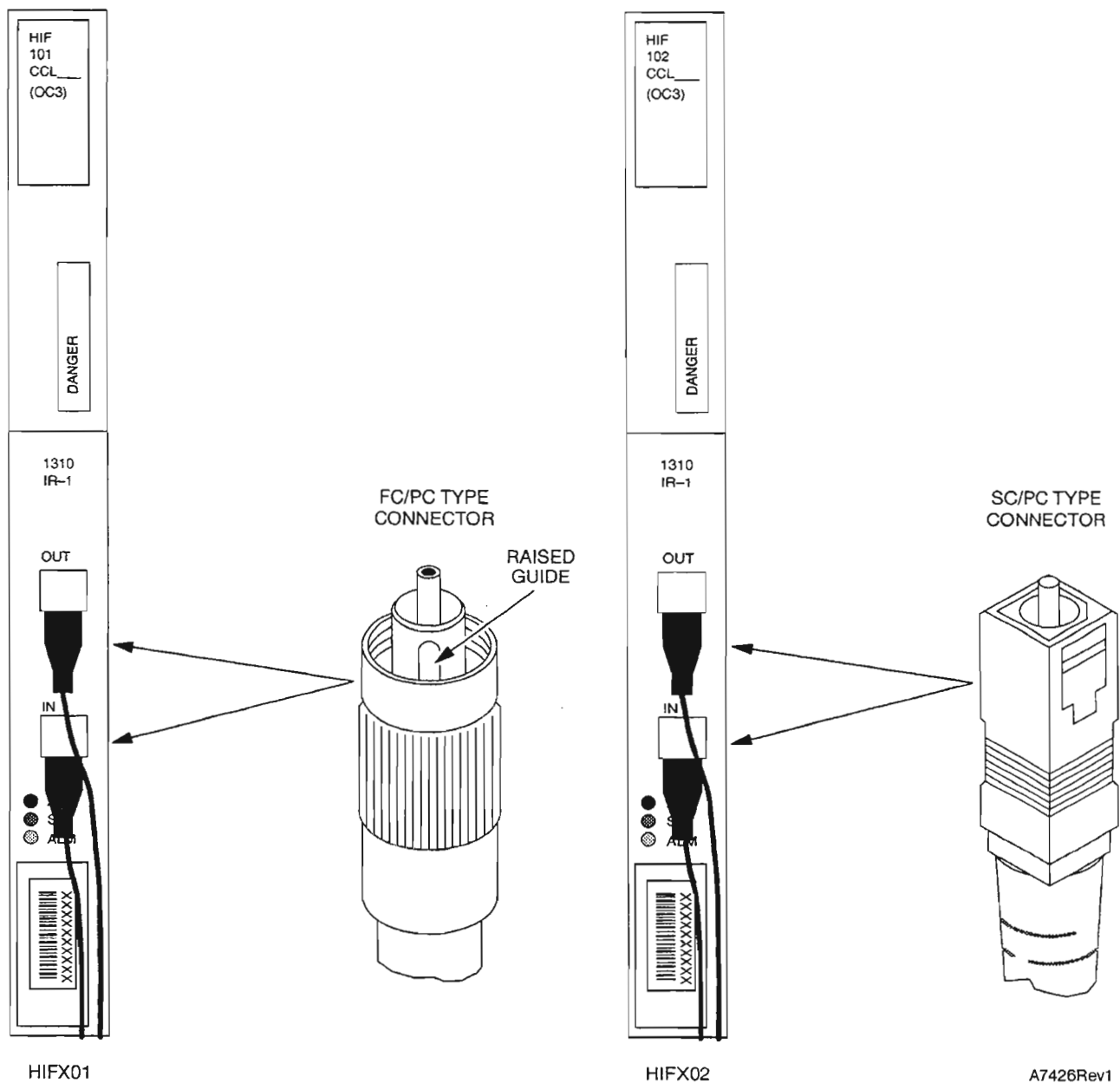
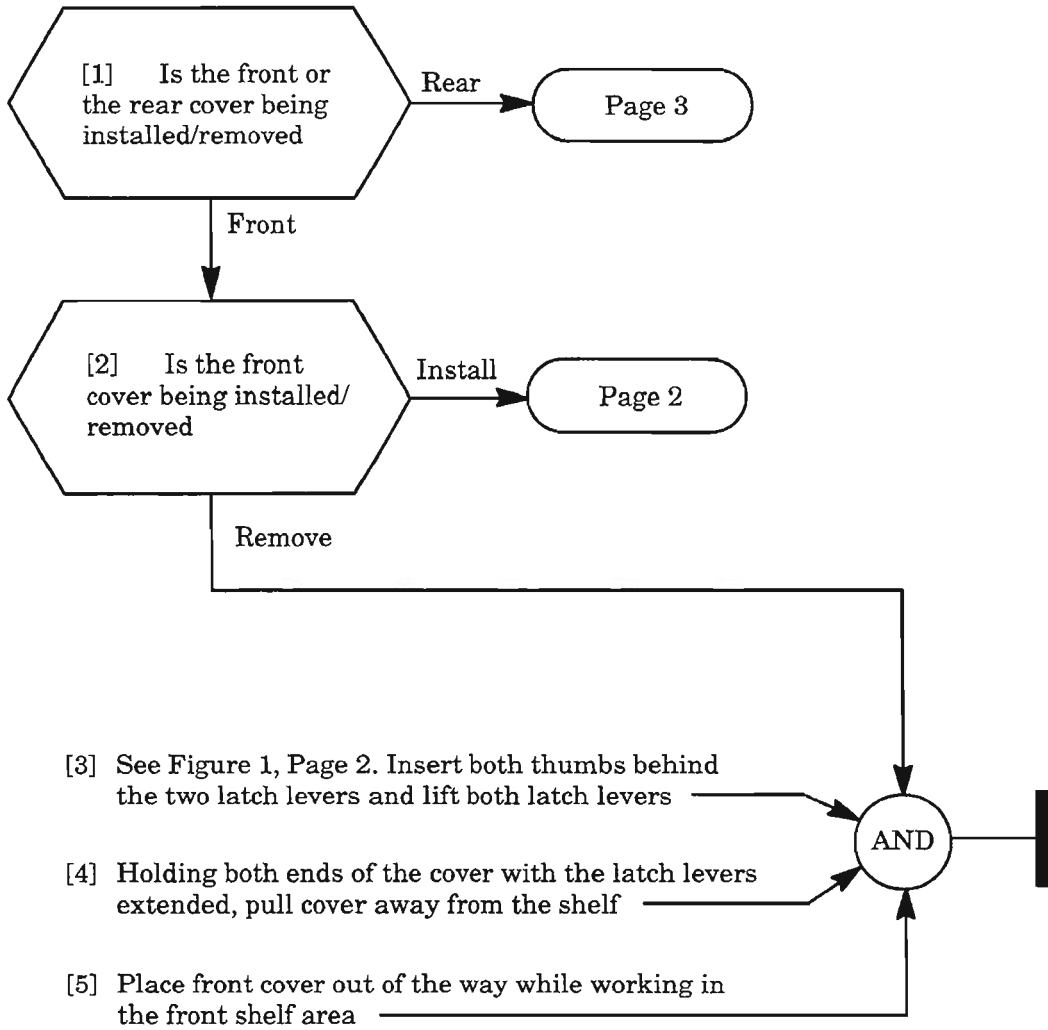


Figure 3. Optical Connector Types Used on the HIFXXX Plug-ins

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 6 of 6	112

CONNECT/REMOVE FIBERS FROM HIFXXX PLUG-IN

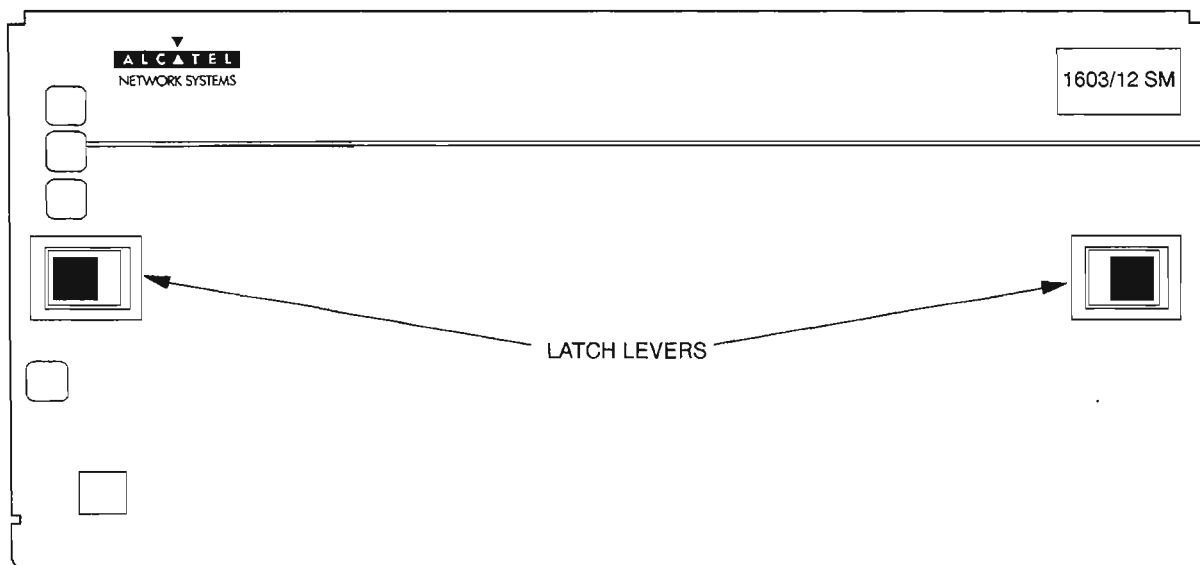
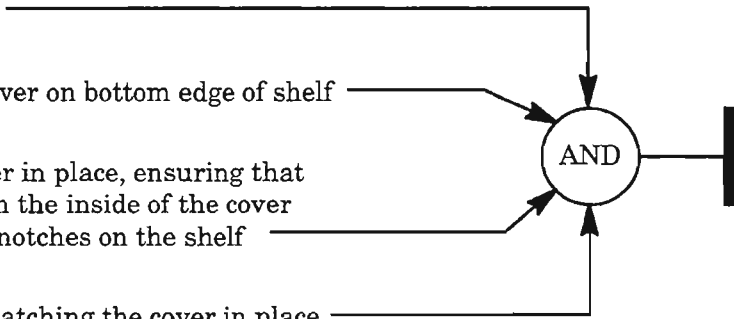


[6] See Figure 1. While holding front cover at both ends, lift latch levers

[7] Set bottom edge of cover on bottom edge of shelf

[8] Push top edge of cover in place, ensuring that the alignment pins on the inside of the cover are aligned with the notches on the shelf

[9] Release latch levers latching the cover in place



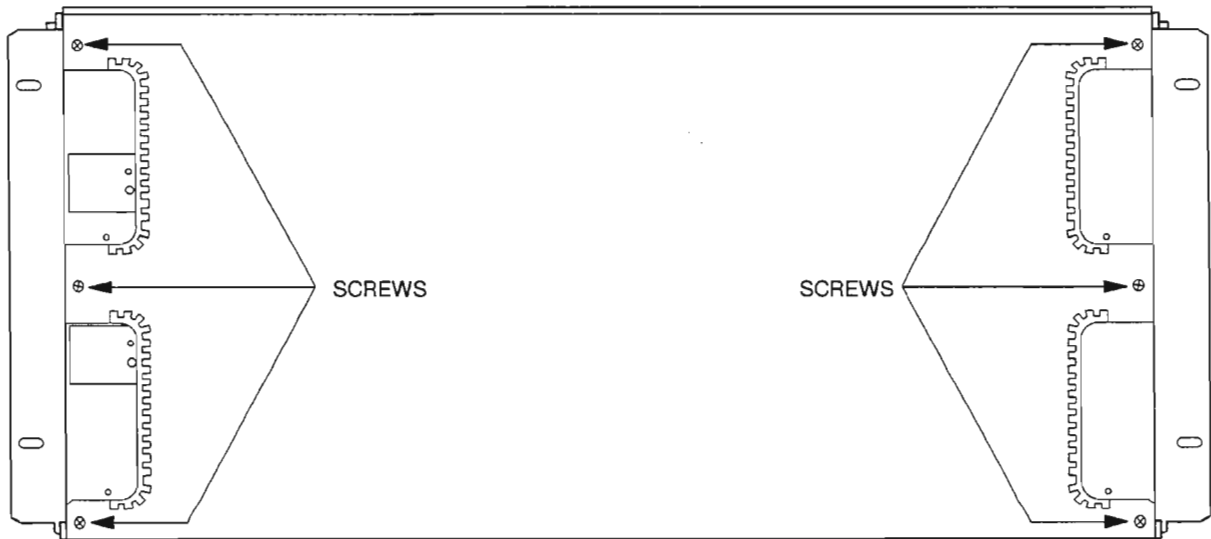
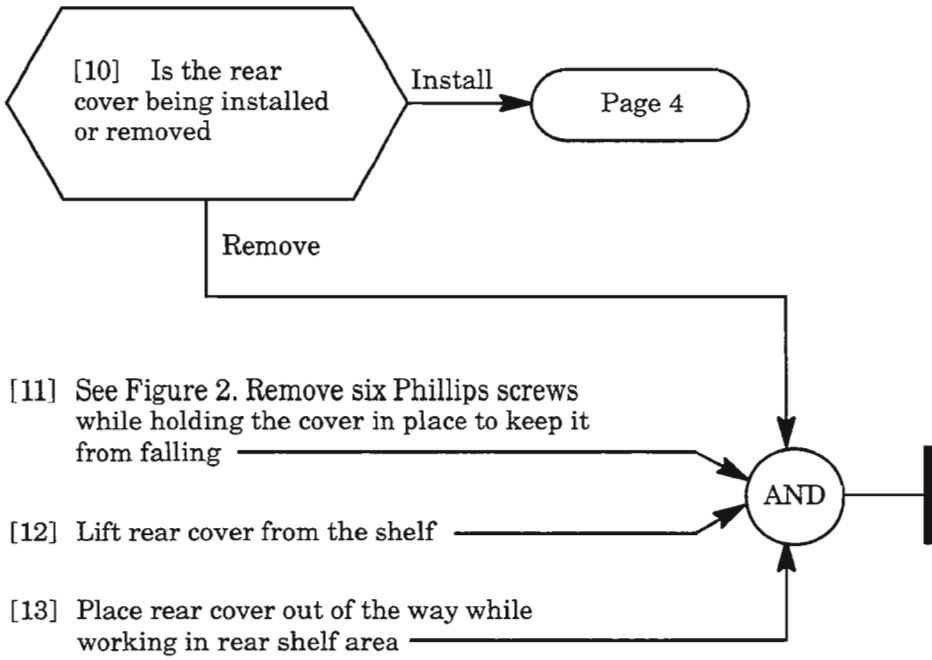
A7143Rev1

Figure 1. 1603/12 SM Front Cover

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 4	113

COVERS, INSTALL OR REMOVE





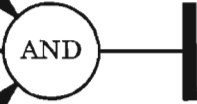
A7110

Figure 2. 1603/12 SM Back Cover Securing Screws

[14] Place the rear cover over the rear of the shelf

[15] Align the six screw holes in the cover with the six screw holes in the shelf

[16] Replace the six Phillips screws and hand-tighten



ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 4 of 4	113

**COVERS, INSTALL OR REMOVE**

- [1] Turn on the PC. After the PC completes its boot process, go to the hard drive you want to install the Download Tool onto, if not already there.

For example, if you are on the C drive, and want to install the Download Tool on the D drive, enter the following at the DOS prompt:

```
C:\> D: <cr>
```

- [2] At the DOS prompt, make a directory called DLTOOL (if it does not already exist) by entering the command:

```
C:\> MD DLTOOL <cr>
```

- [3] At the DOS prompt, change to the DLTOOL directory by entering the command:

```
C:\> CD DLTOOL <cr>
```

- [4] Install the Download Tool diskette in the 3-1/2 inch 1.44 MB floppy drive

- [5] Copy the Download Tool executable file (DL1603.EXE) in the DLTOOL directory by entering the command:

```
C:\DLTOOL> COPY A:DL1603.EXE <cr>
```

where: **A:** is the floppy drive letter (substitute the appropriate letter, as required)

AND

AND

Page 2



[7] When the Download Tool starts, the Copyright screen (Figure 1) appears. Press any key to continue

[8] The Download Tool Main Menu (Figure 2) appears

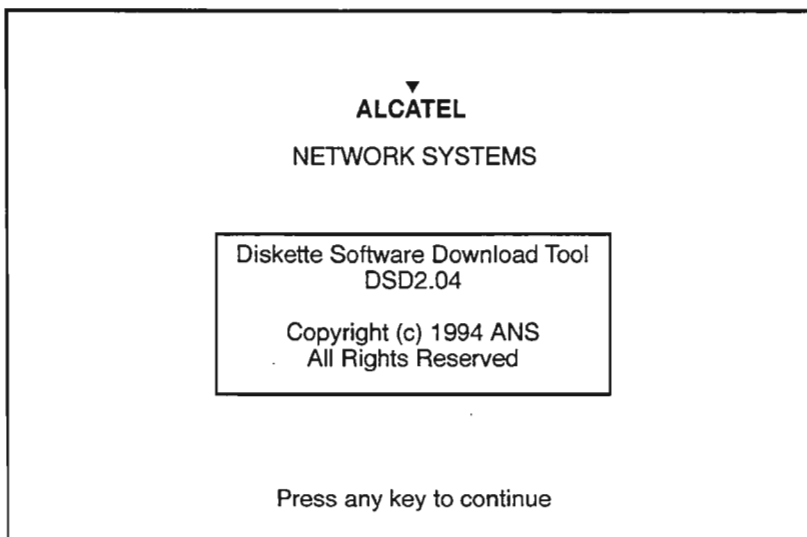
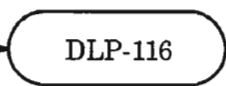


Figure 1. Download Copyright Screen

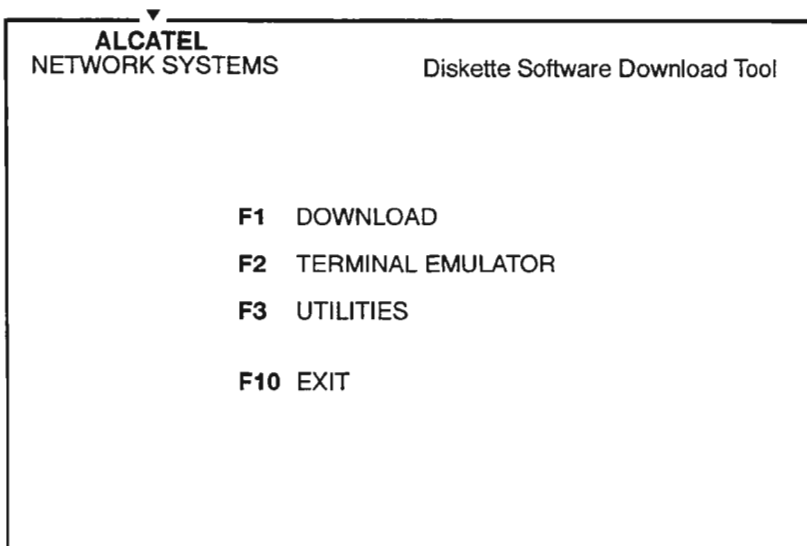


Figure 2. Download Tool Main Menu

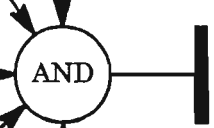


- [1] See NOTES 1 and 2.  
Turn on the PC. After the PC has completed its boot process, go to the hard drive you want to install the Program Kit on, if not already there.

For example, if you are on the C drive, and want to install the Program Kit on the D drive, enter the following at the DOS prompt:

```
C:\> D: <cr>
| | | |
| | | | carriage return
| | | | ENTER key
DOS Drive
prompt letter
```

- [2] Install the Program Kit diskette in the 3-1/2 inch 1.44 MB floppy drive (install Disk #1, if more than one disk)
- [3] Enter the following command to begin the installation:  
C:\> A:INSTALL <cr>  
where: A: is the drive letter of the floppy drive containing the Program Kit diskette (substitute the appropriate drive letter, if necessary)
- [4] If the Program Kit is on more than one diskette, install the requested diskettes, when instructed by the install program
- [5] When the installation is complete, remove the Program Kit diskette from the drive and return it to its storage sleeve

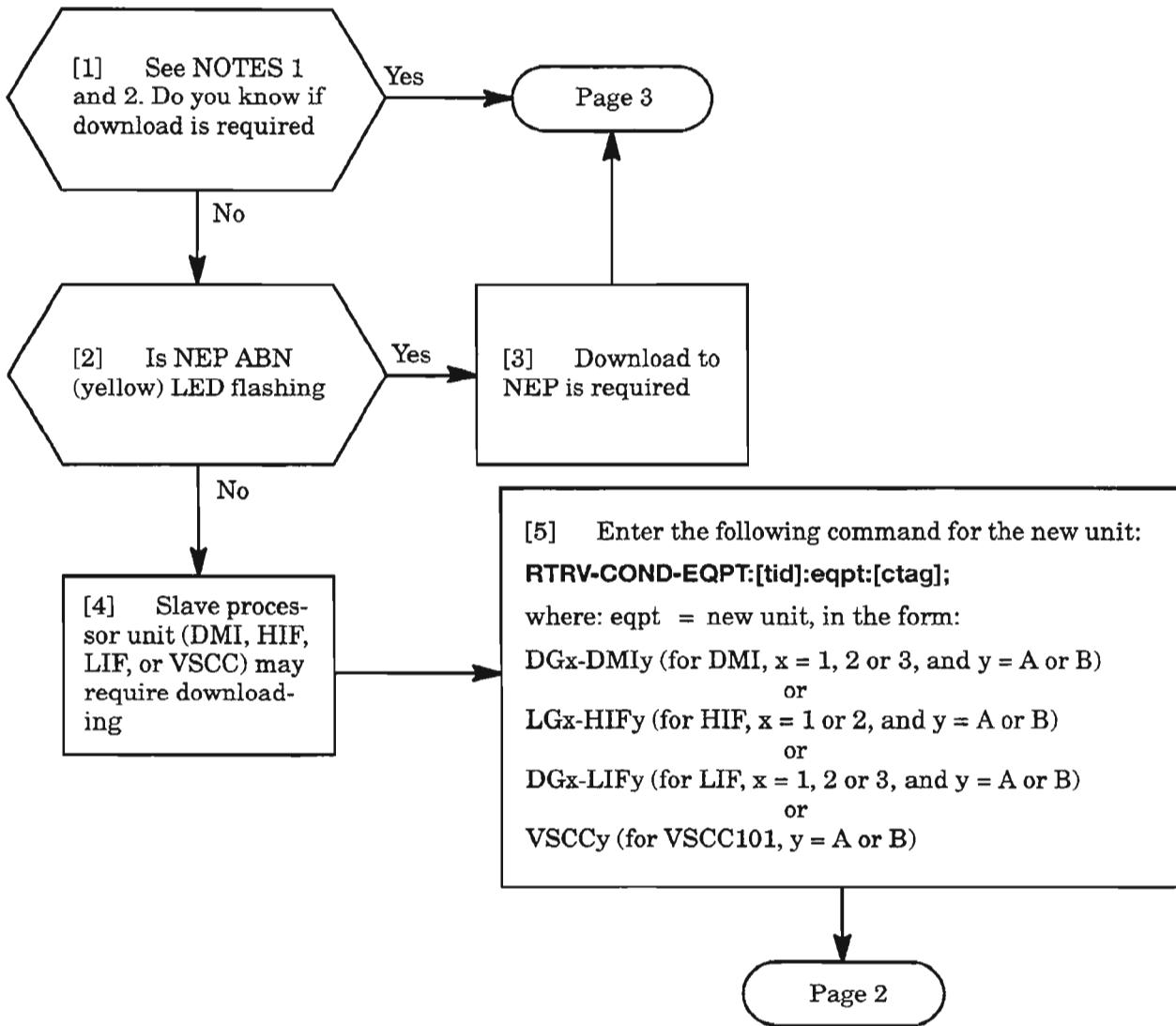


**NOTES:** 1. The install process is automatic and creates a subdirectory structure under the DLTOOL (Download Tool) directory containing the necessary image files. The DLTOOL directory is created if it does not exist.

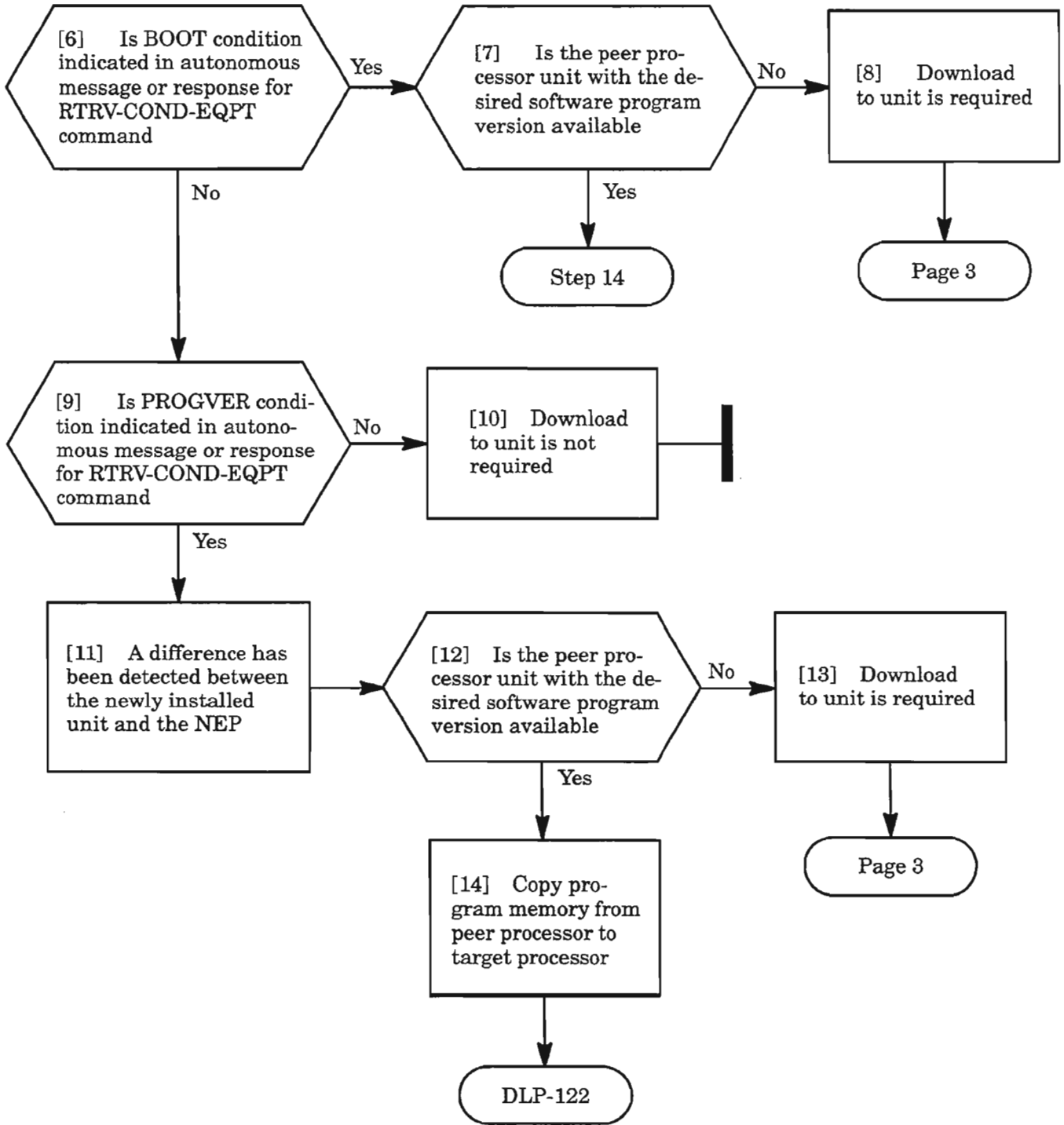
2. The Download Tool (DSD2.04) is required to download the software images in the 1603/12 SM Network Element (see DLP-116).

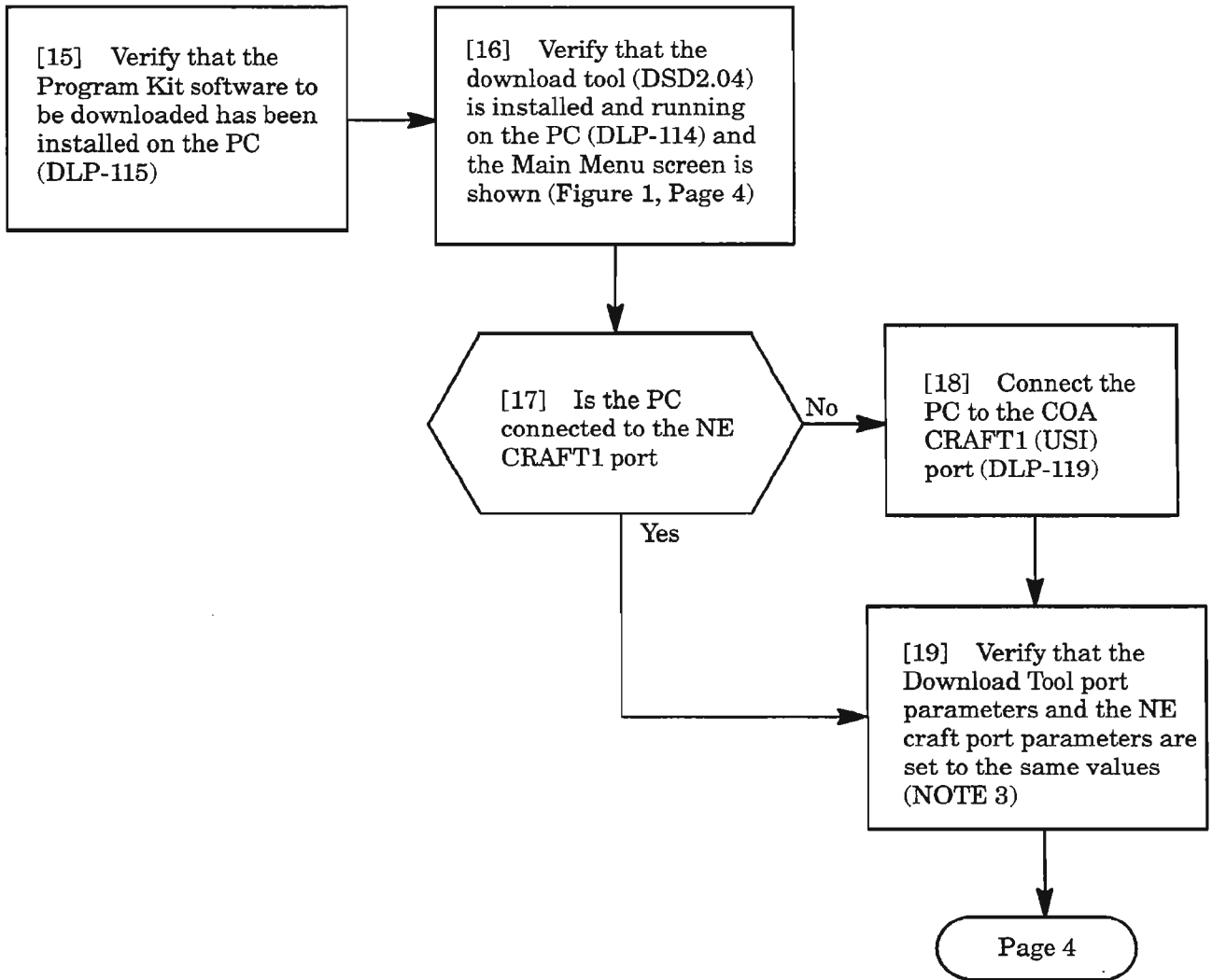






- NOTES:**
1. Typically, download is required when replacing or installing new processor controlled units (NEP, HIF, DMI, LIF, or VSCC) or upgrading software to these units. When these units are entered into service, they may or may not be running software program. If they do not have software installed, they are running bootcode. If the NEP is running bootcode, it flashes its ABN (yellow) LED indicating it needs to be downloaded. Craft TL1 communication with the system is not possible until software is downloaded to the NEP. The Download Tool, however, can detect the bootcode condition and initiate a download process to the NEP. The slave processor units (HIF, DMI, LIF, and VSCC units) require the condition of the units be retrieved (RTRV-COND-EQPT) to determine if they are running bootcode. If a unit is running bootcode, you can elect to download software to this unit; or, if its peer unit is available, the software can be copied from the peer unit (if it has software installed). This is desirable because the copy process is faster than the download process. A peer unit is the redundant unit in a duplex configuration.
  2. A PROGVER condition is reported by a slave processor unit when a difference is detected in the software program version between the slave unit and the NEP. A download or copy from the peer processor unit resolves the PROGVER condition.





**NOTE: 3.** *The default parameters for the download tool and the 1603/12 SM Network Element (NE) are: 9600 (baud rate), no parity, 8 bits word length, 1 stop bit. The download tool port parameters are changed when first executing the download tool via command line parameters (DLP-115). The 1603/12 SM NE port parameters can be retrieved using the RTRV-PORT command, and are changed using the ED-PORT TL-1 command.*

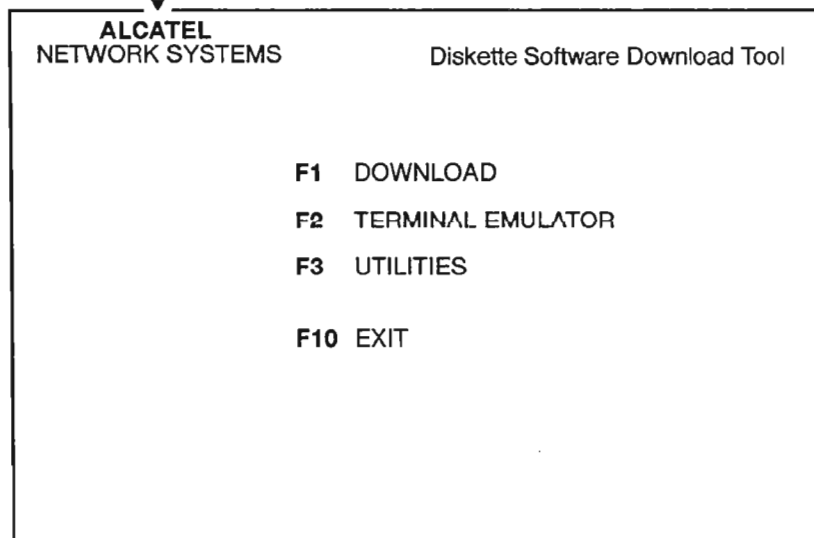
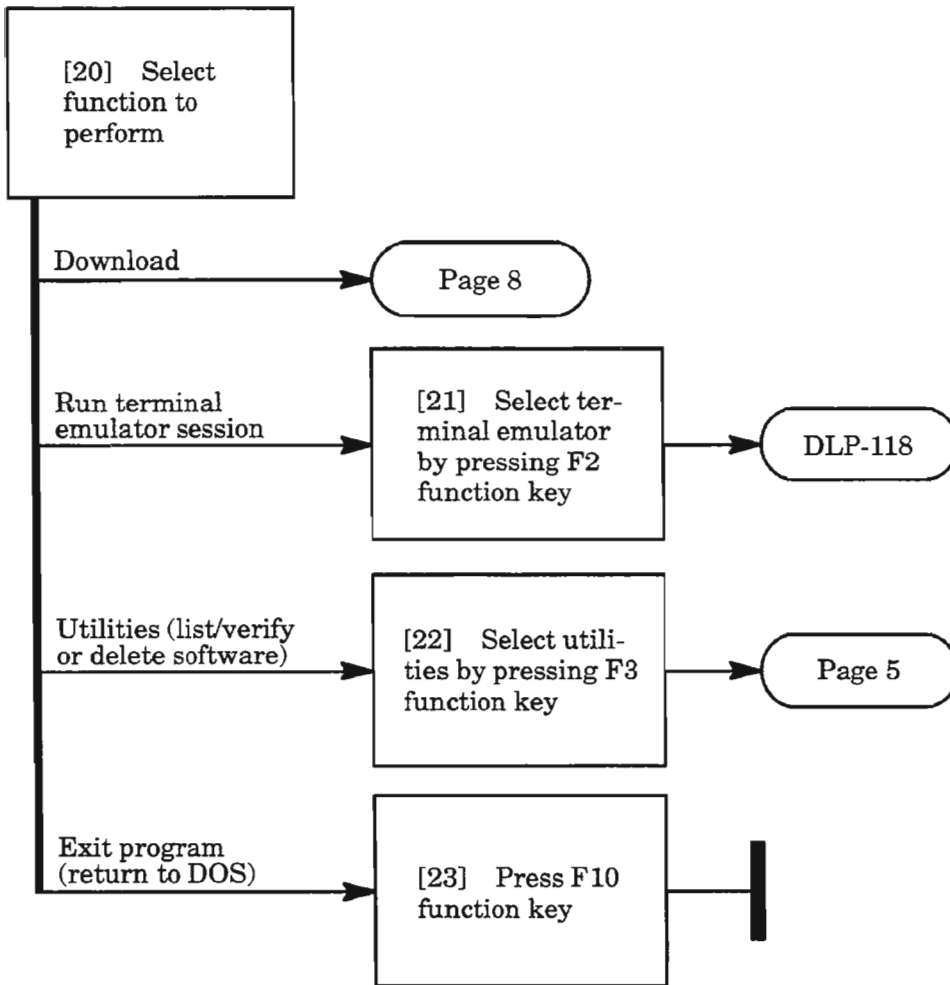


Figure 1. Download Tool Main Menu

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 4 of 16	116

DOWNLOAD SOFTWARE FROM PERSONAL COMPUTER  
TO 1603/12 SM NETWORK ELEMENT

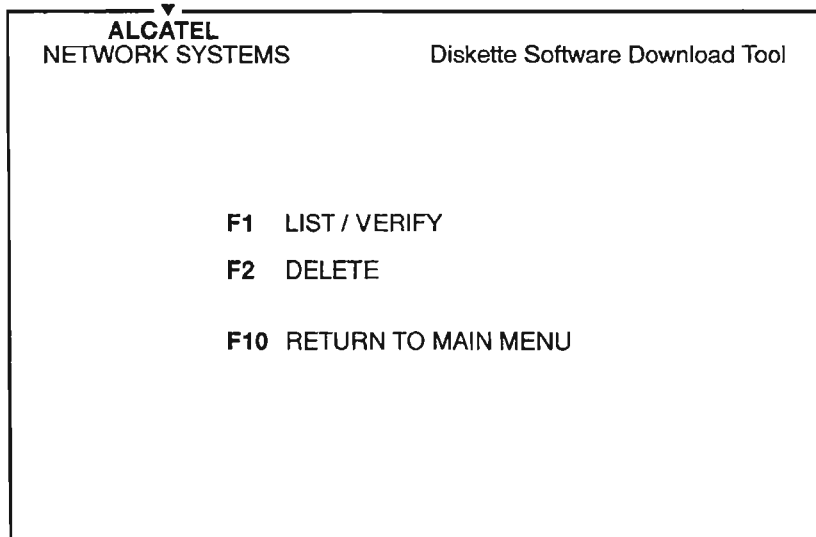
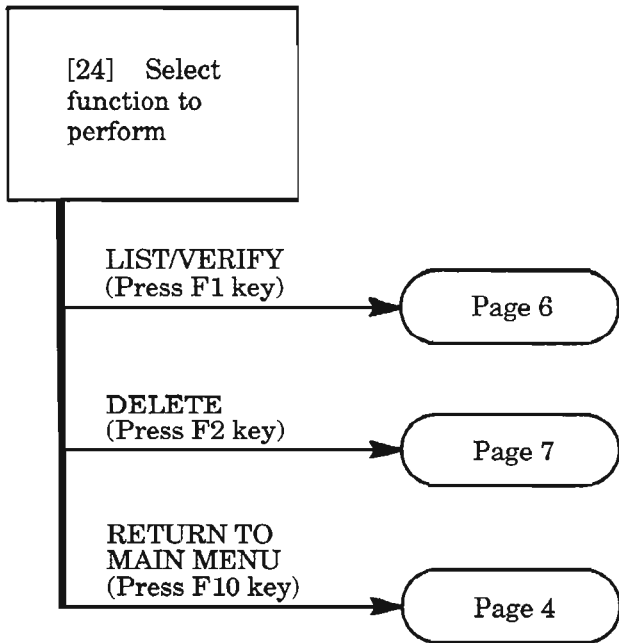


Figure 2. Utilities Menu

# LIST/VERIFY SOFTWARE IMAGE ON PC HARD DRIVE

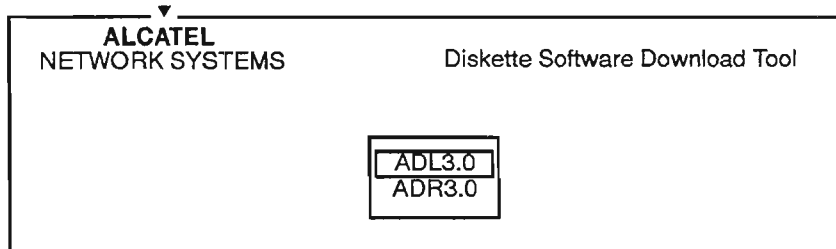
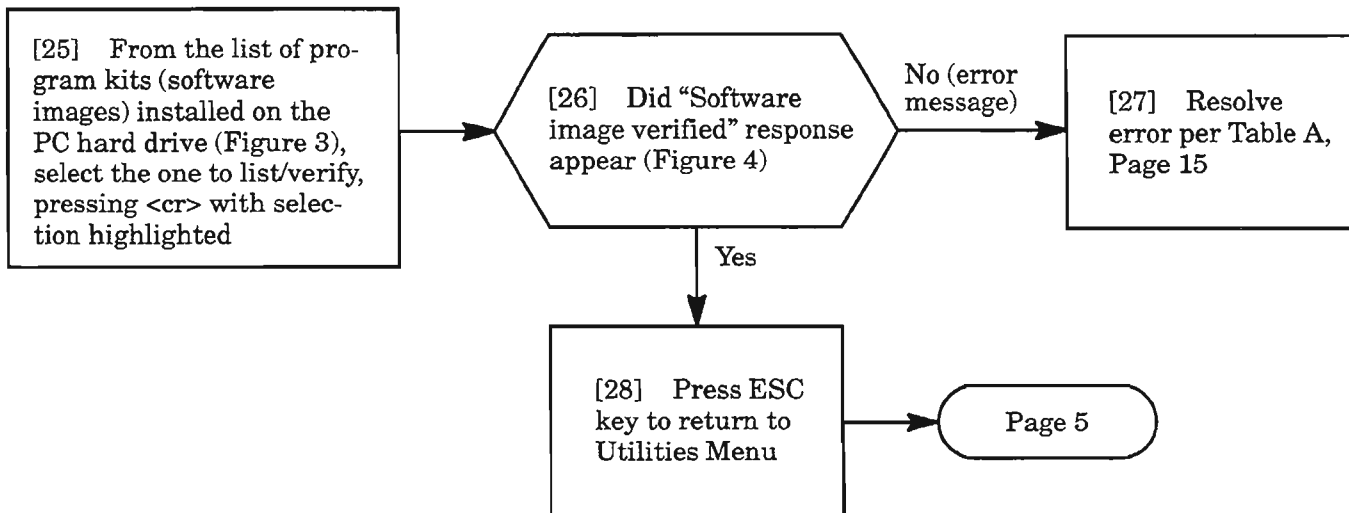


Figure 3. Example List of Software Loads on PC Hard Drive

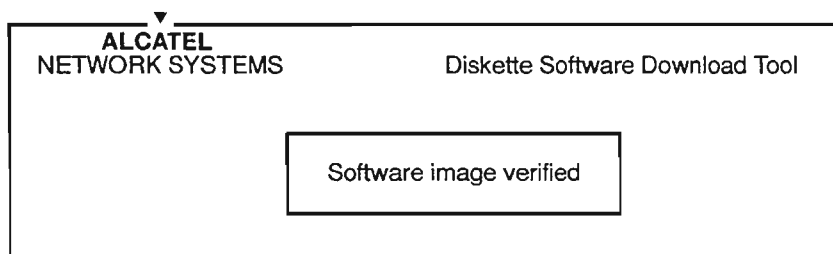


Figure 4. Message Upon Successful Verification of Software Image

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 6 of 16	116

DOWNLOAD SOFTWARE FROM PERSONAL COMPUTER TO 1603/12 SM NETWORK ELEMENT

# DELETE SOFTWARE IMAGE ON PC HARD DRIVE

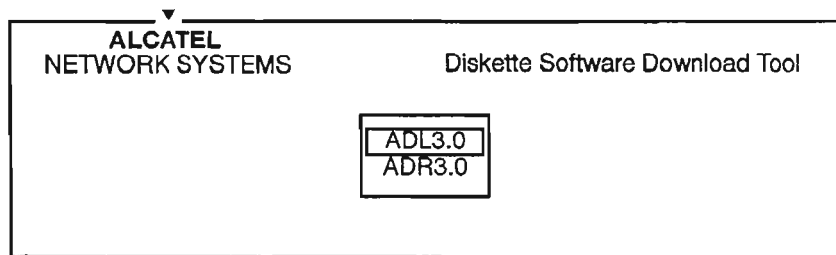
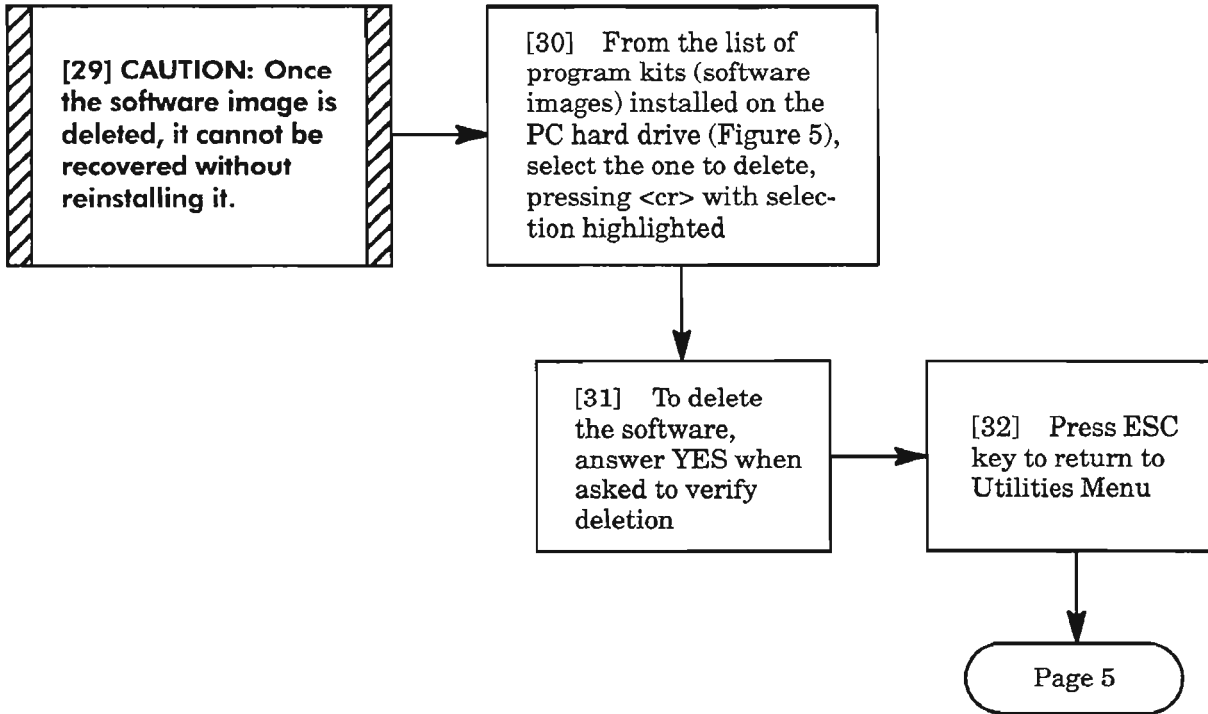


Figure 5. Example List of Software Loads on PC Hard Drive

## DOWNLOAD SOFTWARE TO NETWORK ELEMENT

[33] See NOTE 4. From the main menu, select the DOWNLOAD entry by pressing F1 key

[34] From software images list that appears (Figure 6), select the one to be downloaded by pressing <cr> key with the selection highlighted

[35] After the software image has been verified, the Download Session Menu appears (Figure 7)

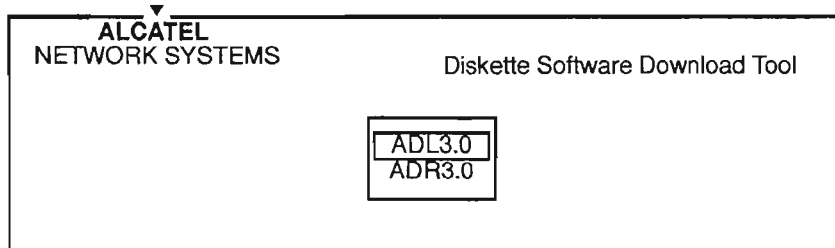
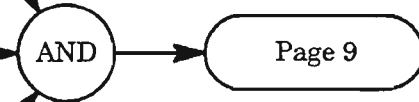


Figure 6. Example List of Software Loads on PC Hard Drive

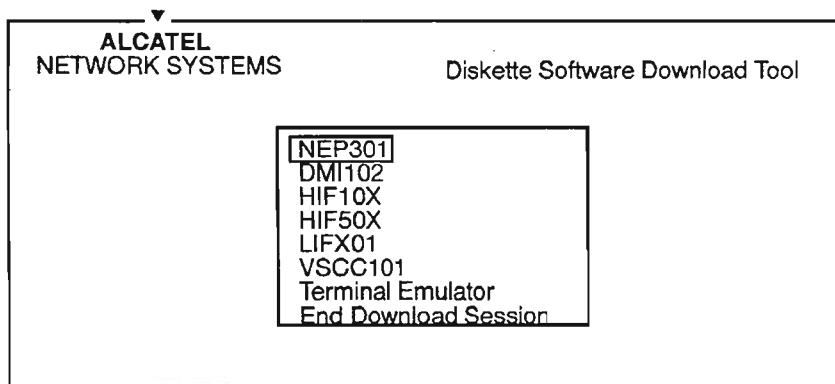
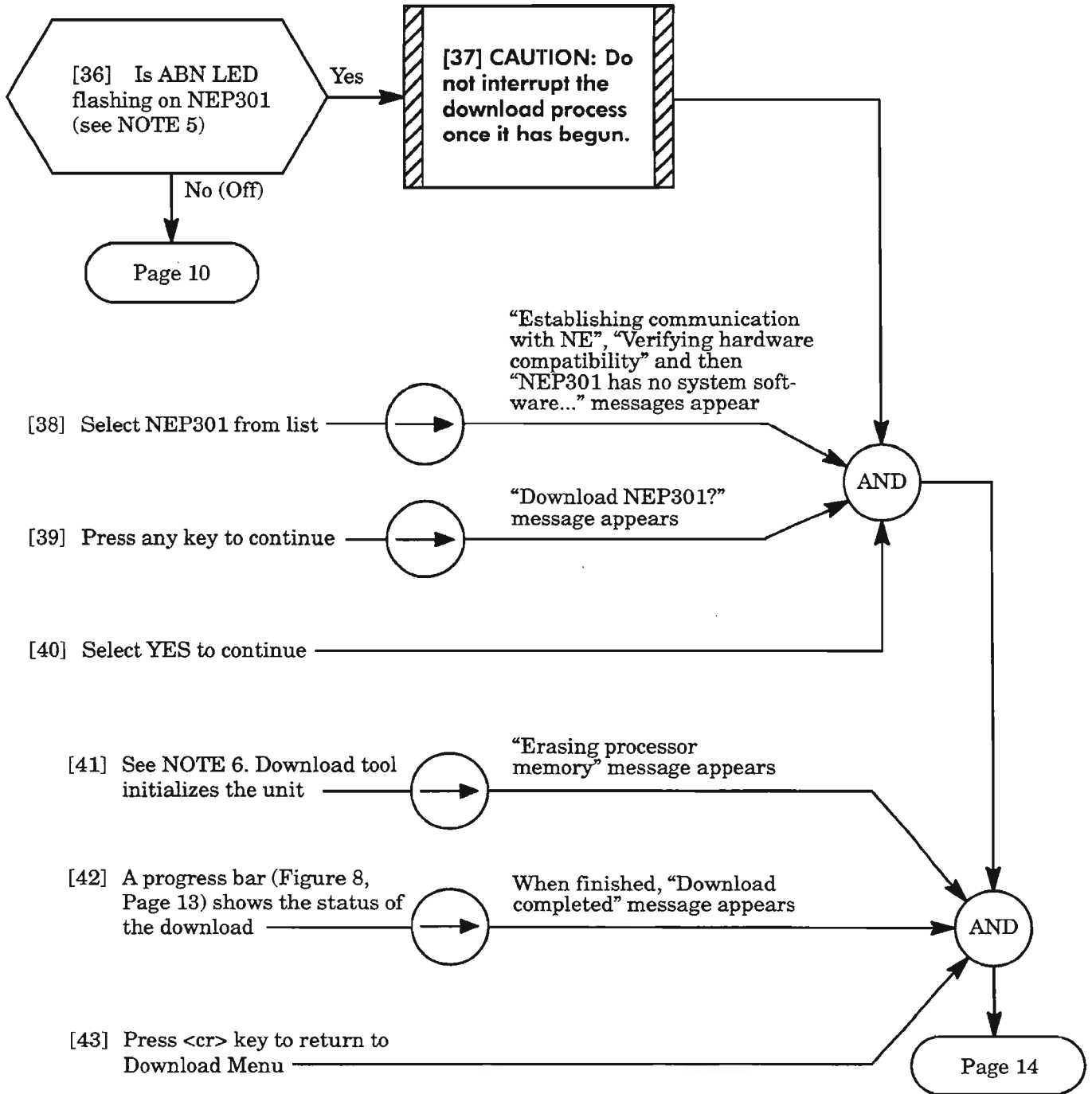


Figure 7. Download Session Menu

**NOTE: 4.** If any messages appear in a red dialog window during this procedure, refer to Table A, Page 15, for cause and corrective action.

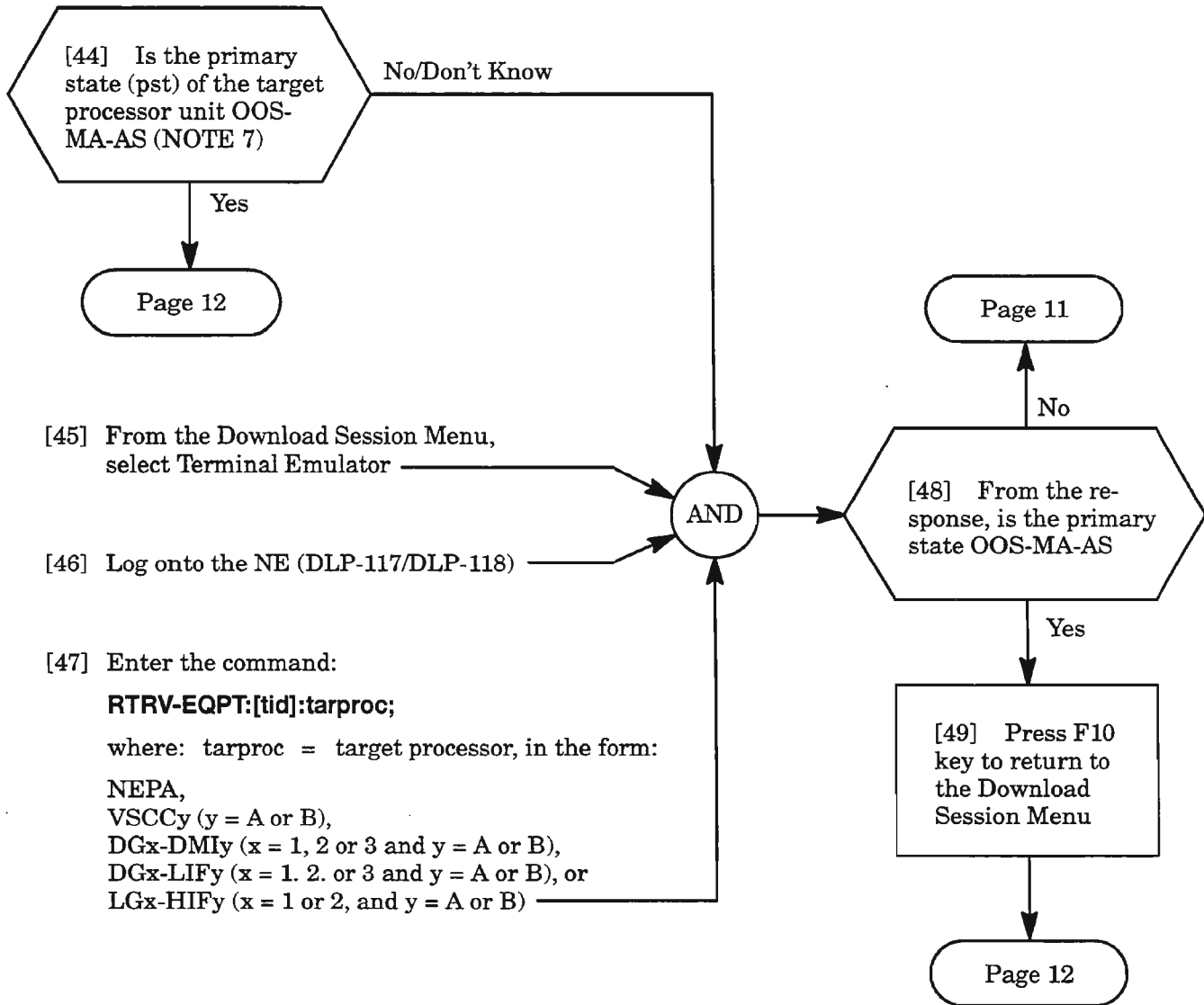
ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 8 of 16	116





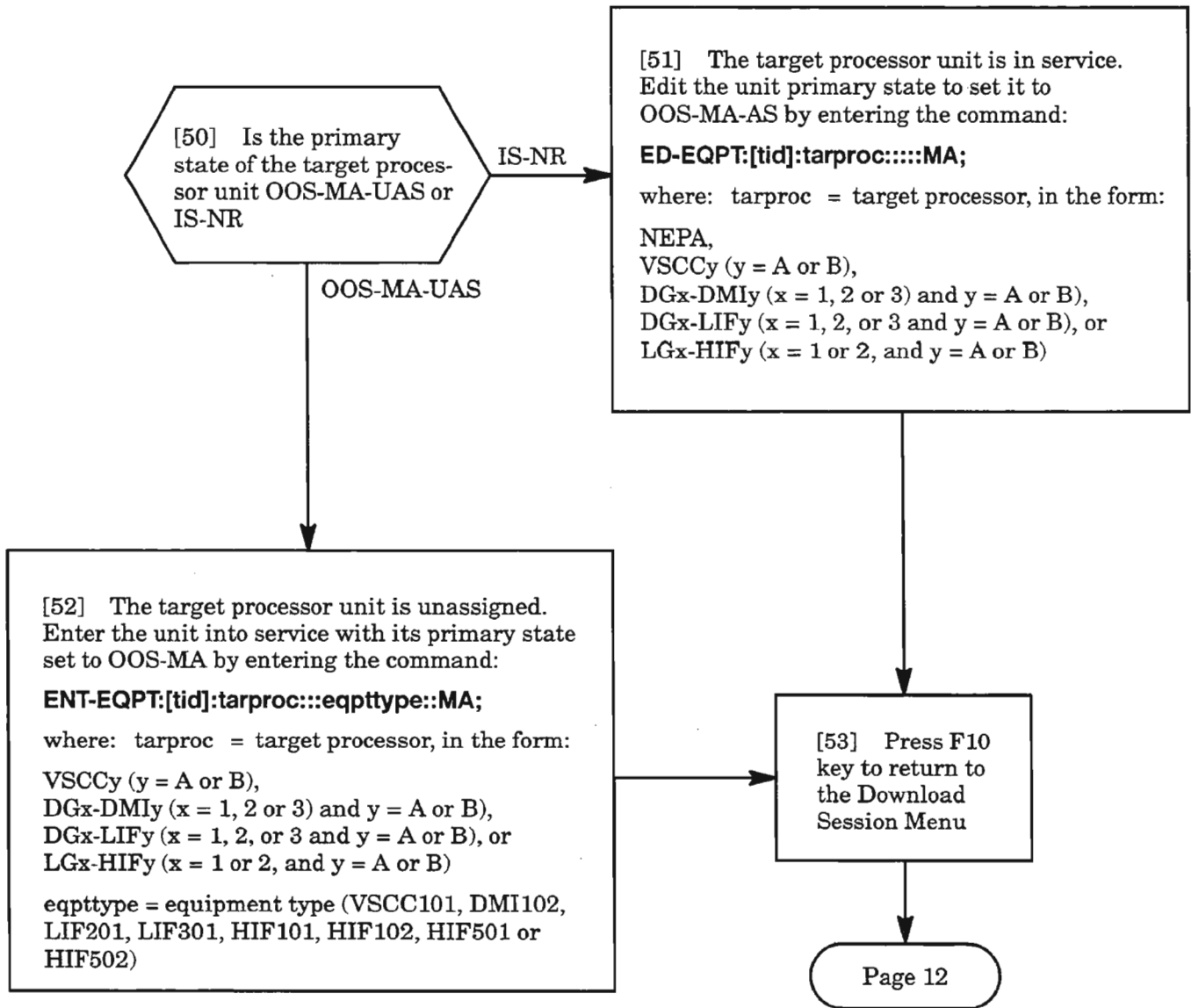
**NOTES:** 5. The yellow ABN (Abnormal) LED on the NEP301 flashes if it is running bootcode (no software installed). In this case, the NEP301 must be downloaded first.

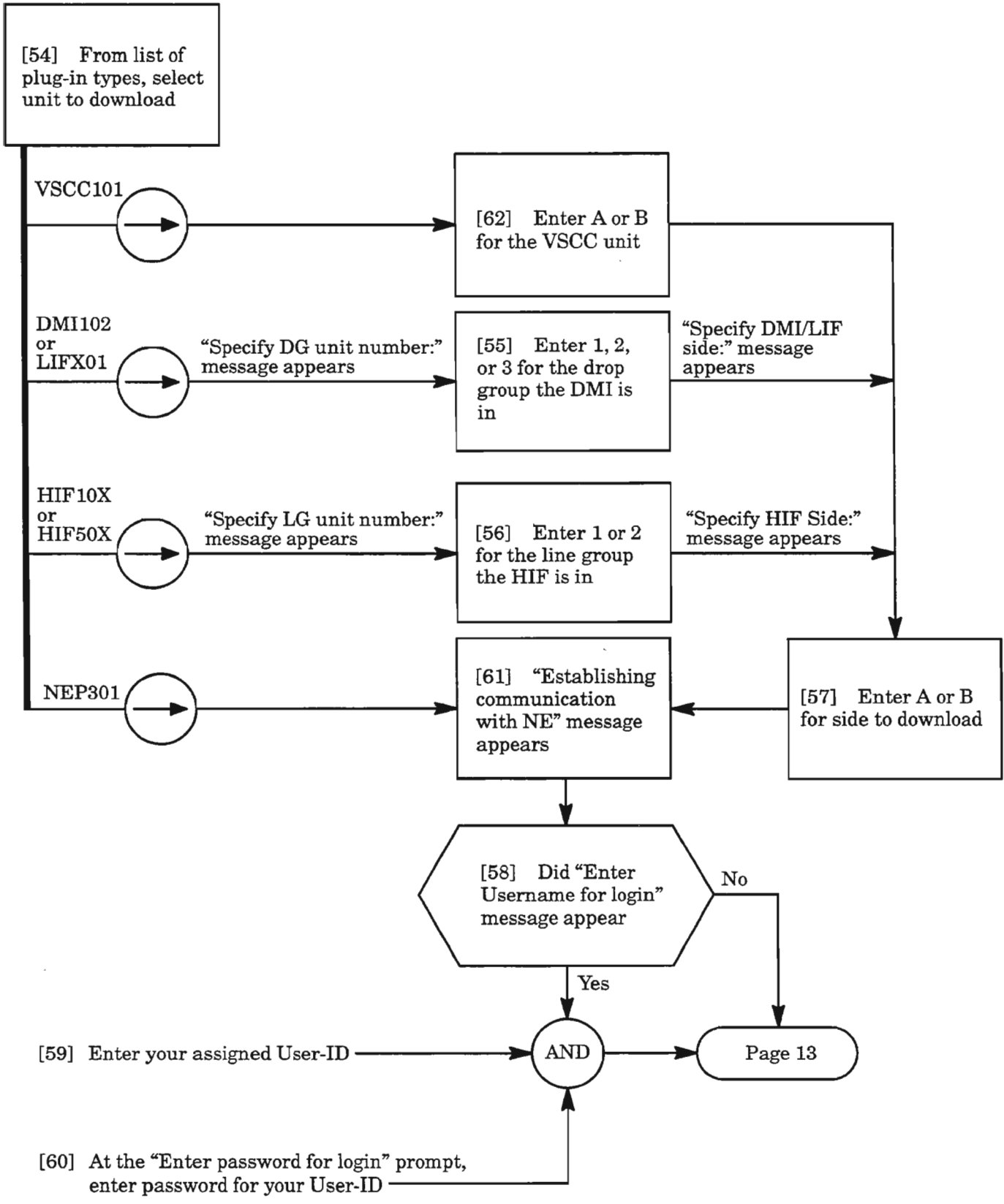
6. The green ACT (Active) LED on the NEP301 flashes during the download process. Do not remove power from the processor while it is blinking.



**NOTE: 7.** *The Primary State (pst) of the target processor must be OOS-MA-AS (Out-Of-Service for Provisioning Activity – Assigned) before the unit can be downloaded.*

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 10 of 16	116





ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 12 of 16	116

DOWNLOAD SOFTWARE FROM PERSONAL COMPUTER TO 1603/12 SM NETWORK ELEMENT

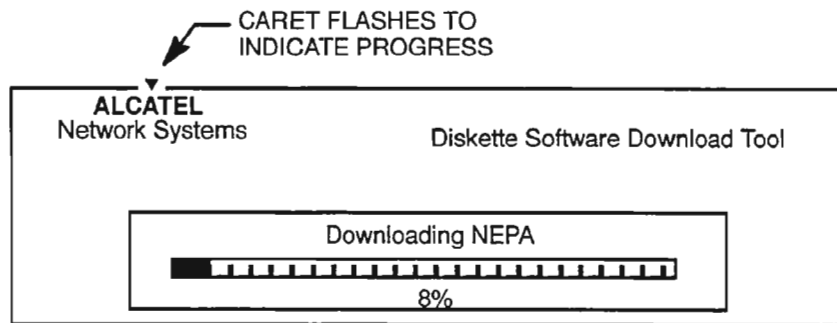
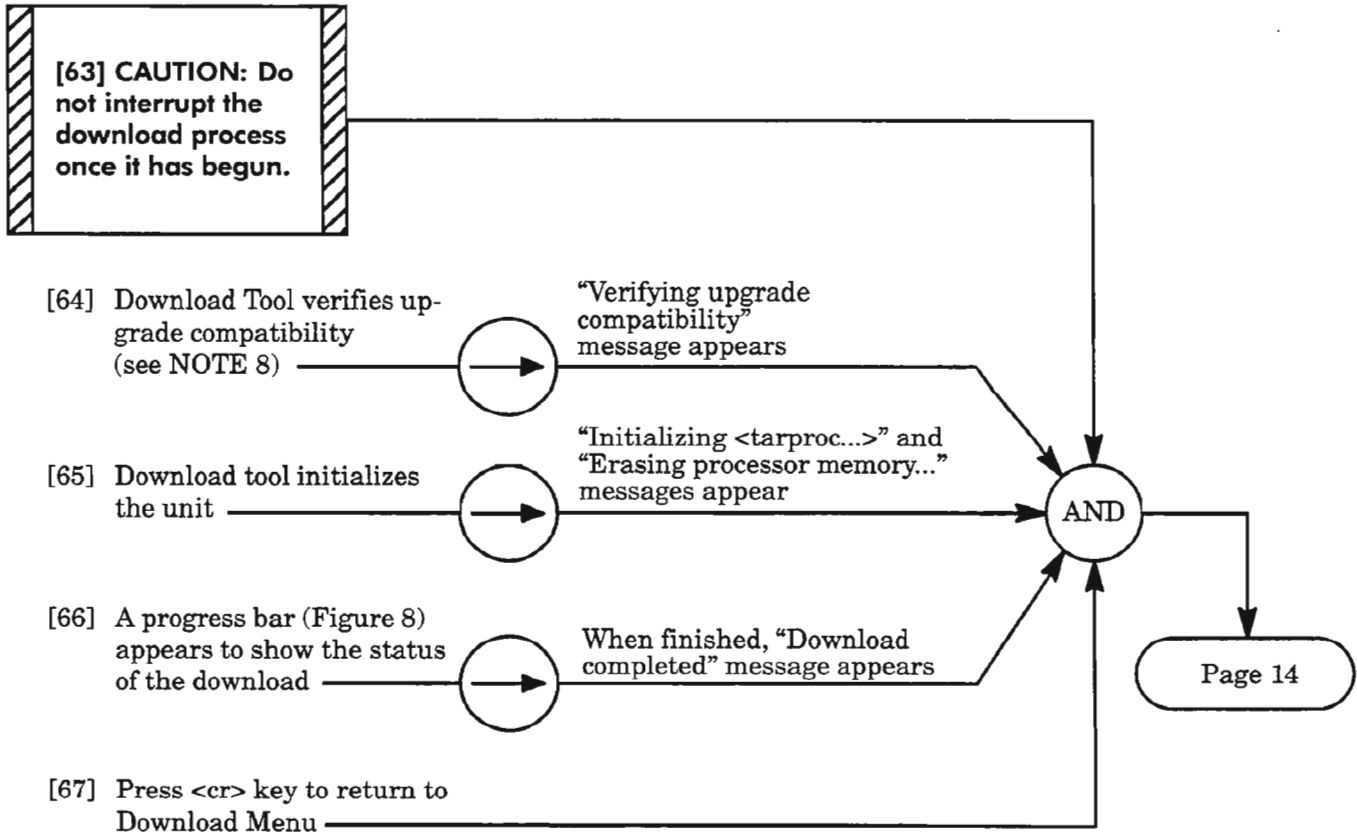


Figure 8. Progress Bar During Download Process

**NOTE: 8.** The green ACT (Active) LEDs on the NEP301 and unit being downloaded to, flash during the download process. Do not unplug unit or remove power while an LED is flashing.

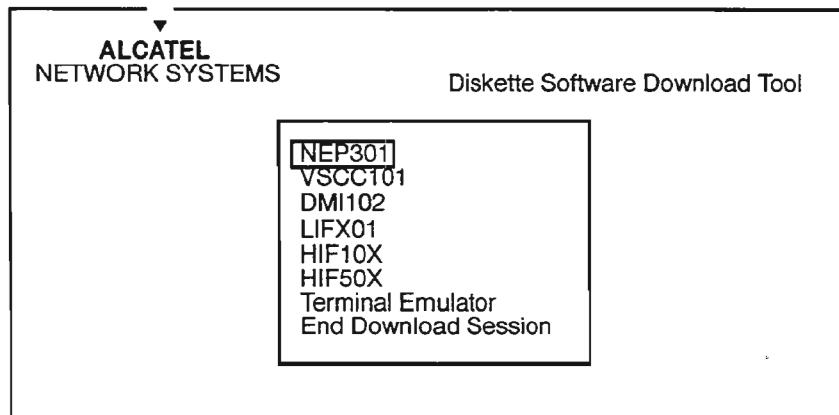
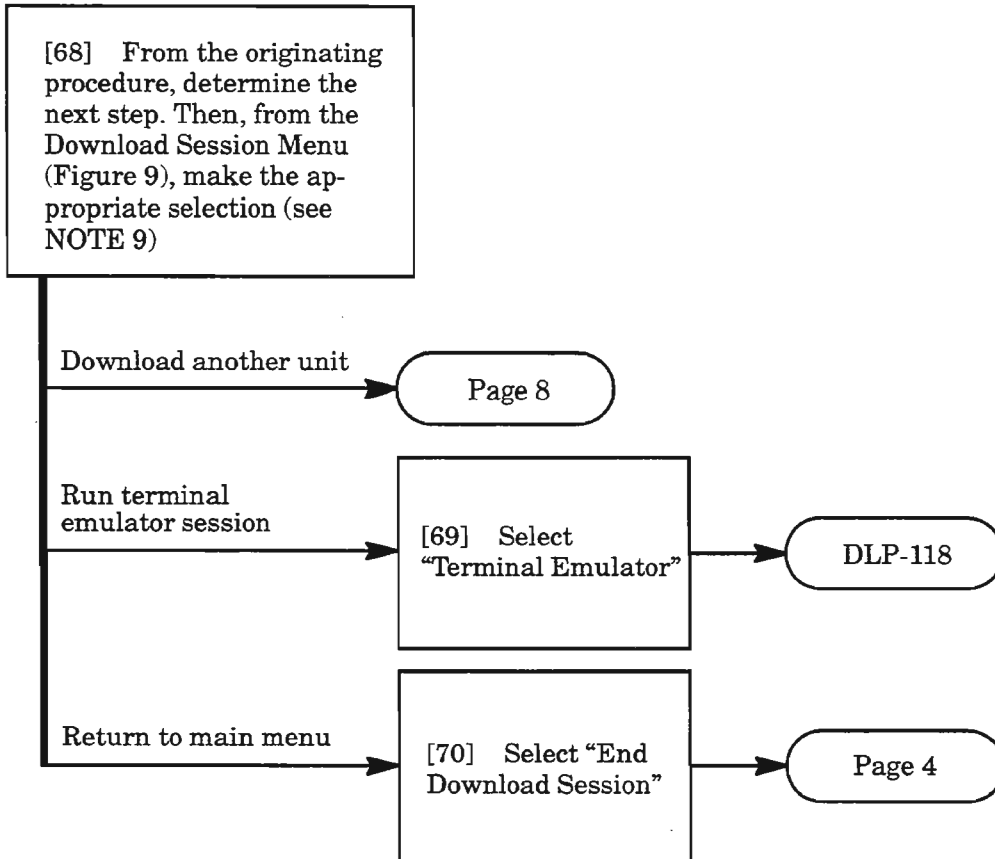


Figure 9. Download Session Menu

**NOTE: 9.** The Terminal Emulator allows you to log on to the NE and enter TL-1 commands. You can toggle between the Terminal Emulator session and Download session without having to log on to the NE each time.

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 14 of 16	116

DOWNLOAD SOFTWARE FROM PERSONAL COMPUTER  
TO 1603/12 SM NETWORK ELEMENT

**Table A. Red Window Dialog Messages**

MESSAGE	TYPICAL CAUSE	TYPICAL ACTION
No software images installed	No software images on hard drive	Install software images (DLP-115)
Software image is corrupt – re-install	Software image on hard drive has been damaged	Delete software image, exit to DOS and run chkdsk /F, re-install software image (DLP-115)
No response from NE	Serial port cable not connected or excessive link errors; download tool serial port parameters do not match NE craft port parameters; NE in unknown state or NE hardware fault; or COM port failure	Retry download. If it fails again, check serial port cable (DLP-119); make sure correct COM port is specified when invoking download tool; check COM port parameters; check NE processor and craft interface; reboot PC only if other attempts to fix are unsuccessful
Nothing entered...	No username, password, unit number or side entered when prompted	Retry or quit
Unit number out of range...	Unit number selection invalid	Retry or quit
Please specify A or B...	Unit side selection invalid	Retry or quit
Login failed...	Login failed due to invalid username/password combination	Retry or quit
Hardware not compatible with selected software image	PC is connected to a system which is not a 1603/12 SM or processor unit does not match selected unit type	Ensure that NE to which PC is connected is a 1603/12 SM or redo selection
NEP must be downloaded first	Upgrading from current NE load requires NEP to be downloaded first	Select NEP to download
Peripheral processors must be downloaded first	Upgrading from current NE load requires slave processors to be downloaded first	Select slave processors to download
Current NE software load not installed on PC ...	Software image for current NE load is not installed on hard drive	Proceed with download if revert capability is not a concern
Current NE load not upgrade compatible	Upgrading from current NE load is not supported	Proceed with download if database preservation is not a concern

**Table A. Red Window Dialog Messages (cont)**

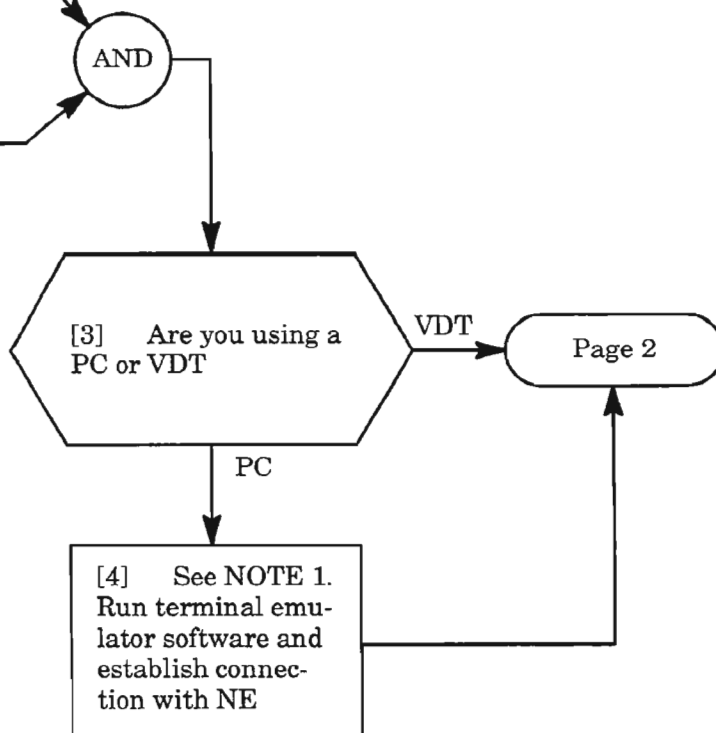
MESSAGE	TYPICAL CAUSE	TYPICAL ACTION
Initialization failed – check processor state	User has insufficient privilege or selected unit not present or not in proper state to download; user attempted to download standby side when active side is recommended	Check user privileges or equipment status (must be OOS-MA-AS); try to override if download to standby side is desired
Insufficient memory	Not enough RAM for download operation	Terminate other memory-resident programs
NE memory failure	Flash memory failed to erase or program correctly	Retry once before declaring hardware failure
Download send error	Download tool operation error	Retry download
Download send timeout	NE has asserted flow control for too long	Retry download
Download failed	Download abnormally terminated due to protocol or NE memory failure	Retry download
Do not remove power from <tar-proc> while green ACT LED is blinking	Download ended due to error	Wait for green ACT LED to stop flashing, and then retry download

**NOTE:** *Error messages ending in ellipses (...) indicate recoverable errors; message is followed by decision menu asking user to retry or abort.*

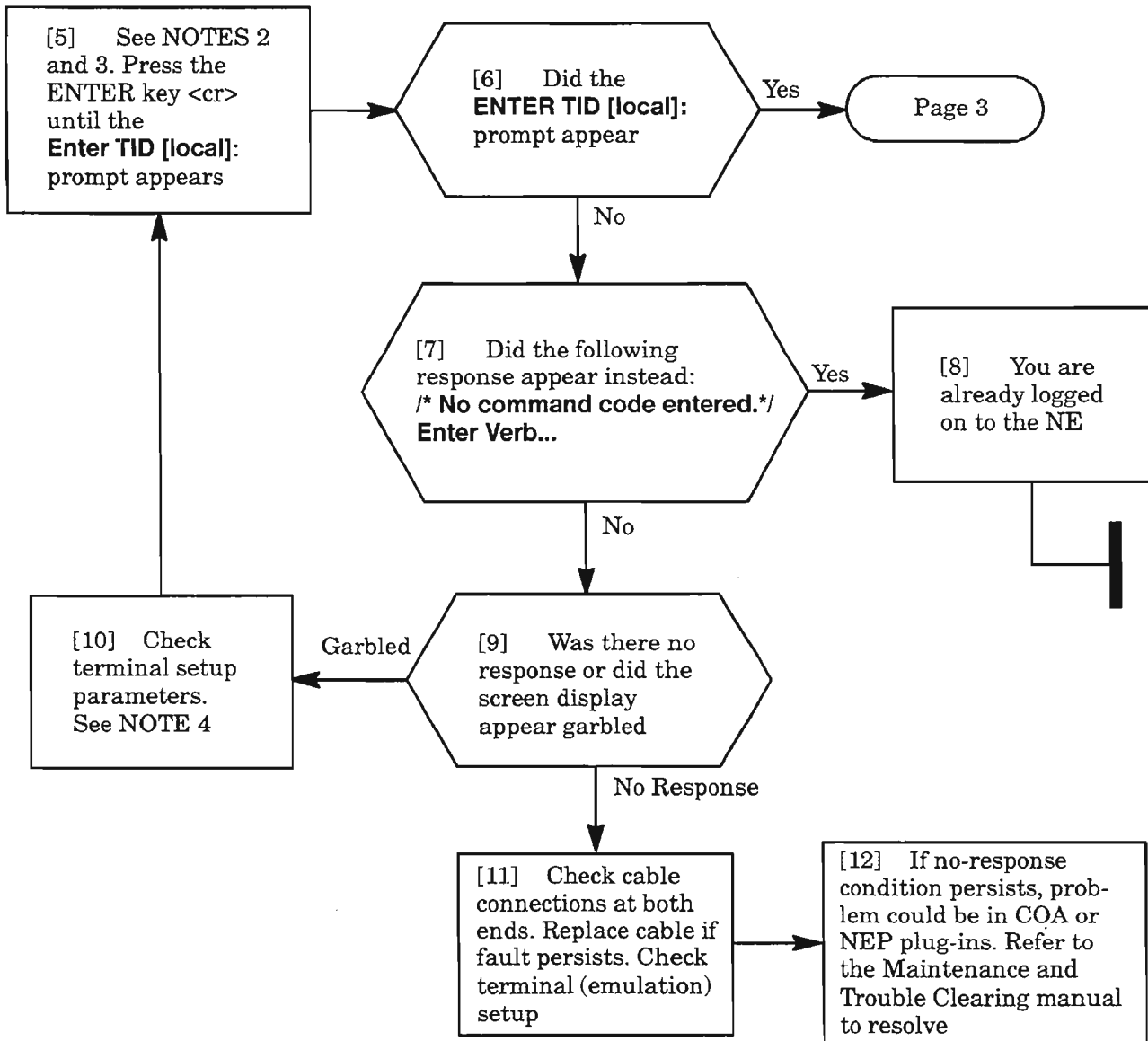


[1] Connect Personal Computer (PC) or Video Display Terminal (VDT) to COA craft-port, if not already done (DLP-119)

[2] Get Network Element (NE) name (TID), username (login ID) and password from security administrator

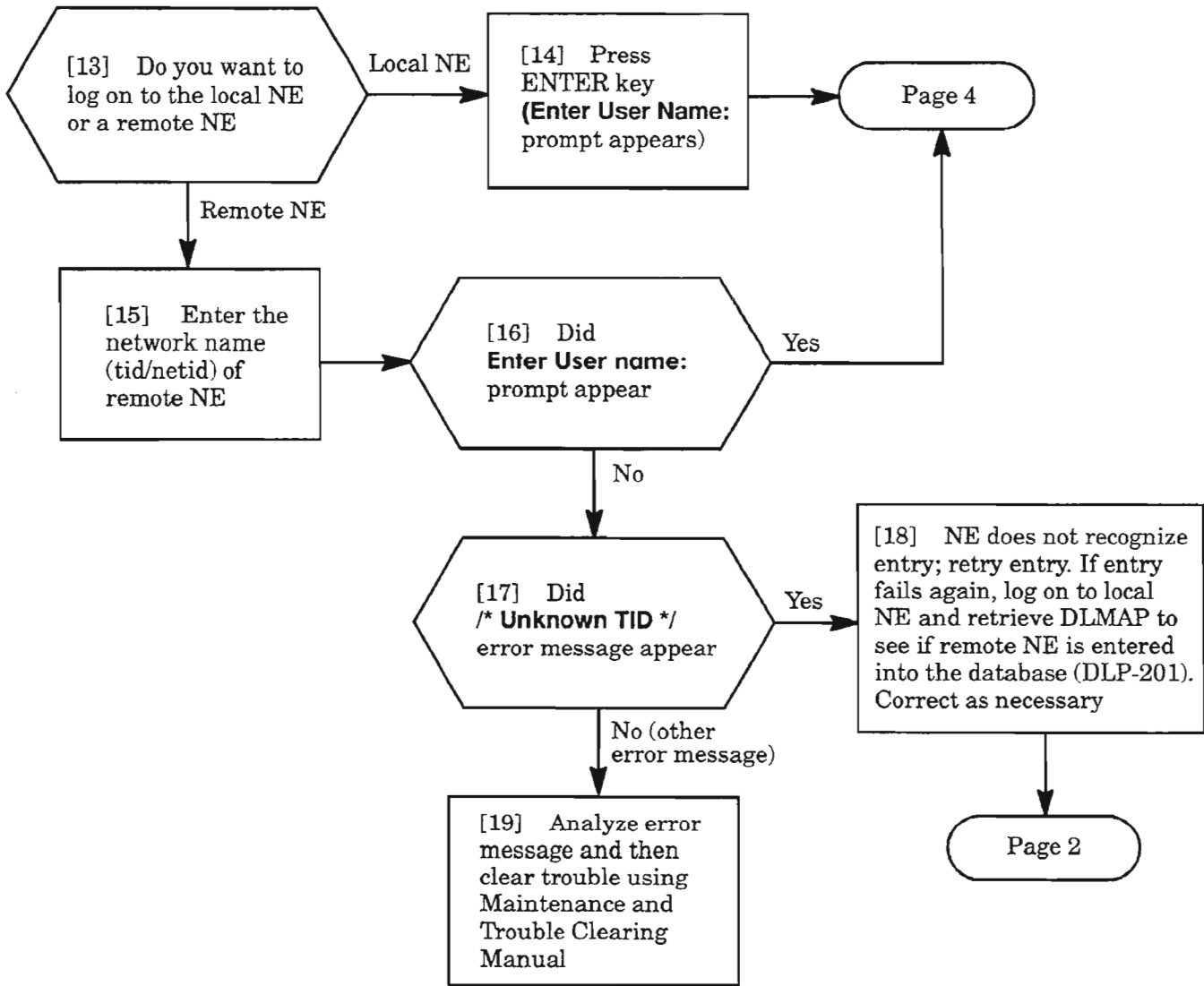


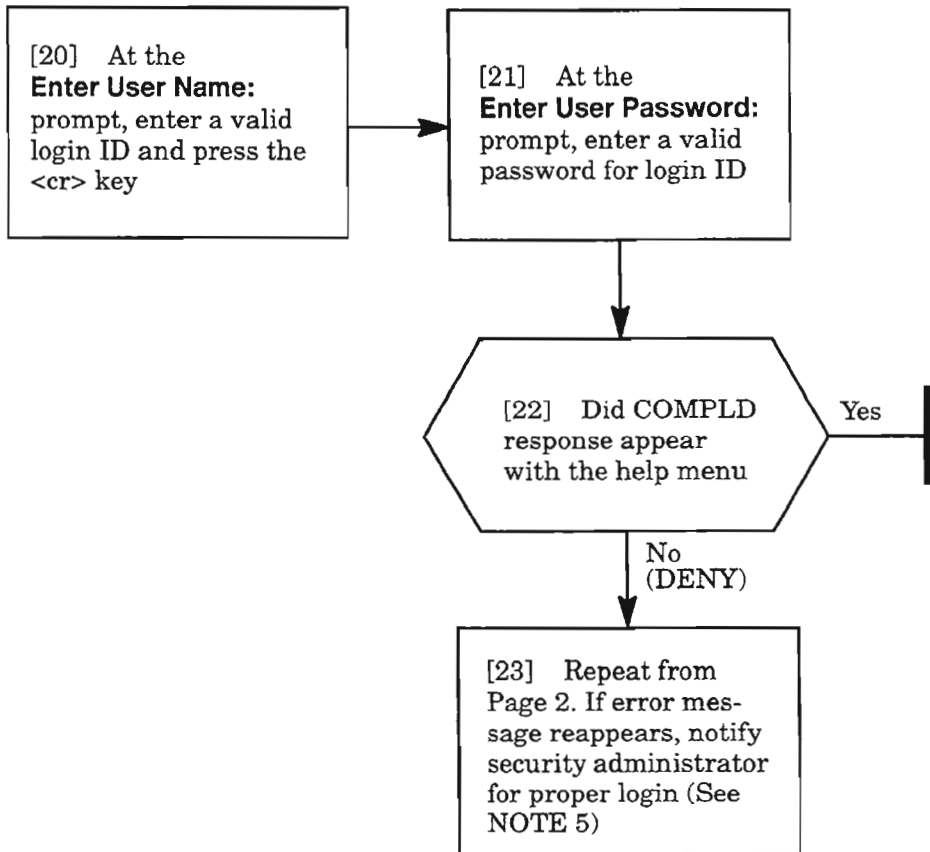
**NOTE:** 1. If the Download Tool's CRAFTSESSION is used to log on to the NE, see DLP-118. Otherwise, refer to the terminal emulator program's user manual to establish communication.



- NOTES:**
2. Commands can be entered before logging on to the NE if the command has the proper security privilege level. Thus, any entry besides an ENTER by itself will be interpreted as a command entry. An ENTER by itself is required to get the Enter TID (local) prompt. Use a CTRL-X to cancel a command entry if you get into the prompt mode and want the Enter TID (local) prompt instead.
  3. The ACT-USER:[tid]:uid:[ctag]::pid; command can be used to immediately log into the NE.
  4. The 1603/12 SM factory default craftport parameters are: 9600 bps, 8 bits, no parity, 1 stop bit, 80-character line width, and VT100 terminal type. If you want to change any of these parameters, use the ED-PORT command. Changes do not take effect until the next login session.

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 4	117





**NOTE: 5.** *If password is forgotten, contact Alcatel Customer Technical Assistance Center (TNG-505).*

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 4 of 4	117

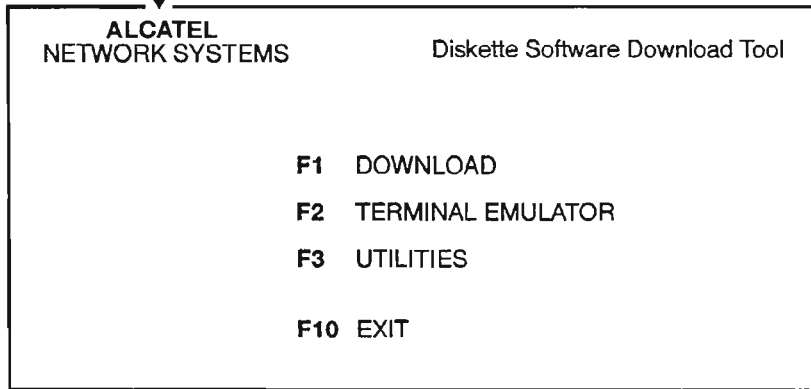
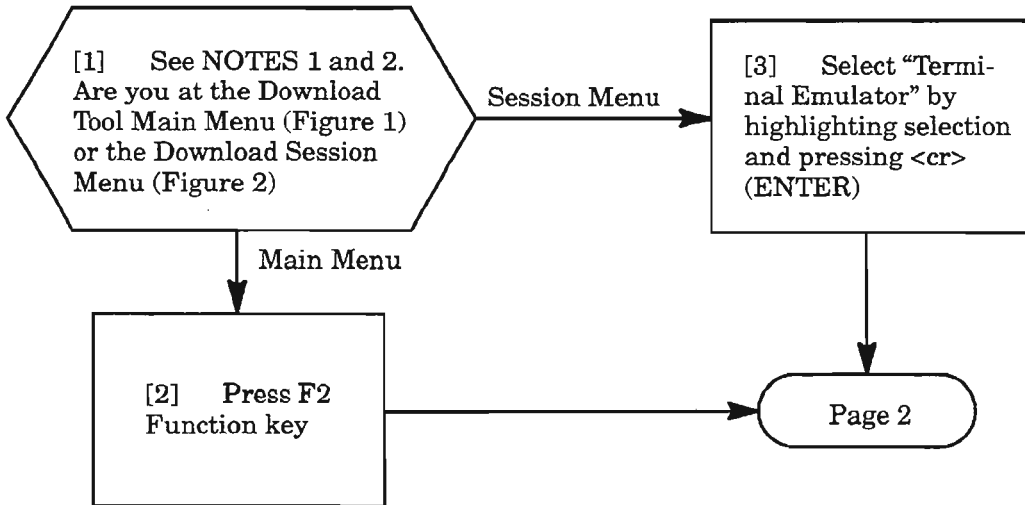


Figure 1. Download Tool Main Menu

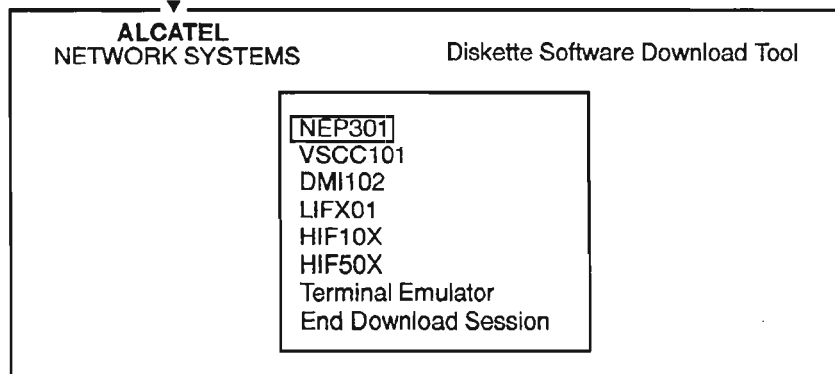


Figure 2. Download Session Menu

- NOTES:** 1. This procedure assumes the Download Tool is installed and running on a Personal Computer (PC) (see DLP-114). It also assumes the PC is properly connected to the 1603/12 SM Craft1 port (DLP-119).
2. The Terminal Emulation session can be accessed from two different places while running the Download Tool. Accessing it from the Download Session Menu allows the user to toggle between downloading software and the Terminal Emulation session.

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 1 of 4	118

[4] TL-1 commands can now be entered (see DLP-117) from the Terminal Emulator session (Figure 3)

[5] Press F10 Function key at any time to return to the previous screen (see NOTE 3)

AND

Page 3

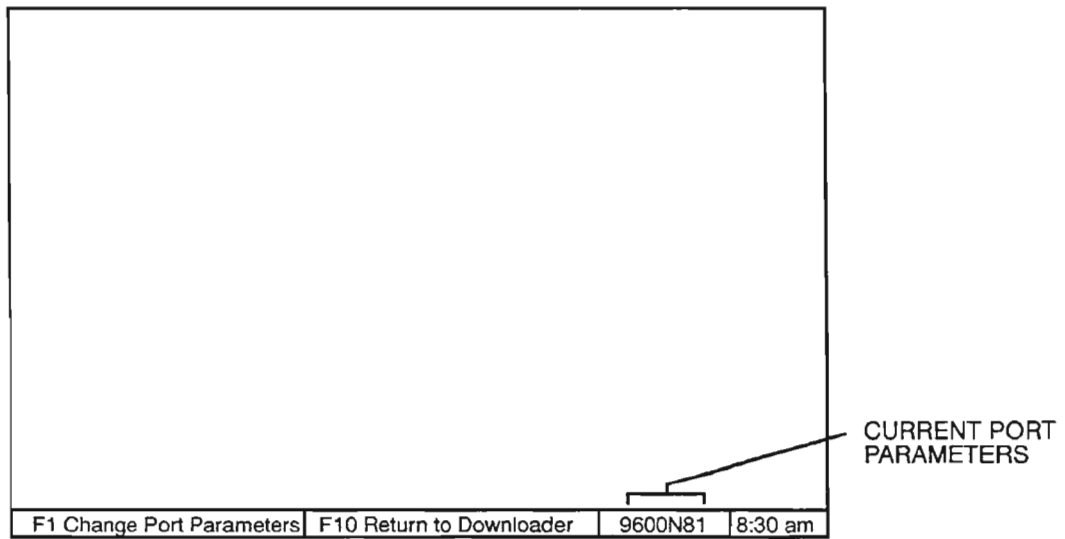
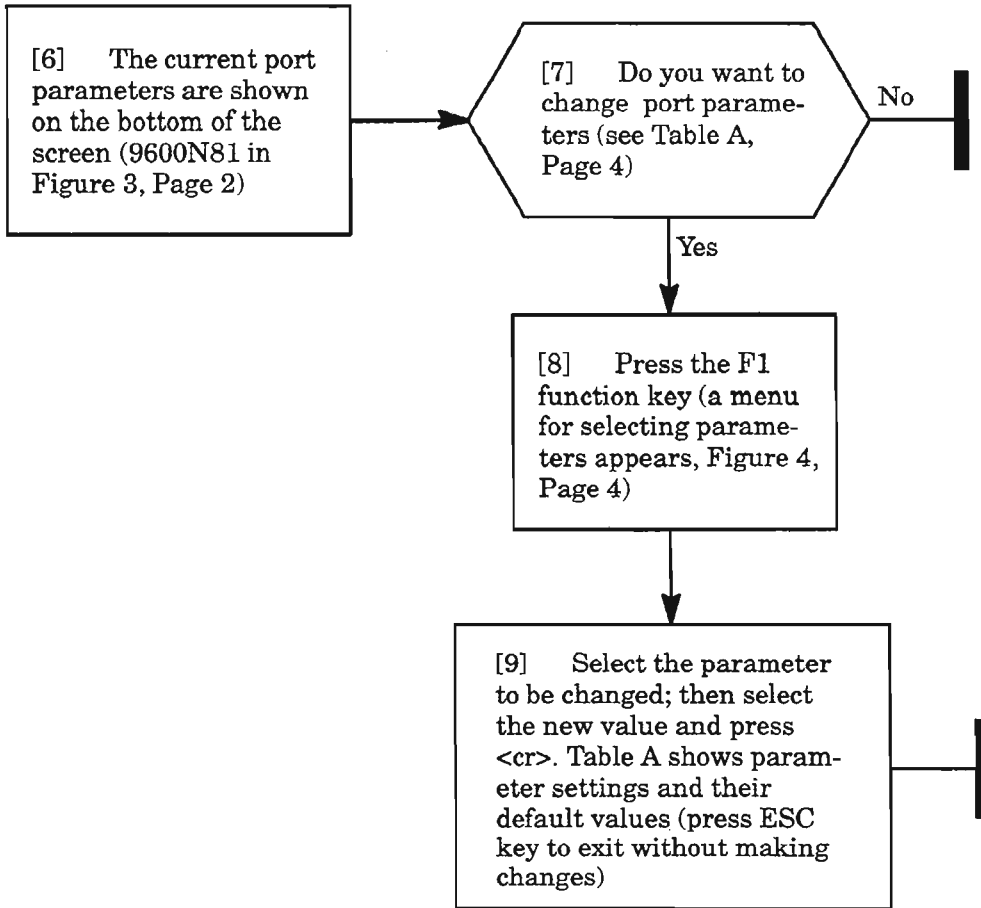
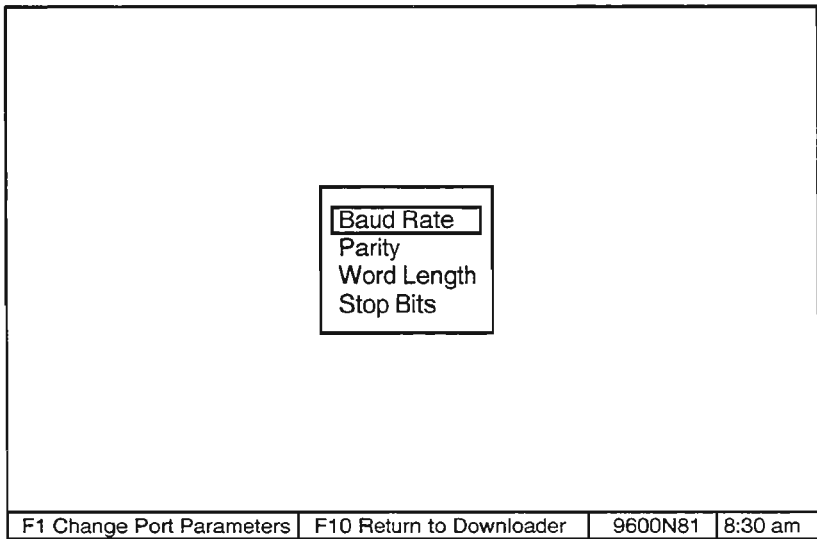


Figure 3. Terminal Emulator Screen

**NOTE: 3.** You can leave and return to the Terminal Emulator session without having to login to the Network Element (NE) each time if the NE craftport does not time out. Edit the CRAFT1 port parameters, if necessary (see ED-PORT command).

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 2 of 4	118





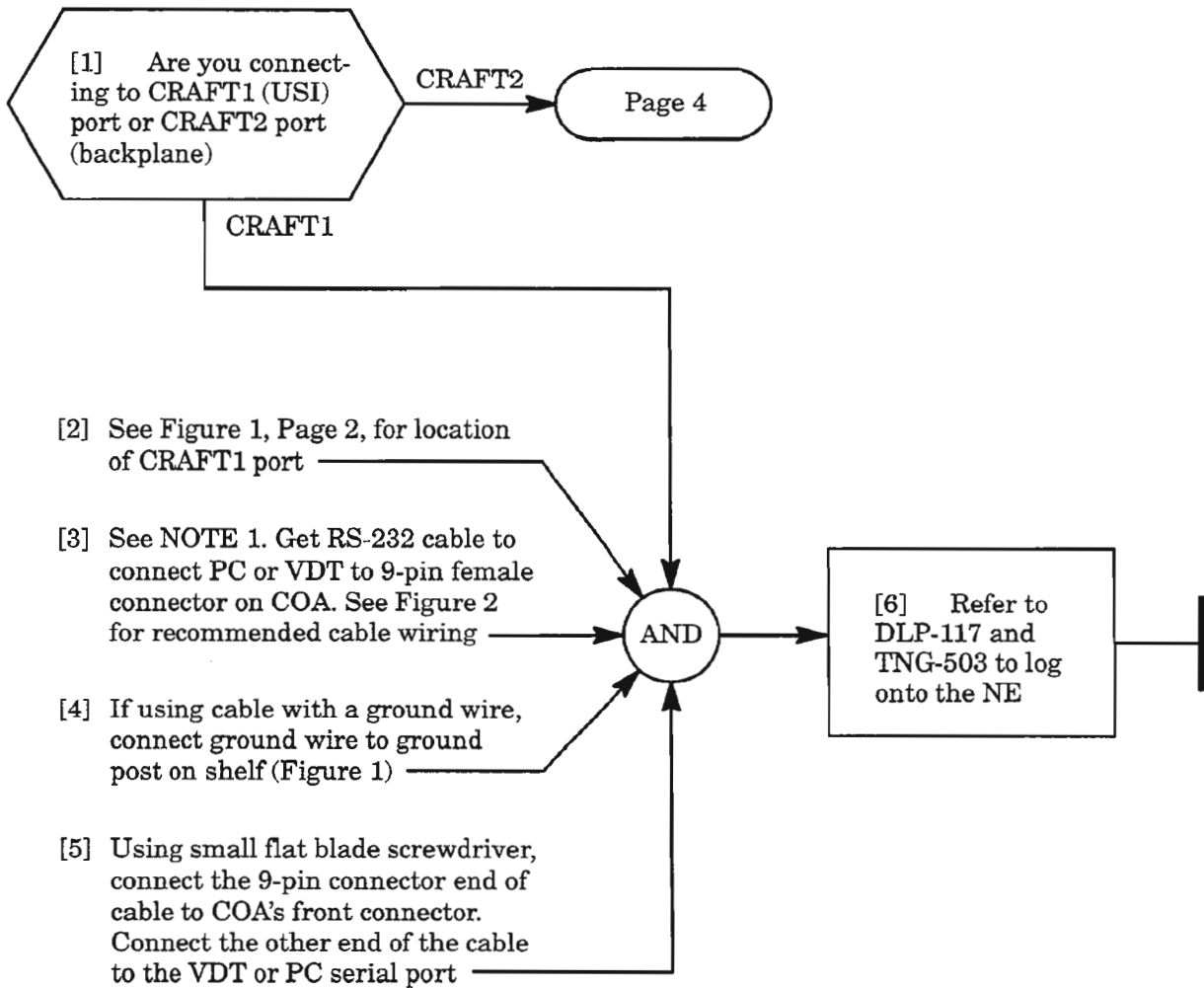
**Figure 4. Terminal Emulator Parameter Selection Menu**

**Table A. Terminal Emulator Communication Parameters\***

Baud rate	1200, 2400, 4800, <u>9600</u> or 19200
Parity	Even, Odd, or <u>None</u>
Word length	7 or <u>8</u> bits
Stop bits	<u>1</u> or 2 bits

\* Default values for 1603/12 SM NE and Download Tool are underlined





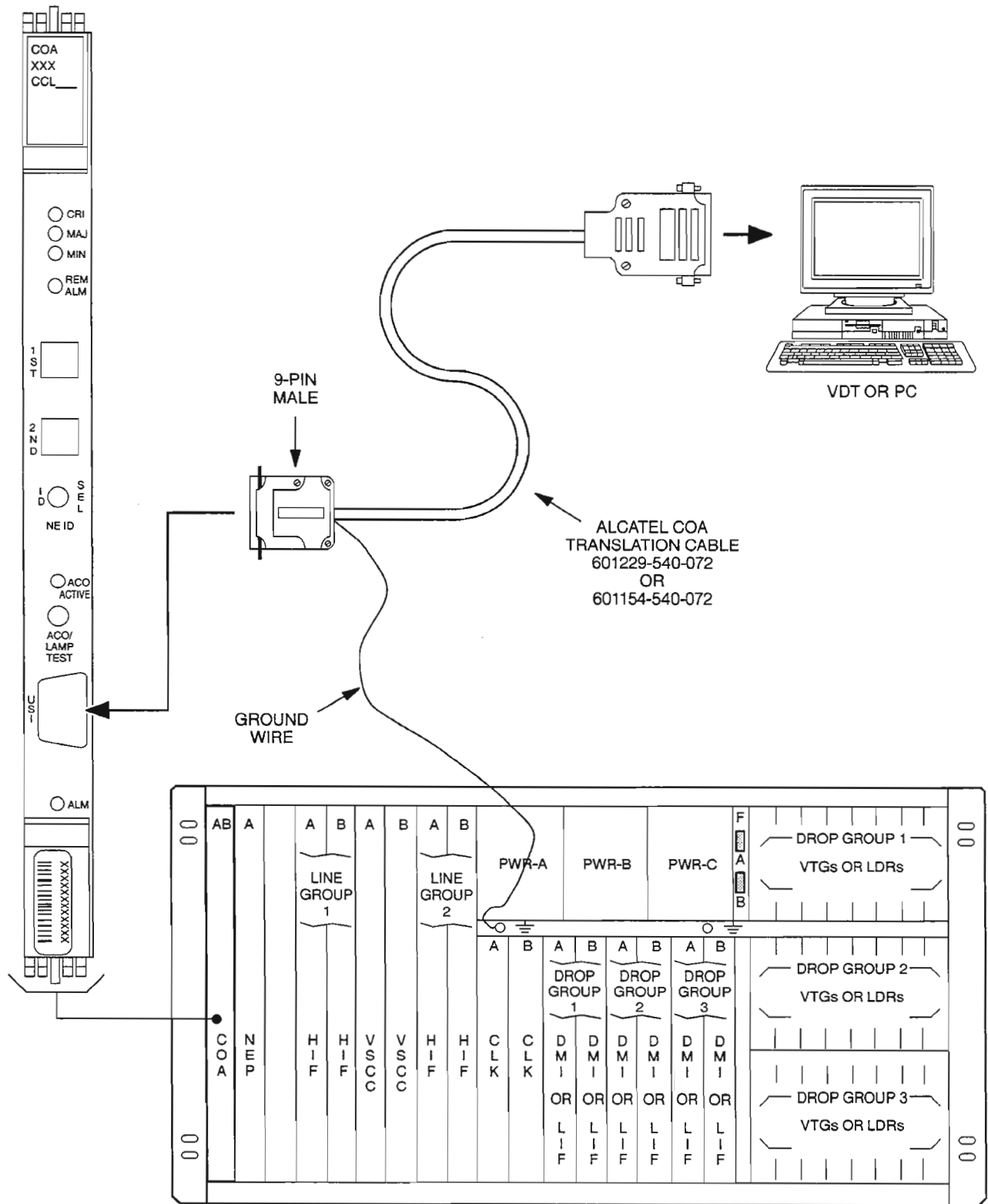
**NOTE:** 1. For PC or VDT with 25-pin male RS-232 port, use 601229-540-072 9-pin male to 25-pin female cable assembly, or equivalent.

For PC or VDT with 25-pin female RS-232 port, use 601154-540-072 9-pin male to 25-pin male cable assembly, or equivalent.

For PC or VDT with 9-pin RS-232 port, use standard RS-232 cable with 9-pin male connector on end for COA CRAFT1 port.

**CONNECT PC OR VIDEO DISPLAY TERMINAL TO CRAFT1 OR CRAFT2 PORT**

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 1 of 6	119

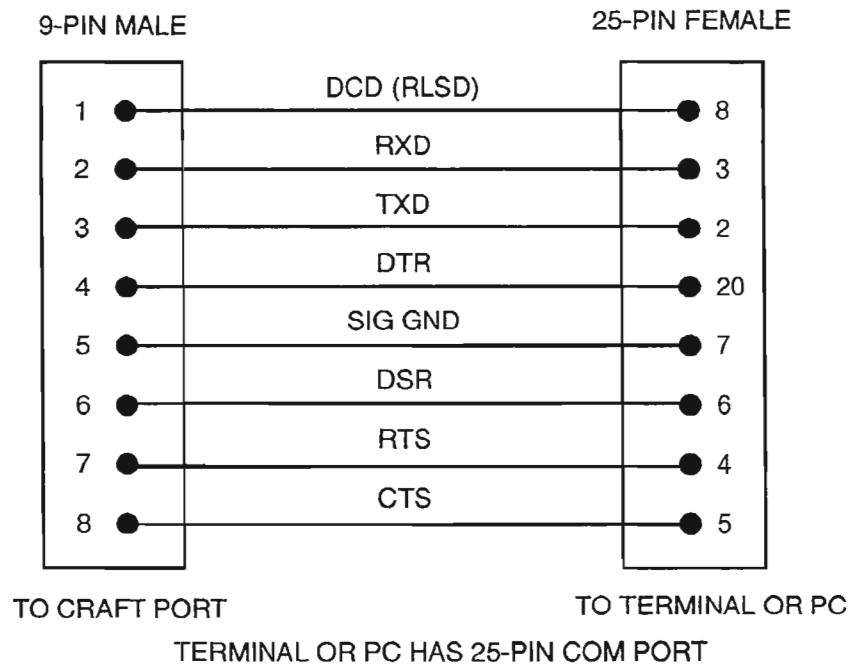
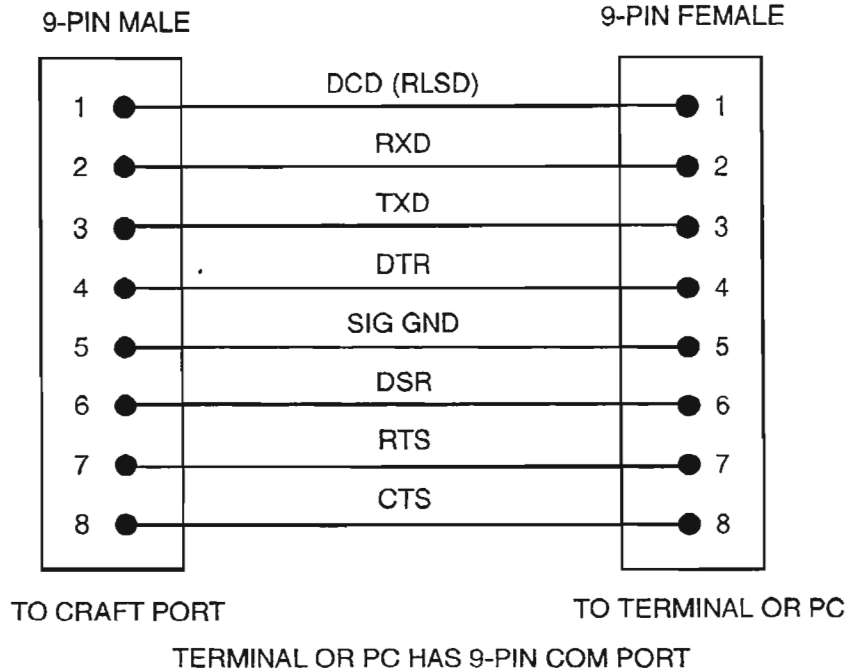


A7896Rev1

Figure 1. Connecting Craft Terminal (VDT or PC) to CRAFT1 (USI) Port

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 2 of 6	119

CONNECT PC OR VIDEO DISPLAY TERMINAL  
TO CRAFT1 OR CRAFT2 PORT



A7699Rev1

Figure 2. CRAFT1 (USI) Port Interface Cable Wiring

CONNECT PC OR VIDEO DISPLAY TERMINAL  
TO CRAFT1 OR CRAFT2 PORT

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 3 of 6	119

[7] Run 22 AWG solid conductor wires (7 wires) between RS-232 wire-wrap pins on 1603/12 SM shelf (see Figure 3, Page 5) and data terminal. Table A shows typical wiring connections between the backplane and a DB-25 connector or DEC VT-320 terminal or equivalent

[8] Verify that there are no straps (jumpers) between DTR-T, RTS-T and SG pins. Remove these straps if present



**Table A. CRAFT2 Port Wiring**

1603/12 SM BACKPLANE	SIGNAL	DB-25	VT-320 (6-PIN)
DCD-T	Carrier Detect (RLSD)	8	
DSR-T	Data Set Ready	6	1 (DTR)
CTS-T	Clear To Send	5	
RXD-T	Receive Data	3	2 (TXD+)
DTR-T	Data Terminal Ready	20	6 (DSR)
RTS-T	Request To Send	4	
TXD-T	Transmit Data	2	5 (RXD+)
OPT-T	Optional		
FG	Frame Ground		
SG	Signal Ground	7	4 (SG)

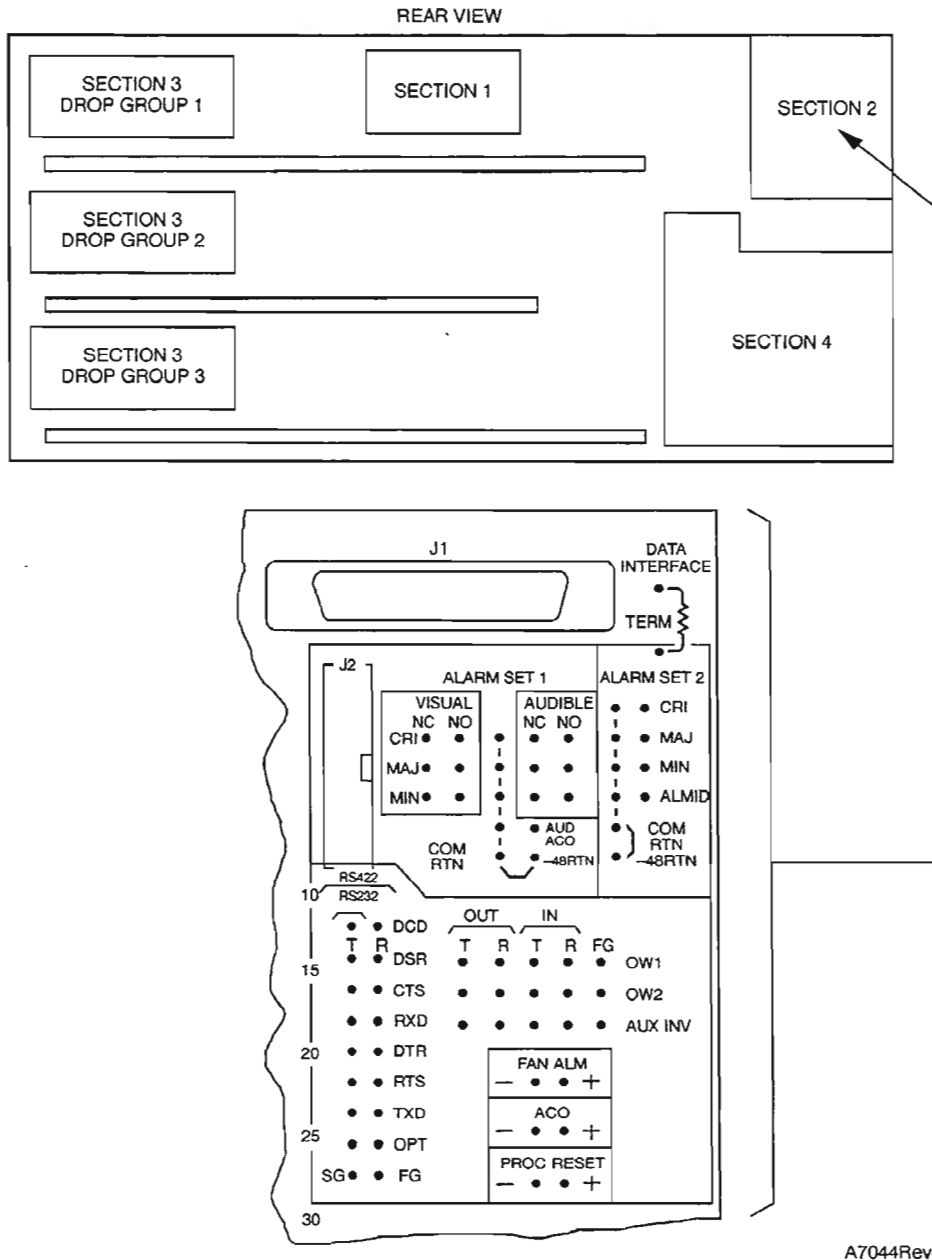
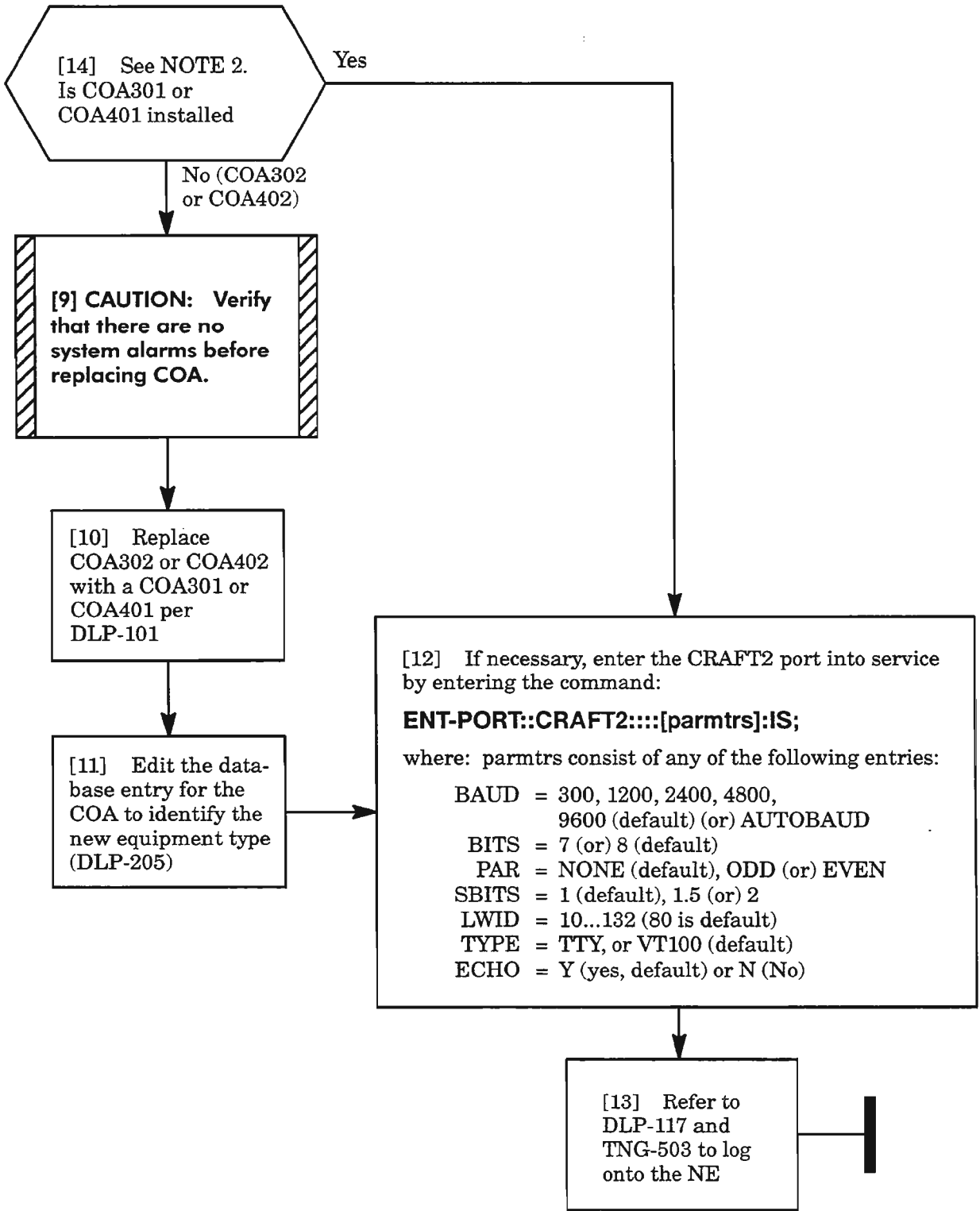


Figure 3. 1603/12 SM Rear View, Section 2 Cabling

CONNECT PC OR VIDEO DISPLAY TERMINAL  
TO CRAFT1 OR CRAFT2 PORT

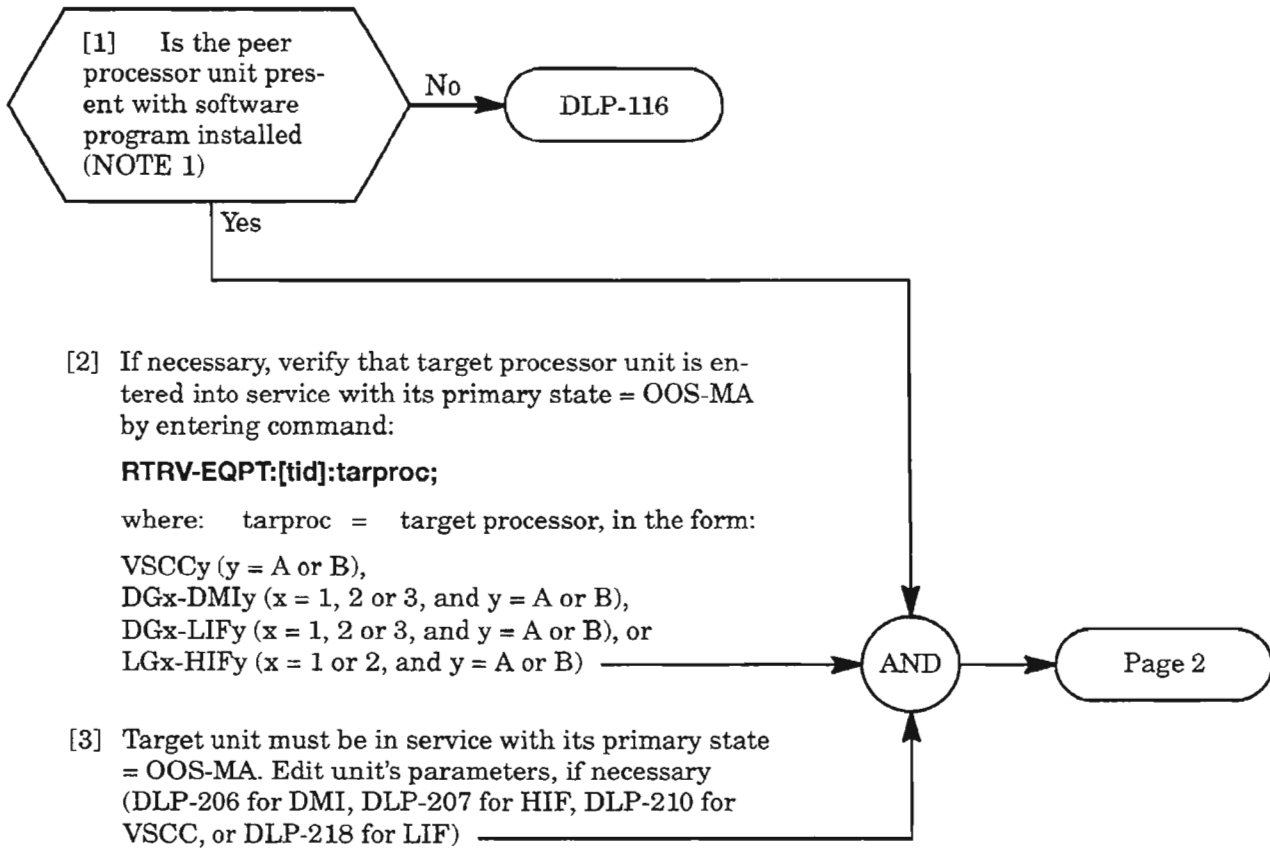
ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 5 of 6	119



**NOTE: 2.** The CRAFT2 interface requires the COA301 or COA401 plug-in unit (versus the COA302 or COA402).

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 6 of 6	119

**CONNECT PC OR VIDEO DISPLAY TERMINAL  
TO CRAFT1 OR CRAFT2 PORT**



**NOTE:** 1. The slave processor units (HIF, LIF, VSCC, and DMI units), when equipped in the redundant configuration, allow the software program installed on one unit to be copied to its peer unit. This is desirable because the copy process is faster than the download process. A peer unit is defined as the redundant unit of the same type in a duplex configuration. The copy process can be done from side A to side B, or vice versa.

[4] Copy program from peer unit by entering the command:

**CPY-MEM:[tid]:FROMDEV=srcproc:[ctag]::PGM;**

where: srcproc = source peer processor, in the form:

VSCCy (y = A or B),

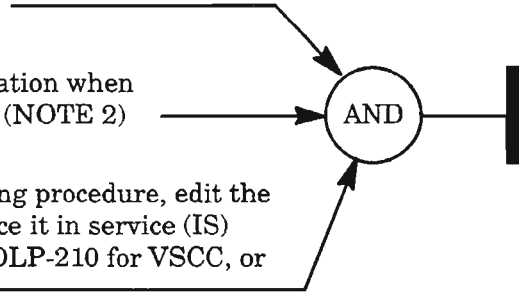
DGx-DMIy (x = 1, 2 or 3, and y = A or B), or

DGx-LIFy (x = 1, 2 or 3, and y = A or B), or

LGx-HIFy (x = 1 or 2, and y = A or B)

[5] Watch autonomous messages for indication when copy process is completed (unit resets) (NOTE 2)

[6] Unless directed otherwise by originating procedure, edit the target processor's primary state to place it in service (IS) (DLP-206 for DMI, DLP-207 for HIF, DLP-210 for VSCC, or DLP-218 for LIF)



**NOTE: 2.** *The green ACT (Active) LED on the target processor unit flashes during the CPY-MEM process and stops flashing when the process is completed.*

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 2	122



[1] CAUTION: The provisioning data base may be overwritten if the wrong command parameters are selected when performing this procedure.

[2] This procedure copies the provisioning data base between the NEP-A unit (working data base) and the COA unit (primary data base). The direction of the copy depends on the FROM-MEM (from memory) parameter chosen when entering the command

[3] Determine which unit the data base is to be copied from (FROMMEM=WKG if copying data base from NEP to COA, or FROMMEM=PRI if copying data base from COA to NEP)

[4] Enter one of the following commands:

**CPY-MEM:[tid]:FROMMEM=WKG:[ctag]::DATA;**

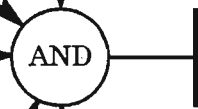
if copying data base from NEP-A to COA

– or –

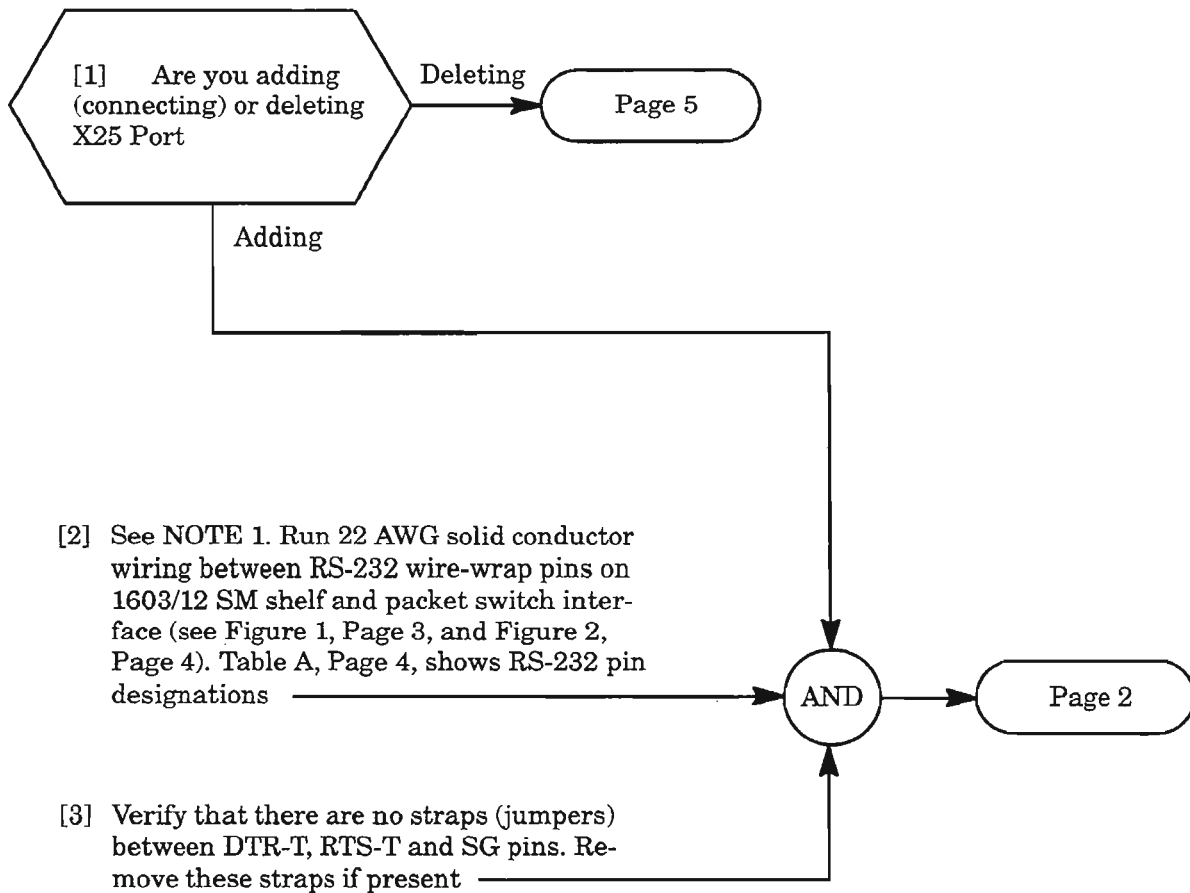
**CPY-MEM:[tid]:FROMMEM=PRI:[ctag]::DATA;**

if copying data base from COA to NEP-A

[5] Do not enter any commands until execution of the CPY-MEM command is complete



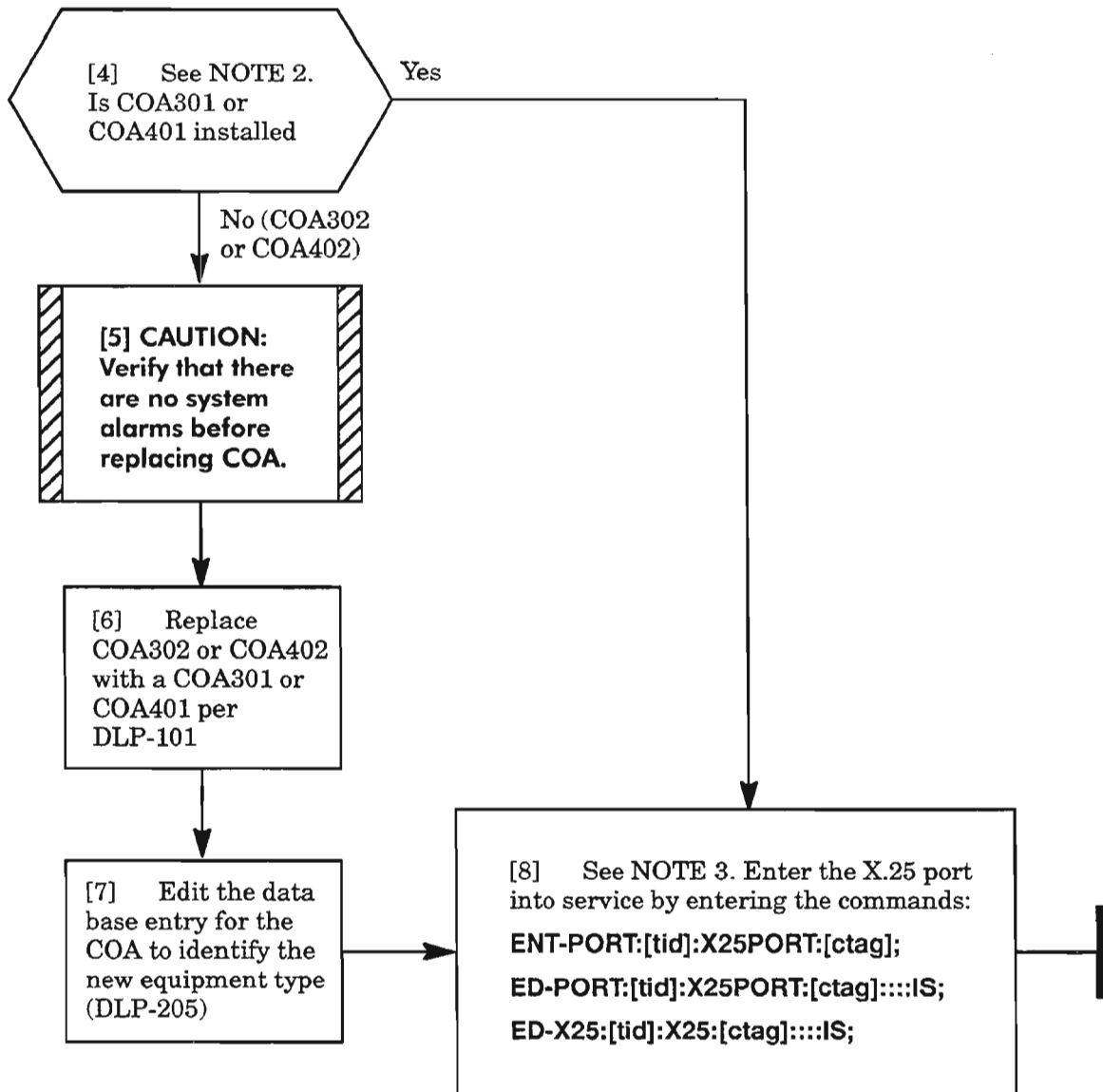




**NOTE: 1.** The 1603/12 SM supports two Permanent Virtual Circuits (PVCs), which means only two OS at a time can log in to the X.25 gateway. The PVCs are referred to as Logical Channel Number 1 (LCN1) and Logical Channel Number 2 (LCN2). LCN1 is dedicated to NMA, and LCN2 is dedicated to OPS-INE. These assignments are not provisionable. Future 1603/12 SM releases will support switched virtual circuit operation, which means more simultaneous OS connections and arbitrary mix of OS.

ISSUE 3	OCT 1994
ALCL 363-203-502	DLP
PAGE 1 of 5	124

## Add (Connect) X25 Port

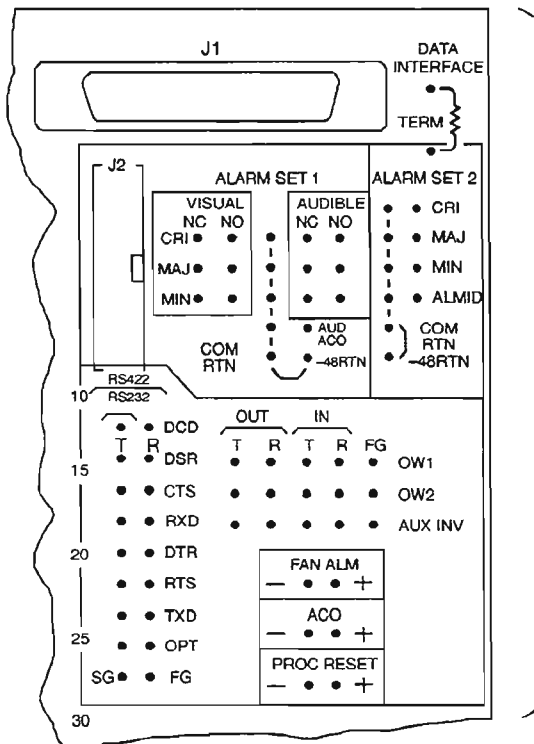
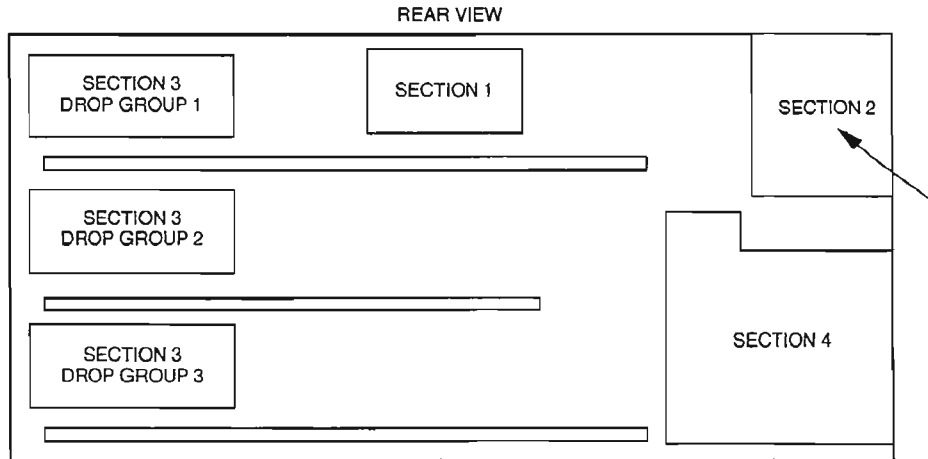


**NOTES: 2.** The X.25 port interface requires the COA301 or COA401 plug-in unit (versus the COA302 or COA402).

**3.** The X.25 port parameters are as follows:

BAUD = (depends on external CLK signal received on OPT-T wire-wrap pin)

ISSUE 3	OCT 1994
ALCL 363-203-502	DLP
PAGE 2 of 5	124



A7044Rev4

Figure 1. 1603/12 SM Backplane, Section 2 Layout

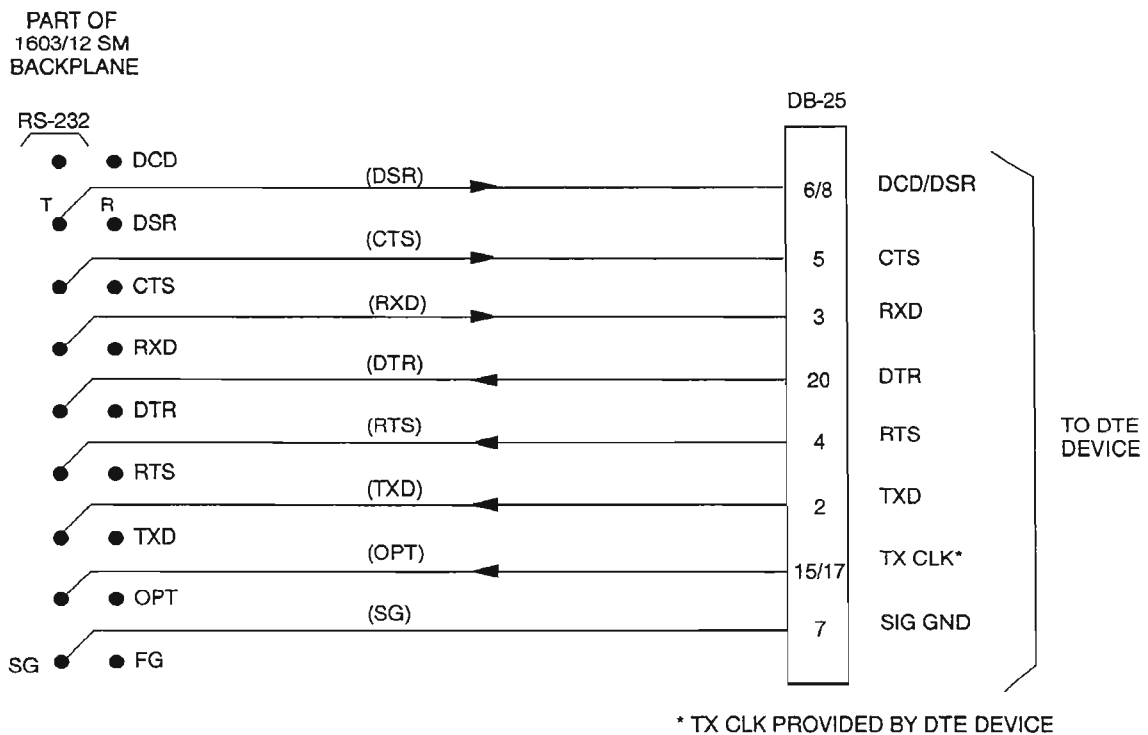
CONNECT OR DELETE X.25 PORT

ISSUE 3	OCT 1994
ALCL 363-203-502	DLP
PAGE 3 of 5	124

**Table A. X.25PORT Port Wiring**

1603/12 SM BACKPLANE (RS-232) DCE TERMINALS	DESCRIPTION	DB-25 CONNECTOR TO DTE DEVICE	DB-25 CONNECTOR TO DCE DEVICE
DCD-T	Carrier Detect (RLSD)		
DSR-T	Data Set Ready	6/8	20
CTS-T	Clear To Send	5	4
RXD-T	Receive Data	3	2
DTR-T	Data Terminal Ready	20	6/8
RTS-T	Request To Send	4	5
TXD-T	Transmit Data	2	3
OPT-T	Optional (RX clock)	15/17	15/17
FG	Frame Ground		
SG	Signal Ground	7	7

*Pins 6 and 8 must be connected together (jumper) in both the DCE and DTE connectors.  
The OPT-T terminal requires external receive clock.*



A8229Rev1

**Figure 2. Typical X.25 Wiring from 1603/12 SM Backplane**

ISSUE 3	OCT 1994
ALCL 363-203-502	DLP
PAGE 4 of 5	124

**CONNECT OR DELETE X.25 PORT**

## Delete X25 Port

[9] Enter the following command:

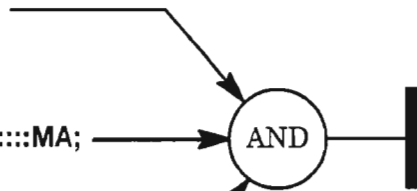
**ED-X25:[tid]:X25:[ctag]:::MA;**

[10] Enter the following command:

**ED-PORT:[tid]:X25PORT:[ctag]:::MA;**

[11] Enter the following command:

**DLT-PORT:[tid]:X25PORT:[ctag];**





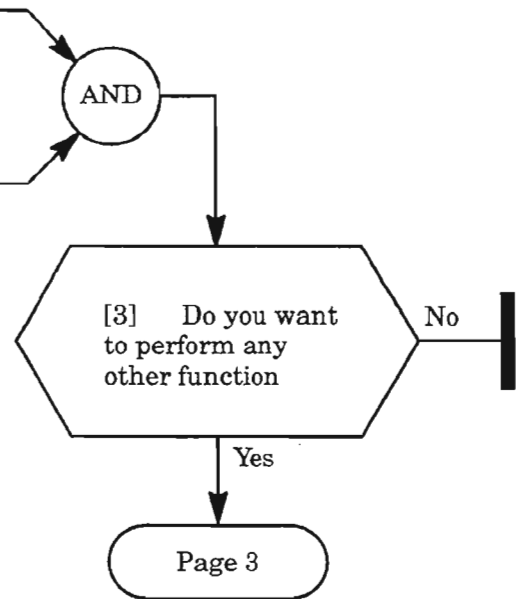


[1] Enter command:

**RTRV-BITS:[tid]:aid:[ctag];**

where: aid = SYNCPRI (primary sync reference)  
          SYNCSEC (secondary sync reference)  
          ALL (both SYNCPRI and SYNCSEC)

[2] See GENERAL EXPLANATION, Page 2, for the provisionable parameters and states for the aid



**GENERAL EXPLANATION  
"RTRV-BITS"**

**RESPONSE**

```

M      SID year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-BITS:[tid]:aid:[ctag]; */
      "aid::[bits_nblk]:pst,[sst],[ast]"
  
```

**WHERE**

**aid**            **SYNCPRI**            Primary sync reference  
                  **SYNCSEC**            Secondary sync reference

**[bits\_nblk]** List of any of the following expressions (assignments):

Equalization (22 gauge):

**EQLZ = 0-655**            (feet)

Equalization (26 gauge):

**EQLZ = 0**                    0-50 feet  
**EQLZ = 200**                 51-100 feet  
**EQLZ = 300**                 101-200 feet  
**EQLZ = 500**                 201-300 feet  
**EQLZ = 600**                 301-450 feet

DS1 line code

**LINECDE = AMI**            Alternate Mark Inversion, or  
**LINECDE = B8ZS**            Bipolar with 8-Zero Substitution

DS1 framing format

**FMT = SF**                    Super Frame, or  
**FMT = ESF**                    Extended Super Frame

**pst**            Primary state (condition) of the BITS facility:

**IS-NR**                    Facility is in-service and normal  
**IS-ANR**                    Facility is in-service but an abnormal condition exists;  
                                   it may be able to perform all or only part of its designed  
                                   service function (e.g., due to degrade)  
**OOS-MA-AS**                 Out-of-service state for provisioning activity; facility has  
                                   been assigned  
**OOS-MA-UAS**                Out-of-service state for provisioning activity; facility has  
                                   not been assigned (default state)  
**OOS-MT**                    Out-of-service state for maintenance activity such as fault,  
                                   performance monitoring or testing; facility has been assigned

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 8	200

**GENERAL EXPLANATION (cont)**  
**"RTRV-BITS"**

**RESPONSE**

```

M      SID year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-BITS:[tid]:aid:[ctag]; */
      "aid::[bits_nblk]:pst,[sst],[ast]"
  
```

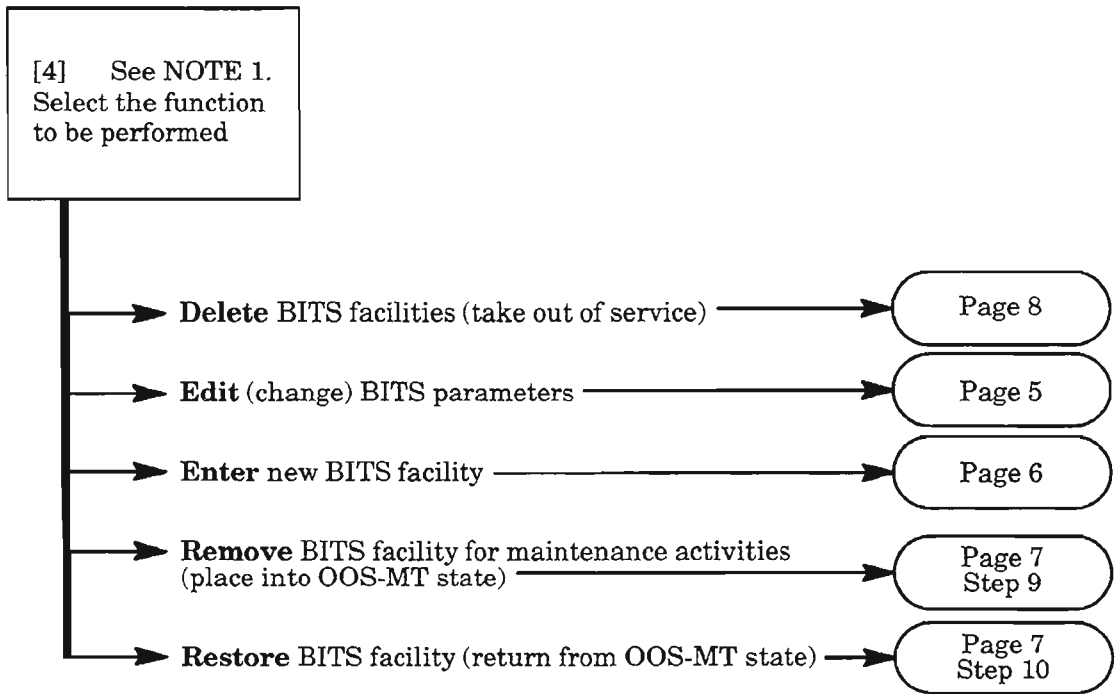
**WHERE**

**[sst]** Secondary state of the BITS facility:

<b>ACT</b>	Active: this facility is currently providing service
<b>AINS</b>	Automatic In Service
<b>APSI</b>	Automatic Protection Switch Inhibited
<b>BOOT</b>	Processor running bootcode
<b>DX</b>	Configuration duplex
<b>EQ</b>	Equipped; the object has been equipped with necessary equipment
<b>FLT</b>	Fault; the facility is OOS-MT because it is faulty
<b>FRC D</b>	Forced; change of state was forced
<b>MAN</b>	Manual
<b>MEA</b>	Mismatch of equipment and attributes
<b>OVFL</b>	Overflow; for LOG and Database Capture Buffer (DCB) objects that are not provisioned with wrap buffer, this indicates the object has depleted its memory resources
<b>PROT</b>	Protection
<b>PWR</b>	Power; entity is OOS because it has no power
<b>SX</b>	Simplex configuration
<b>STBY</b>	Standby
<b>SWDL</b>	Software downloaded
<b>SWVERR</b>	Software version error
<b>TB</b>	Diagnostic test busy
<b>TSTF</b>	Test failure; object is OOS because of a test failure
<b>UEQ</b>	Unequipped; object has not been equipped with the necessary equipment
<b>WORK</b>	Working facility

**[ast]** Associated state of the BITS facility:

<b>FAF</b>	Facility Failure; associated supporting facility is OOS
<b>FEE</b>	Family of Equipment Failure; associated controlling equipment is OOS
<b>UEA</b>	Underlying Entity Abnormal; the associated supporting entity is IS-ANR or OOS



**NOTE: 1.** To select any of the decision paths listed, certain requirements apply to the affected equipment or facility (referred to as "object" in the following list). When selecting a decision path, the following information is pertinent:

- The Enter selection is used to add an object to the current configuration (i.e., to place it into service). The object's provisionable parameters also can be changed from their default value when the object is being entered. This selection is only valid if the current Primary State of the object is Unassigned (OOS-MA-UAS).
- The Edit selection is used to change provisionable parameters of the object after it is already entered into the configuration.
- The Delete function removes the object from the current configuration (i.e., returns the object's Primary State to unassigned, OOS-MA-UAS). Before deleting the object, supported entities (if any) must first be deleted or the delete command will be denied.
- The Remove (RMV) command is used to place an object into the maintenance state (OOS-MT) for testing. It is only valid if the object's current Primary State is In-Service (IS-NR or IS-ANR). Otherwise, the edit command must be used (i.e., from OOS-MA to OOS-MT).
- The Restore (RST) command is used to return an object from the maintenance state (OOS-MT) to the In-Service state (IS).

Execution of a command may be denied if a possible service interruption is detected or if the object is in an incorrect state. (See TNG-514 for more information.)

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 4 of 8	200



## Enter BITS Facility

[8] See NOTE 2. Enter the following command to enter the BITS facility:

**ENT-BITS:[tid]:aid:[ctag]::[EQLZ=a,LINECDE=b,FMT=c]:[pst];**

where: aid = SYNCPRI Primary sync reference  
          SYNCSEC Secondary sync reference

a = *For 22 gauge:* Enter distance in feet (0 to 655) to DS1 cross-connect or interconnecting equipment

= *For 26 gauge:*

Enter: **0** for 0-50 feet

**200** for 51-100 feet

**300** for 101-200 feet

**500** for 201-300 feet

**600** for 301-450 feet

b = AMI (default) Alternate Mark Inversion for DS1 line code (LINECDE)

= B8ZS Bipolar with 8-Zero Substitution for DS1 line code (LINECDE)

c = SF (default) Super Frame framing format (FMT)

= ESF Extended Super Frame framing format (FMT)

pst = IS (default) Place facility into in-service state after completing command

OOS Place facility into out-of-service state for provisioning activity

MA Memory administration (synonymous with OOS)

MT Place facility into maintenance state (OOS-MT)

---

**NOTE: 2.** To enter SYNCPRI, the CLK-A unit must be installed and assigned (entered). To enter SYNCSEC, the CLK-B unit must be installed and assigned (see DLP-204).

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 6 of 8	200

## Remove BITS Facility from Service (Place Facility into Maintenance State)

[9] See NOTE 3. Enter the following command:

**RMV-BITS:[tid]:aid:[ctag];**

where: aid = SYNCPRI (primary sync reference)  
          SYNCSEC (secondary sync reference)  
          ALL (both SYNCPRI and SYNCSEC)

---

## Restore BITS Facility to Service (Restore from Maintenance State)

[10] See NOTE 4. Enter the following command:

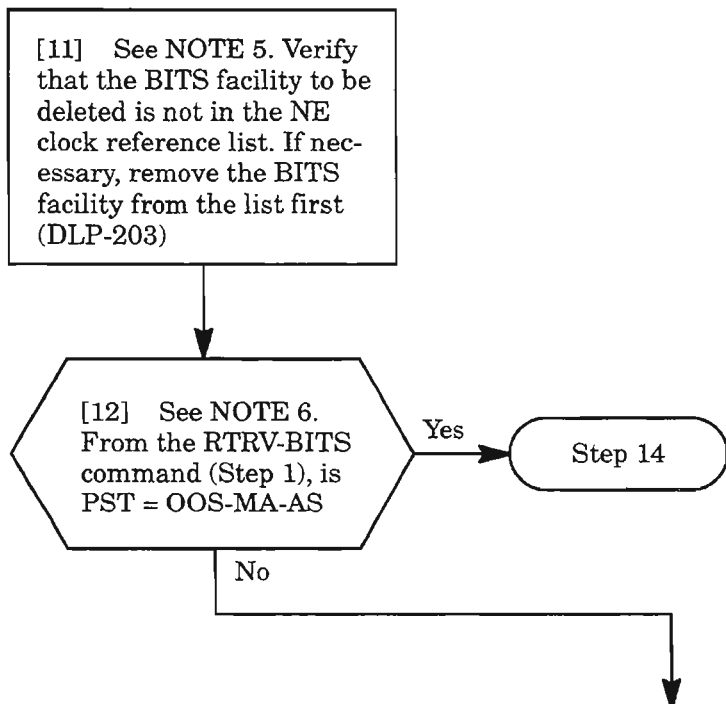
**RST-BITS:[tid]:aid:[ctag];**

where: aid = SYNCPRI (primary sync reference)  
          SYNCSEC (secondary sync reference)  
          ALL (both SYNCPRI and SYNCSEC)

**NOTES:** 3. *The RMV-BITS command disables alarm reporting but does not interrupt service.*

4. *The facility will attempt to return to In-Service state (IS) when this command is entered.*

## Delete BITS Facility




---

[13] Enter the following command to place the facility in OOS-MA-AS state:

**ED-BITS:[tid]:aid:[ctag]:::MA;**

where: aid = SYNCPRI (primary sync reference)  
 SYNCSEC (secondary sync reference)  
 ALL (both SYNCPRI and SYNCSEC)

---

**AND**

---

[14] Enter the command:

**DLT-BITS:[tid]:aid:[ctag];**

where: aid = SYNCPRI (primary sync reference)  
 SYNCSEC (secondary sync reference)  
 ALL (both SYNCPRI and SYNCSEC)

---

**NOTES:** 5. To delete the BITS facility, it must *not* be in the clock reference list for the NE (see RTRV-SYNCN command).

6. To delete the BITS facility, it must be in OOS-MA-AS state.

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 8 of 8	200

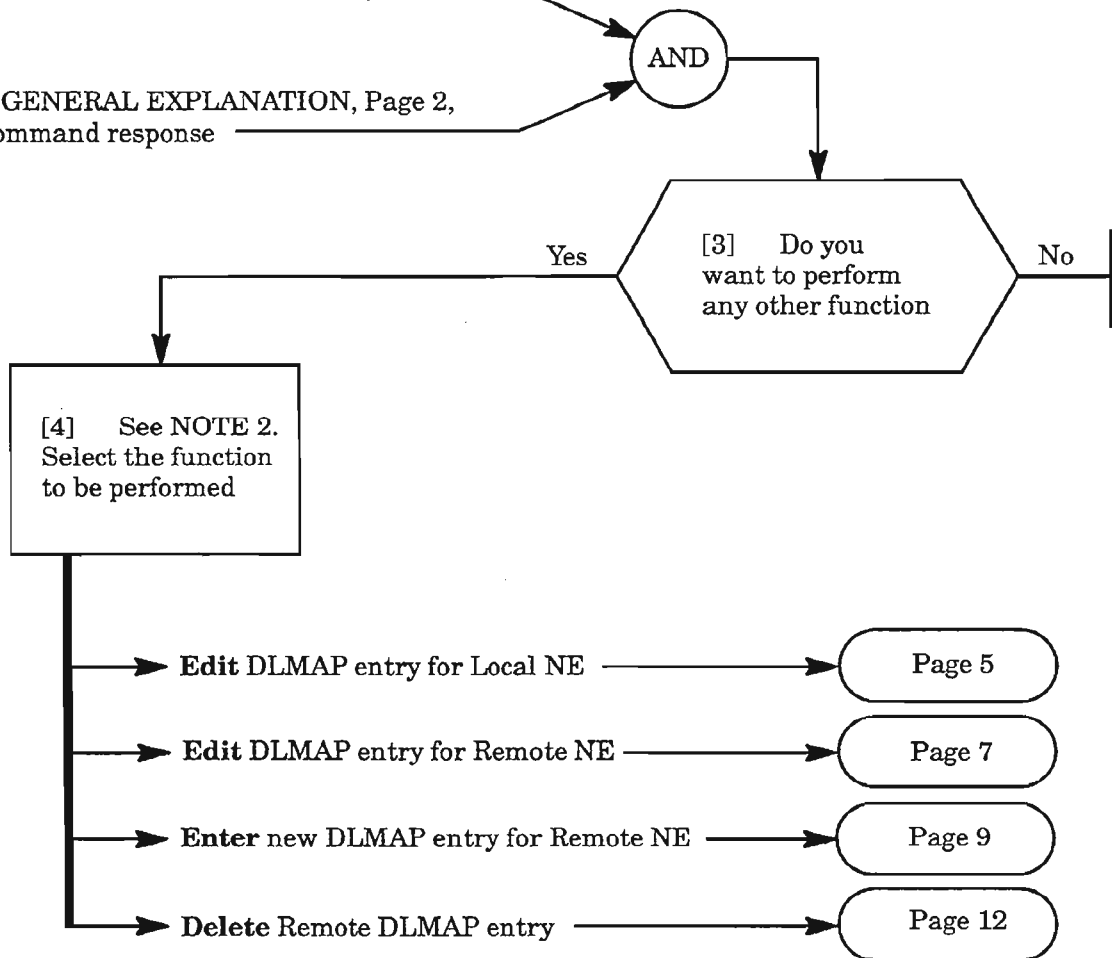


[1] See NOTE 1. Enter the following command to retrieve the Network Element (NE) DLMAP entries:

**RTRV-DLMAP:[tid]:netid:[ctag];**

where: netid = Network Identification (name) of NE of interest (1-20 alphanumeric characters). (Enter ALL for all DLMAP entries)

[2] See GENERAL EXPLANATION, Page 2, of command response



**NOTES:** 1. Each NE has a provisionable Data Link Map (DLMAP) data base with entries made for itself and other (remote) NEs that it communicates with. Features such as remote login, Centralized Autonomous Message Reporting (CAMR), far-end alarm display and Concentrated Serial E2A require proper DLMAP entries at the NEs providing these features. The DLMAP entry for each remote NE includes the name of the NE (netid) and the communication path(s) to the NE. The communication paths to a remote NE are expressed in terms of the Primary and Alternate Network Access Ports.

2. Select "local NE" if entering DLMAP information for the NE logged into [netid = name (tid) of NE being provisioning]. Select "remote NE" if entering data for a remote NE and the connection to the remote NE (netid = tid of remote NE).

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 1 of 12	201

**GENERAL EXPLANATION  
"RTRV-DLMAP"**

**RESPONSE**

```

M          SID year-month-day hr:min:sec
          ctag COMPLD
          /* RTRV-DLMAP:[tid]:netid:[ctag]; */
          "netid::dlmapr_nblk"
    
```

**WHERE**

**netid** Network Identification or name for network element (1-20 alphanumeric characters)

**dlmapr\_nblk**

List of any of the following expressions (assignments):

**NMODE** Network Mode of entry for NE (netid):

**NMODE = LOCAL** netid is NE generating this response  
**NMODE = REMOTE** netid is a remote NE

**PRIPORT** Primary port for network access to remote NE (netid):

**PRIPORT = LG1** Line Group 1 – OC-3 high speed interface  
**PRIPORT = LG2** Line Group 2 – OC-3 high speed interface  
**PRIPORT = MAINT1** MAINT1 SML port  
**PRIPORT = MAINT2** MAINT2 SML port  
**PRIPORT = NONE** Entry is for local NE

**ALTPORT** Alternate port for network access to remote NE (netid):

**ALTPORT = LG1** Line Group 1 – OC-3 high speed interface  
**ALTPORT = LG2** Line Group 2 – OC-3 high speed interface  
**ALTPORT = MAINT1** MAINT1 SML port  
**ALTPORT = MAINT2** MAINT2 SML port  
**ALTPORT = NONE** No alternate port connection

**REPTRMT** Report remote CAMR autonomous messages (see Figure 1, Page 4):

**REPTRMT = NONE** Local entry, or no autonomous messages are sent or received to/from the remote NE (netid). However, alarm status will be sent to the netid if it polls this NE

**REPTRMT = CONC** The local NE sends autonomous messages to the remote concentrator NE (netid)

**REPTRMT = FCONC** Far end alarm concentrator. The local NE sends autonomous messages and far end alarm status to the concentrator named in netid

**REPTRMT = RMT** The local NE accepts autonomous messages from, and periodically polls the remote NE (netid) for alarm status

**FEDISPNUM** Far end alarm display number:

**FEDISPNUM = 0** No display  
**FEDISPNUM = 1...32** Far end alarm display number

*Continued on next page*

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 2 of 12	201

**GENERAL EXPLANATION (cont)  
"RTRV-DLMAP"**

**RESPONSE**

```

M      SID year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-DLMAP:[tid]:netid:[ctag]; */
      "netid::dlmapr_nblk"
  
```

**WHERE**

**dlmapr\_nblk (cont)**

**NOTE:** *The following parameters provide the network address (Network Service Access Point, NSAP) and the address field encoding for the Network Protocol Address Information (NPAI) as specified for the SONET protocol Network Layer. For details, refer to the 1603/12 SM Commands and Messages Manual.*

**AFI** Authority and Format Identifier: gives the format of the Initial Domain Identifier (IDI) and Domain Specific Part (DSP) of the NSAP address structure:

**AFI = X121-NZS** CCITT X.121 format, first significant digit of IDI is nonzero

**AFI = X121-ZS** CCITT X.121 format, first significant digit of IDI is zero

**AFI = E164-NZS** CCITT E.164 format, first significant digit of IDI is nonzero

**AFI = E164-ZS** CCITT E.164 format, first significant digit of IDI is zero

**AFI = LOCAL** Local IDI format, binary DSP syntax

**DOMNID** = [Domain Identifier: The DOMNID is one part of the IDI. For X.121, it is the Data Country Code (DCC) (3 characters). For E.164, it is ISDN Country Code (CC). If AFI is LOCAL, this field is NONE.]

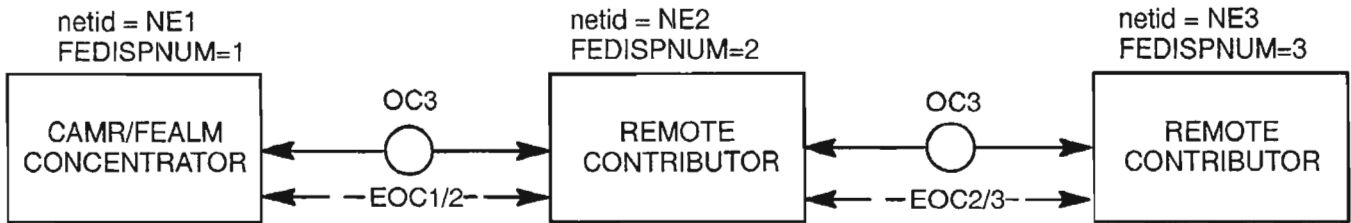
**TERMID** = [Terminal Identifier: This is the second part of the IDI which specifies the subscriber's equipment, or the local subnetwork. It may be 1 to 14 decimal characters. For X.121, it is National Number (NN). For E.164, it consists of two parts: The National Destination Code (NDC) and Subscriber's Number (SN). If AFI is LOCAL, this field is NONE.]

**HODSP** = [High Order DSP: This is the highest order part of the DSP. For X.121 and E.164, HODSP may be 1 to 10 hexadecimal characters. For LOCAL, HODSP may be 1 to 22 hexadecimal characters. Also may be a zero-length string.]

**ID** = [System Identifier: ID is used to uniquely identify an NE within a routing area (the local subnetwork). This is the low order part of the DSP. The System ID must be 6 hexadecimal characters. This parameter can be used to enter the NE address number if AFI = LOCAL.]

**SEL** = [Selector: This field specifies the entity to be communicated with above the network layer. This parameter is meaningful only in the end-system. SEL = 0...255 and it always exists.]

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 3 of 12	201



**RESPONSES FOR RTRV-DLMAP::ALL; COMMAND:**

AT NE1 (CAMR AND FAR END ALARM CONCENTRATOR):

- "NE1::NMODE=LOCAL,FEDISPNUM=1"
- "NE2::NMODE=REMOTE,REPTRMT=RMT,FEDISPNUM=2"
- "NE3::NMODE=REMOTE,REPTRMT=RMT,FEDISPNUM=3"

AT NE2:

- "NE1::NMODE=REMOTE,REPTRMT=FCONC,FEDISPNUM=0"
- "NE2::NMODE=LOCAL,FEDISPNUM=2"
- "NE3::NMODE=REMOTE,REPTRMT=NONE,FEDISPNUM=0"

AT NE3:

- "NE1::NMODE=REMOTE,REPTRMT=FCONC,FEDISPNUM=0"
- "NE2::NMODE=REMOTE,REPTRMT=NONE,FEDISPNUM=0"
- "NE3::NMODE=LOCAL,FEDISPNUM=3"

**NOTES:**

- 1) ONLY PERTINENT PARAMETERS ARE SHOWN IN COMMAND RESPONSES.
- 2) WITH PROVISIONING AS SHOWN, NE1 WILL RECEIVE AUTONOMOUS MESSAGES FROM NE2 AND NE3 AND REPORT RMT (REMOTE) ALARMS (CAMR). ALSO, FAR END ALARM STATUS IS CONCENTRATED BY NE1 FOR ALL NE'S. NE1 PERIODICALLY SENDS OUT THE ALARM STATUS FOR ALL THE NE'S TO EACH NE, WHICH CAN BE RETRIEVED BY PRESSING THE ID SEL BUTTON ON THE COA UNIT AT ANY OF THE NE'S.
- 3) FOR CONVENIENCE AND EASE OF ADMINISTRATION, IF FAR END ALARM REPORTING IS USED, INCLUDE THE FEDISPNUM IN THE NETID (FOR EXAMPLE, NETID=CARY\_SOUTH.10, FEDISPNUM=10.

A8073

**Figure 1. Example Network Showing Responses for RTRV-DLMAP Command at Each NE for CAMR and Far End Alarm Parameters**

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP 201
PAGE 4 of 12	

## Edit DLMAP Entry for Local NE

- [5] Enter the following command with parameters to be changed (only parameters applicable for local NE are listed):

**ED-DLMAP:[tid]:netid,[netid]:[ctag]:::[FEDISPNUM=a,AFI=b,DOMNID=c,TERMID=d,  
HODSP=e,ID=f,SEL=g];**

where: netid = Network Identification or name for NE (1-20 alphanumeric characters)  
The second netid is optional for renaming the netid

- a = For FEDISPNUM (far end alarm display number) the value may be any number 0-32. The 0 is for no display. The 1-32 values correspond to the numbers shown on the COA unit display. (Press ID SEL button on COA unit to display number.) The FEA concentrator holds the master list of NE display numbers (1-32). Enter this parameter for each remote NE at the FEA concentrator, and at each remote NE for itself only.

AFI (Authority Format Identifier) Parameters:

- b = For AFI parameter, enter one of the following:  
X121-NZS (CCITT X.121 format, first significant digit of IDI is nonzero)  
X121-ZS (CCITT X.121 format, first significant digit of IDI is zero)  
E164-NZS (CCITT E.164 format, first significant digit of IDI is nonzero)  
E164-ZS (CCITT E.164 format, first significant digit of IDI is zero)  
LOCAL (Select if not part of Public Data or ISDN network)

IDI (Initial Domain Identifier) Parameters:

- c = For DOMNID (Domain ID) parameter: if AFI is X.121, enter the Data Country Code (DCC). It must be three decimal digits, and the first digit cannot be 0, 1, 8 or 9. For E.164, enter the ISDN Country Code (CC). It is one digit. If AFI is LOCAL, enter NONE
- d = For TERMID (Terminal ID) parameter; if AFI is X.121, enter the National Number (NN) (2 to 11 decimal digits). For E.164, enter the National Destination Code (NDC) followed by the Subscriber's Number (SN) (1 to 14 decimal digits). If AFI is LOCAL, enter NONE

DSP (Domain Specific Part) Parameters:

- e = HODSP (High-Order DSP) string length must be as follows:  
For X.121: 1-10 hexadecimal digits  
For E164: 1-10 hexadecimal digits  
For LOCAL: 1-22 hexadecimal digits  
Enter NONE for zero-length string  
*Note: Be sure the HODSP and ID pair are unique for each NE in the subnetwork.*
- f = ID (System Identifier) to identify the NE within a routing area (subnetwork). The ethernet address of an NE within a LAN may be placed here. This is the low order of the DSP and must be 6 hexadecimal digits. If AFI is LOCAL, enter Network Element address

*Continued on next page*

## Edit DLMAP Entry for Local NE (cont)

DSP (Domain Specific Part) Parameters: (cont)

g = SEL (Selector) field that specifies the entity to be communicated with above the Network Layer in the SONET protocol. This is the last octet of the DSP and always exists. It is only meaningful in the end system. Its range is 0...255



ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 6 of 12	201

## Edit DLMAP Entry for Remote NE

[6] Enter the following command (only include parameters to be modified):

```
ED-DLMAP:[tid]:netid,[netid]:[ctag]:::PRIPORT=a[ALTPORT=b,REPTRMT=c,  
FEDISPNUM=d,AFI=e,DOMNID=f,TERMID=g,HODSP=h,ID=i,SEL=j];
```

where: netid = Network Identification or name for NE (1-20 alphanumeric characters).  
The second netid is optional for renaming the NE

- a = For PRIPORT (Primary port) parameter, enter one of the following ports for network access to the remote NE (netid):
  - LG1 (Line Group 1 – OC-3)
  - LG2 (Line Group 2 – OC-3)
  - MAINT1 (MAINT1 SML port)
  - MAINT2 (MAINT2 SML port) [Future]
- b = For ALTPORT (Alternate port) parameter, enter one of the following ports for network access to the remote NE (netid):
  - LG1 (Line Group 1 – OC-3)
  - LG2 (Line Group 2 – OC-3)
  - MAINT1 (MAINT1 SML port)
  - MAINT2 (MAINT2 SML port) [Future]
  - NONE (No alternate port)
- c = For REPTRMT (Report remote autonomous messages) parameter, enter one of the following (also see Figure 1, Page 4):
  - CONC The local NE sends autonomous messages to the remote concentrator NE (netid)
  - FCONC Far end alarm concentrator. A remote NE uses this value to select an NE to be both CAMR concentrator and Far End Alarm concentrator
  - RMT The local NE accepts autonomous messages from, and periodically polls, the remote NE (netid) for alarm status
  - NONE No autonomous messages are sent or received to/from the remote NE (netid); however, alarm status will be sent to netid if it polls the local NE
- d = For FEDISPNUM (far end alarm display number) the value may be any number 0-32. The 0 is for no display. The 1-32 values correspond to the numbers shown on the COA unit display. (Press ID SEL button on COA unit to display number.) The FEA concentrator holds the master list of NE display numbers (1-32). Enter this parameter for each remote NE at the FEA concentrator, and at each remote NE for itself only.

AFI (Authority Format Identifier) Parameter:

- e = For AFI parameter, enter one of the following:
  - X121-NZS (CCITT X.121 format, first significant digit of IDI is nonzero)
  - X121-ZS (CCITT X.121 format, first significant digit of IDI is zero)
  - E164-NZS (CCITT E.164 format, first significant digit of IDI is nonzero)
  - E164-ZS (CCITT E.164 format, first significant digit of IDI is zero)
  - LOCAL (Select if not part of Public Data or ISDN network)

*Continued on next page*

## Edit DLMAP Entry for Remote NE (cont)

### IDI (Initial Domain Identifier) Parameters:

- f = For DOMNID (Domain ID) parameter: if AFI is X.121, enter the Data Country Code (DCC). It must be three decimal digits and the first digit cannot be 0, 1, 8 or 9. For E.164, enter the ISDN Country Code (CC). It is one digit. If AFI is LOCAL, enter NONE
- g = For TERMID (Terminal ID) parameter: if AFI is X.121, enter the National Number (NN) (2 to 11 decimal digits). For E.164, enter the National Destination Code (NDC) followed by the Subscriber's Number (SN) (1 to 14 decimal digits). If AFI is LOCAL, enter NONE

### DSP (Domain Specific Part) Parameters:

- h = HODSP (High-Order DSP) string length must be as follows:
  - For X.121: 1-10 hexadecimal digits
  - For E164: 1-10 hexadecimal digits
  - For LOCAL: 1-22 hexadecimal digits
  - Enter NONE for zero-length string

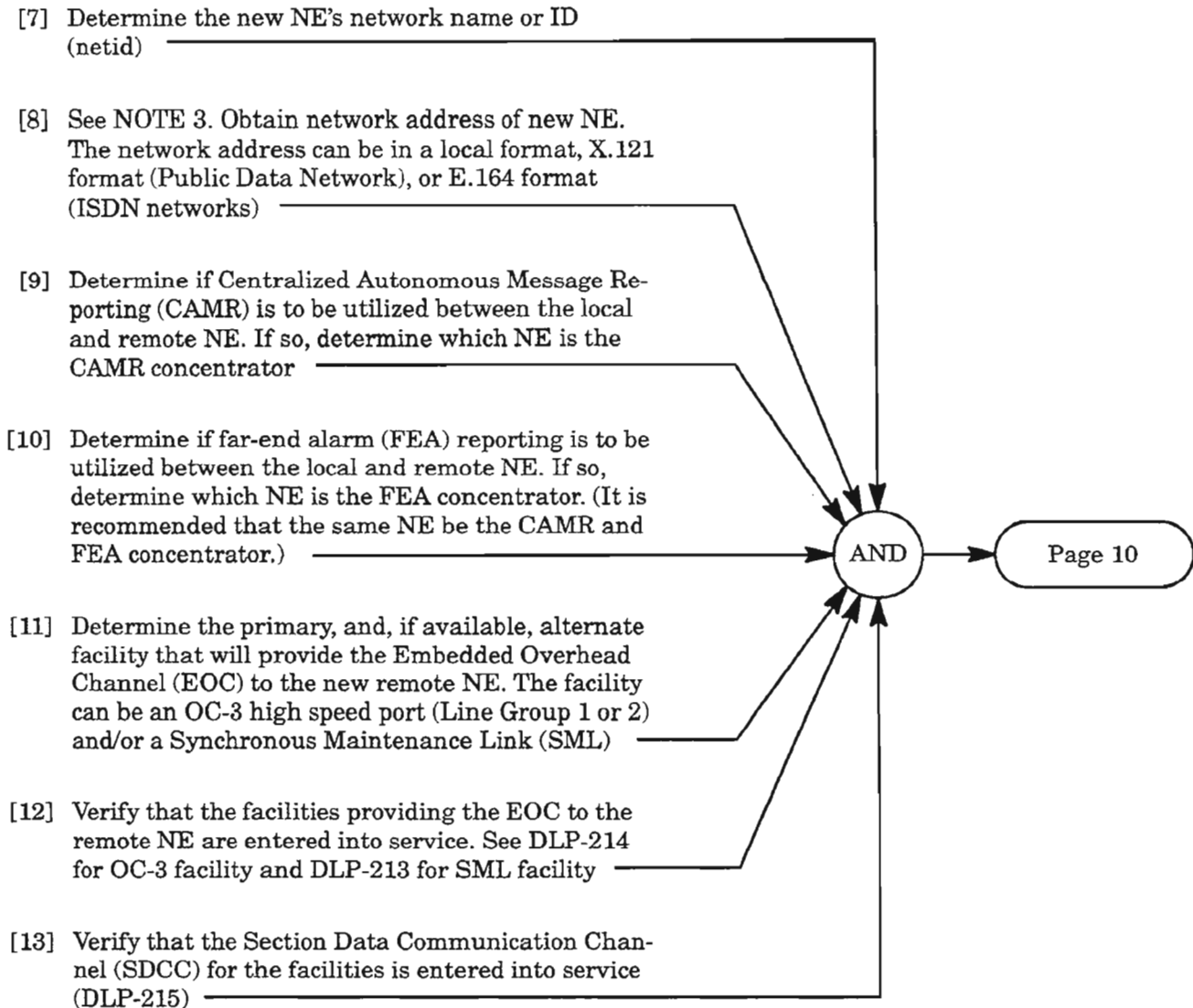
*Note: Be sure the HODSP and ID pair are unique for each NE in the subnetwork.*
- i = ID (System Identifier) to identify the NE within a routing area (subnetwork). The ethernet address of an NE within a LAN may be placed here. This is the low order of the DSP and must be 6 hexadecimal digits. If AFI is LOCAL, enter Network Element address.
- j = SEL (Selector) field that specifies the entity to be communicated with above the Network Layer in the SONET protocol. This is the last octet of the DSP and always exists. It is only meaningful in the end system. Its range is 0...255

---

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 8 of 12	201



## Enter New DLMAP Entry for Remote NE



**NOTE: 3.** Refer to the ENT-DLMAP command in the 1603/12 SM Commands and Messages Manual for more information on network address formats.

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP 201
PAGE 9 of 12	

## Enter New DLMAP Entry for Remote NE (cont)

[14] Enter the following command to add a new entry to the DLMAP data base:

```
ENT-DLMAP:[tid]:netid:[ctag]::PRIPORT=a,ALTPORT=b,REPTRMT=c,FEDISPNUM=d, AFI=e,  
DOMNID=f,TERMID=g,HODSP=h,ID=i,SEL=j;
```

where: netid = Network Identification or name for NE (1-20 alphanumeric characters)

- a = For PRIPORT (Primary port) parameter, enter one of the following ports for network access to the remote NE (netid):
  - LG1 (Line Group 1 – OC-3)
  - LG2 (Line Group 2 – OC-3)
  - MAINT1 (MAINT1 SML port)
  - MAINT2 (MAINT2 SML port) [Future]
- b = For ALTPORT (Alternate port) parameter, enter one of the following ports for network access to the remote NE (netid):
  - LG1 (Line Group 1 – OC-3)
  - LG2 (Line Group 2 – OC-3)
  - MAINT1 (MAINT1 SML port)
  - MAINT2 (MAINT2 SML port) [Future]
  - NONE (No alternate port)
- c = For REPTRMT (Report remote autonomous messages) parameter, enter one of the following (also see Figure 1, Page 4):
  - CONC The local NE sends autonomous messages to the remote concentrator NE (netid)
  - FCONC Far-end alarm concentrator. A remote NE uses this value to select an NE to be both CAMR concentrator and Far-End Alarm concentrator
  - RMT The local NE accepts autonomous messages from, and periodically polls, the remote NE (netid) for alarm status
  - NONE No autonomous messages are sent or received to/from the remote NE (netid); however, alarm status will be sent to netid if it polls the local NE
- d = For FEDISPNUM (far-end alarm display number) the value may be any number 0-32. The 0 is for no display. The 1-32 values correspond to the numbers shown on the COA unit display. (Press ID SEL button on COA unit to display number.) The FEA concentrator holds the master list of NE display numbers (1-32). Enter this parameter for each remote NE at the FEA concentrator, and at each remote NE for itself only.

AFI (Authority Format Identifier) Parameter:

- e = For AFI parameter, enter one of the following:
  - X121-NZS (CCITT X.121 format, first significant digit of IDI is nonzero)
  - X121-ZS (CCITT X.121 format, first significant digit of IDI is zero)
  - E164-NZS (CCITT E.164 format, first significant digit of IDI is nonzero)
  - E164-ZS (CCITT E.164 format, first significant digit of IDI is zero)
  - LOCAL (Select if not part of Public Data or ISDN network)

*Continued on next page*

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 10 of 12	201

## Enter New DLMAP Entry for Remote NE (cont)

### IDI (Initial Domain Identifier) Parameters:

- f = For DOMNID (Domain ID) parameter: if AFI is X.121, enter the Data Country Code (DCC). It must be three decimal digits and the first digit cannot be 0, 1, 8 or 9. For E.164, enter the ISDN Country Code (CC). It is one digit.  
If AFI is LOCAL, enter NONE
- g = For TERMID (Terminal ID) parameter: if AFI is X.121, enter the National Number (NN) (2 to 11 decimal digits). For E.164, enter the National Destination Code (NDC) followed by the Subscriber's Number (SN) (1 to 14 decimal digits). If AFI is LOCAL, enter NONE

### DSP (Domain Specific Part) Parameters:

- h = HODSP (High-Order DSP) string length must be as follows:
  - For X.121: 1-10 hexadecimal digits
  - For E164: 1-10 hexadecimal digits
  - For LOCAL: 1-22 hexadecimal digits
  - Enter NONE for zero-length string

*Note: Be sure the HODSP and ID pair are unique for each NE in the subnetwork.*
- i = ID (System Identifier) to identify the NE within a routing area (subnetwork). The ethernet address of an NE within a LAN may be placed here. This is the low order of the DSP and must be 6 hexadecimal characters. If AFI is LOCAL, enter Network Element address
- j = SEL (Selector) field that specifies the entity to be communicated with above the Network Layer in the SONET protocol. This is the last octet of the DSP and always exists. It is only meaningful in the end system. Its range is 0...255

---

[15] Repeat this procedure at the remote NE and any intermediate NEs in the Primary and Alternate Port paths. Failure to do so will inhibit proper operation of features such as remote login, concentrated Serial E2A, and CAMR. After all DLMAP entries are made at applicable NEs, there should be no DLMAP, EOC, and SE2A alarms. If any alarms exist, interrogate each NE's DLMAP entries to determine which DLMAP entries are incorrect

---

## Delete Remote Entry from DLMAP Data Base

[16] See NOTE 4. Enter the following command to delete a DLMAP entry:

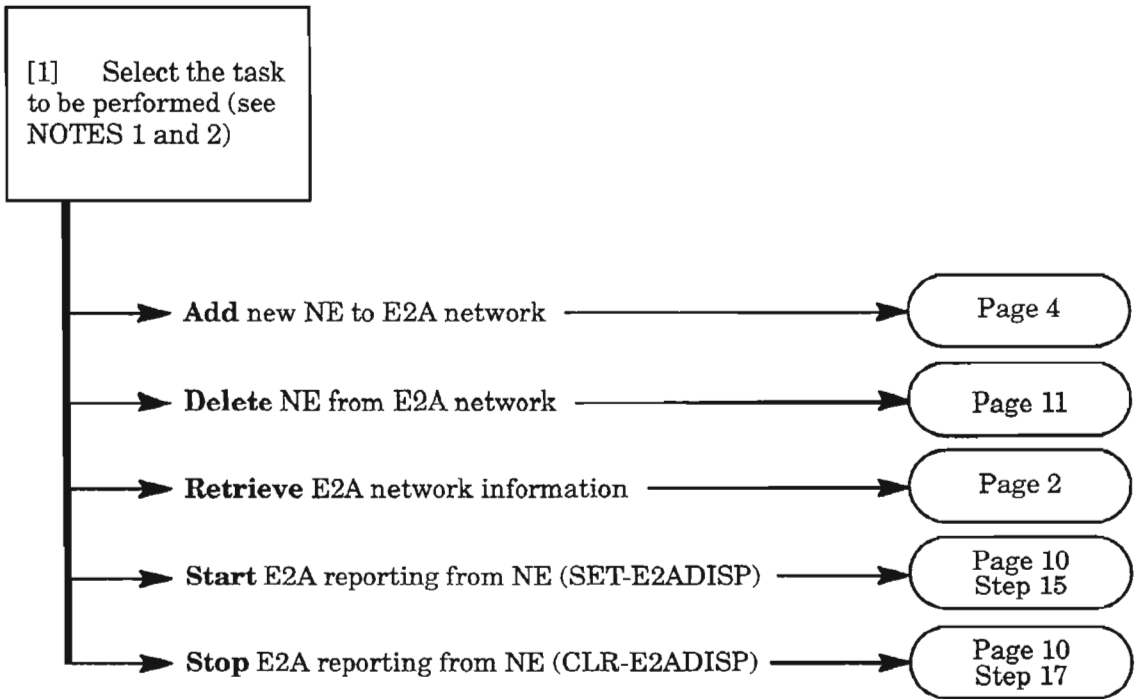
**DLT-DLMAP:[tid]:netid:[ctag];**

where: netid = Name of NE to be deleted from data base (1-20 alphanumeric characters)



**NOTE: 4.** *You cannot delete the local DLMAP entry. Also, if the (remote) DLMAP entry to be deleted is supporting a Serial E2A communication path, the E2A entry must be removed from the NE's data base before the DLMAP entry can be deleted (DLP-202).*

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 12 of 12	201



- NOTES:**
- If you want to change which E2A concentrator Network Element (NE) an E2A contributor reports to, delete the contributor NE from the E2A network and then add the NE back to the network with the new configuration.*
  - Figure 1, Page 5, shows a small SONET network with a superimposed serial E2A network topology. This example network is used to help define the E2A function performed by the NE being added to your network. The boxes in Figure 1 represent SONET NEs and are shown as being interconnected by an Embedded Overhead Channel (EOC). The EOC provides a communications link that is carried over the SONET D1-D3 data communications channel embedded in the OC-3 and Synchronous Maintenance Links (SMLs). The EOC is used to concentrate the E2A data from remote NEs to one or more E2A concentrator NEs at the central office to better utilize the E2A Alarm Reporting Equipment (APR). With the 1603 / 12 SM, the connection to /from the APR is provided by the COA302 or COA402 plug-in typically connected to a local RS-422 / 485 interface to the APR. The RS-422 / 485 interface is shown as a bus on the left side of Figure 1. The APR bus can send and receive E2A data for eight displays maximum, with each NE typically requiring one display. Some NE types (FTS-600, for example) may use more than one E2A display. Note that there are four E2A functions shown in Figure 1 represented by a Roman numeral in the NE boxes. Also note that a summary of the TL-1 commands required to provision the NE type is provided in each NE box.*

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 1 of 13	202

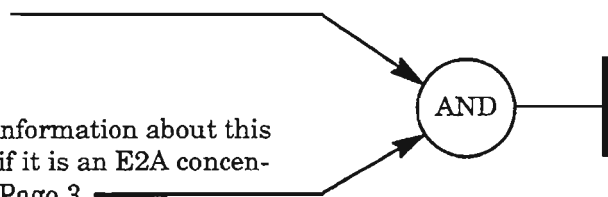
## Retrieve E2A Network Information

[2] Enter command:

**RTRV-E2AMAP:[tid]:aid:[ctag];**

where: aid = 0..7 (E2A display number and address), or  
ALL (all E2A entries)

[3] The response will provide E2A network information about this NE and any NE(s) reporting to this NE, if it is an E2A concentrator. See GENERAL EXPLANATION, Page 3



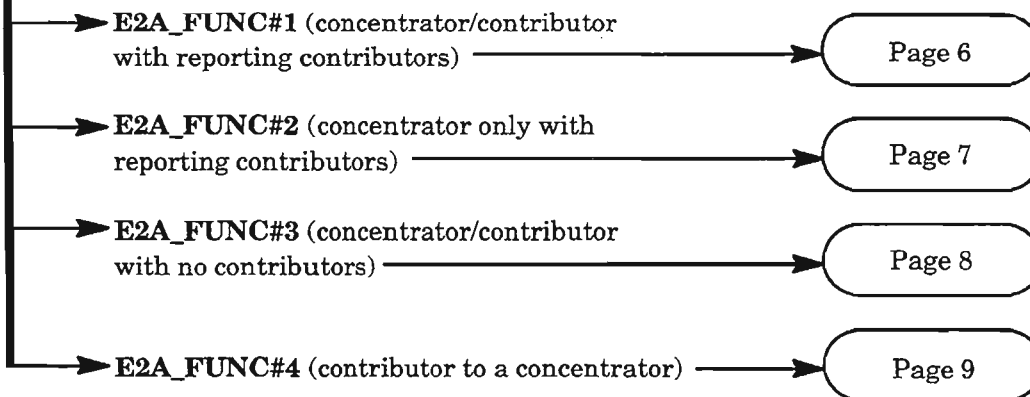
ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 2 of 13	202



## Add New NE to E2A Network

[4] See NOTE 3. If the data link map (DLMAP) has not been entered into the new NE, do so before continuing (DLP-201). There should be no DLMAP alarms before continuing

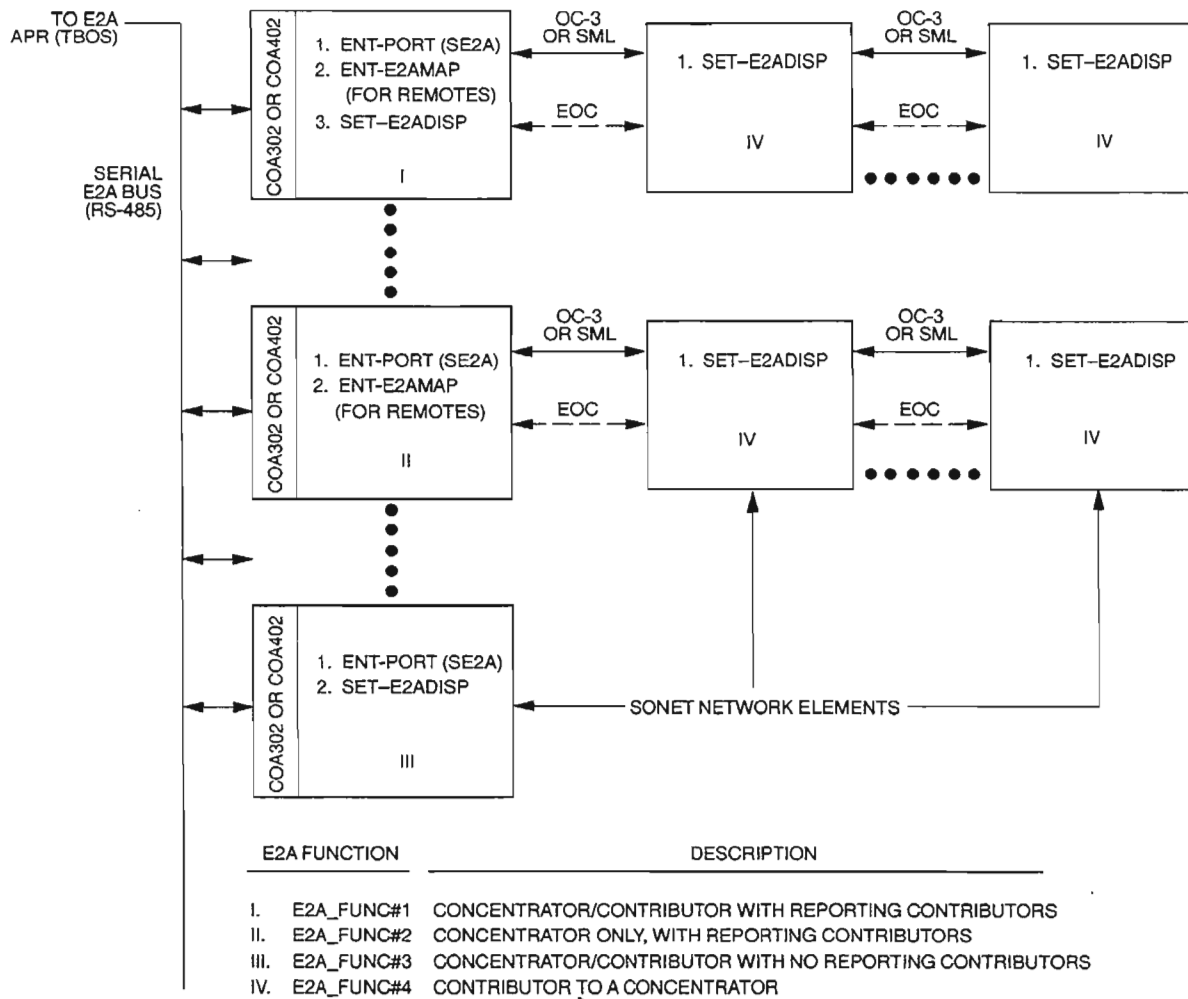
[5] From the example E2A network shown in Figure 1, Page 5, determine which E2A function (1, 2, 3 or 4) the new NE will perform



**NOTE: 3.** *The Concentrated E2A feature requires that the proper DLMAP entries be made at all NEs in the network between the remote contributors and the E2A concentrator so each NE knows how to access each other. Refer to DLP-201 before continuing, if necessary.*

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 4 of 13	202





A7060Rev3

Figure 1. E2A Network Showing Four Possible E2A Functions and Command Summary

## Add E2A\_FUNC#1 (Concentrator/Contributor with Reporting Contributors)

[6] Enter the following command to initialize the serial E2A port on the COA302 or COA402 plug-in:

**ENT-PORT:[tid]:SE2A:[ctag]::::!S;**

The port parameters are fixed as follows:

BAUD = 2400  
BITS = 8  
PAR = ODD  
SBITS = 2  
LWID = 80  
TYPE = TTY  
ECHO = N (no, half-duplex)

---

**AND**

---

[7] See NOTE 4. Enter the following command for each contributor NE (E2A display) that will be reporting to this NE:

**ENT-E2AMAP:[tid]:aide2a:[ctag]:::rmtid;**

where: aide2a = E2A address (0-7) of contributor NE (should match E2A display number provisioned at the contributor NE)

rmtid = The tid of the contributor NE (1-20 alphanumeric characters)

---

**AND**

---

[8] Enter the following command to enter the NE's E2A display number and the concentrator's tid (in this case, this NE is the concentrator for itself):

**SET-E2ADISP:[tid]::[ctag]::dispnum,[conctid];**

where: dispnum = E2A display number (0-7) of NE (should match E2A address of NE)

conctid = The tid of the concentrator NE (1-20 alphanumeric characters). In this case, this NE is the concentrator for itself; therefore, it is not required

---

**NOTE: 4.** *In this command, if the contributor NE has more than one E2A display (e.g., FTS-600 has two displays), the command should be repeated for each display, with the E2A address (aide2a) matching the E2A display (e2Adisp) at the contributor NE.*

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 6 of 13	202

## Add E2A\_FUNC#2 (Concentrator Only, with Reporting Contributors)

[9] Enter the following command to initialize the serial E2A port on the COA302 or COA402 plug-in:

**ENT-PORT:[tid]:SE2A:[ctag]::::IS;**

The port parameters are fixed as follows:

BAUD = 2400  
BITS = 8  
PAR = ODD  
SBITS = 2  
LWID = 80  
TYPE = TTY  
ECHO = N (no, half-duplex)

---

AND

---

[10] See NOTE 5. Enter the following command for each contributor NE (E2A display) that will be reporting to this NE:

**ENT-E2AMAP:[tid]:aide2a:[ctag]:::rmtid;**

where: aide2a = E2A address (0-7) of contributor NE (should match E2A display number provisioned at contributor NE)

rmtid = The tid of the contributor NE (1-20 alphanumeric characters)

---

**NOTE: 5.** *In this command, if the concentrator NE has more than one E2A display (e.g., FTS-600 has two displays), the command should be repeated for each display, with the E2A address (aide2a) matching the E2A display (e2Adisp) at the contributor NE.*

## Add E2A\_FUNC#3 (Concentrator/Contributor with No Reporting Contributors)

[11] Enter the following command to initialize the serial E2A port on the COA302 or COA402 plug-in:

**ENT-PORT:[tid]:SE2A:[ctag]:::IS;**

The port parameters are fixed as follows:

BAUD = 2400  
BITS = 8  
PAR = ODD  
SBITS = 2  
LWID = 80  
TYPE = TTY  
ECHO = N (no, half-duplex)

---

**AND**

---


[12] Enter the following command to enter the NE's E2A display number and the concentrator's tid (in this case, this NE is the concentrator for itself):

**SET-E2ADISP:[tid]::[ctag]::dispnum,[conctid];**

where: dispnum = E2A display number (0-7) of NE (should match E2A address)

conctid = The tid of the contributor NE (1-20 alphanumeric characters).  
In this case, this NE is the concentrator for itself; therefore, it is not required

---



ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 8 of 13	202

## Add E2A\_FUNC#4 (Contributor to a Concentrator)

[13] Enter the following command to enter the NE's E2A display number and the concentrator's tid:

**SET-E2ADISP:[tid]::[ctag]::dispnum,conctid;**

where: dispnum = E2A display number (0-7) of NE (should match E2A address)

conctid = The tid of the concentrator NE (1-20 alphanumeric characters)

---

**AND**

---

[14] If not already done, enter the following command at the concentrator NE to which this NE reports:

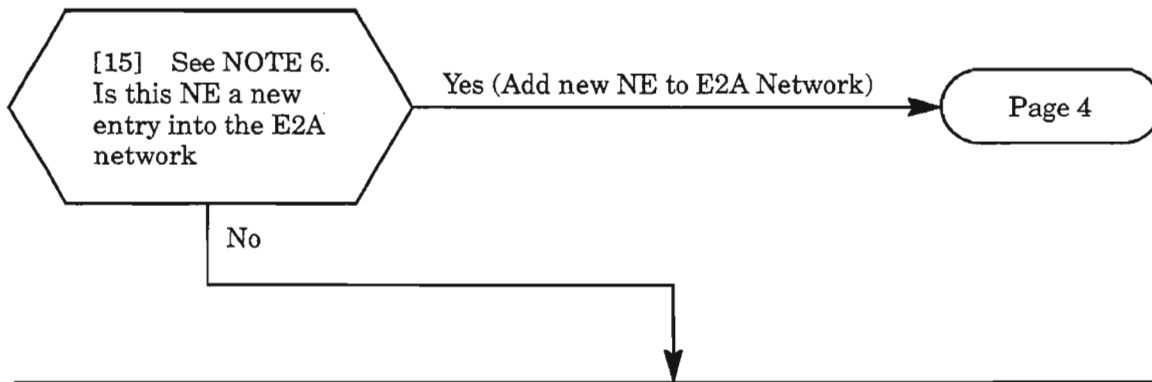
**ENT-E2AMAP:[tid]:aide2a:[ctag]:::rmtid;**

where: aide2a = E2A address (0-7) of this contributor NE (should match E2A display number provisioned at contributor NE in previous step):

rmtid = The tid of the contributor NE (1-20 alphanumeric characters)



## Start E2A Reporting from an NE



[16] See NOTE 7. Log on to the NE to start reporting and enter the following command:

**SET-E2ADISP:[tid]::[ctag]::dispnum,[conctid];**

where: dispnum = E2A display number (0-7) of NE (should match E2A address at concentrator, if applicable)

conctid = The tid of the concentrator NE (1-20 alphanumeric characters).

If this NE is the concentrator for itself (E2A\_FUNC#1 or E2A\_FUNC#3 in Figure 1, Page 5), this parameter is not required

---

## Stop (Cancel) E2A Reporting From an NE

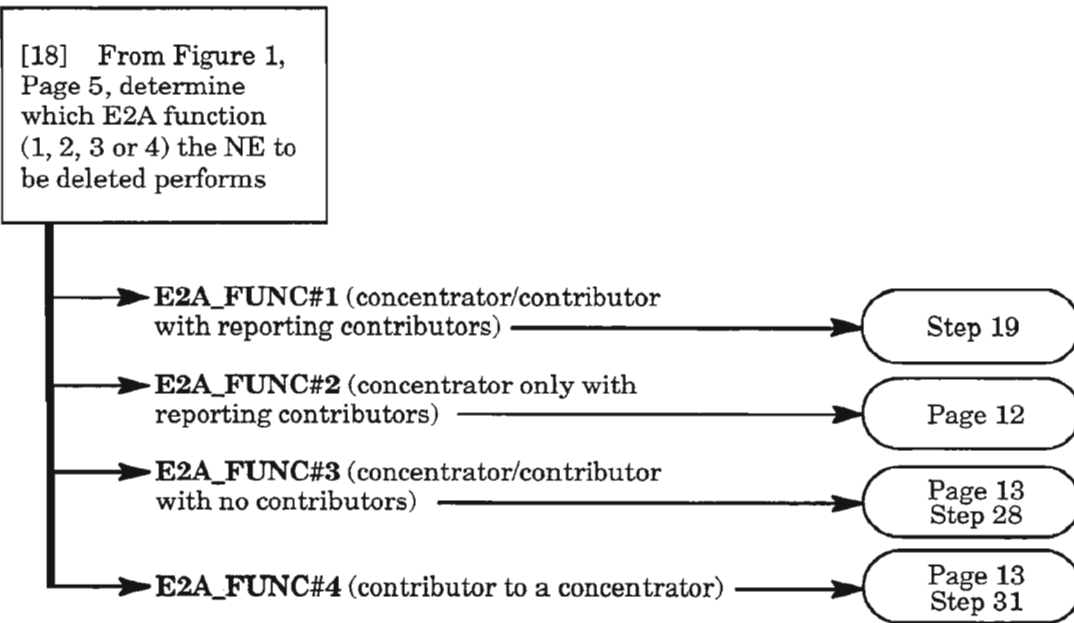
[17] See NOTE 8. Log on to the NE to stop reporting and enter the following command:

**CLR-E2ADISP:[tid]::[ctag];**

- 
- NOTES:**
6. Perform this procedure only if the NE has been already provisioned into the E2A network (i.e., it has been entered into its concentrator's E2A map or its E2A port has been connected).
  7. This procedure assumes that this NE's E2A address has been entered into the E2A map at the concentrator NE, if this NE reports to a remote concentrator.
  8. If the NE is a contributor (E2A function #4 in Figure 1, Page 5) to an E2A concentrator, the concentrator continues to poll the NE after the following command is entered at the contributor NE. If you want to stop polling, also, perform "delete NE from E2A network" for E2A function #4 (Page 13, Step 31).

ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 10 of 13	202

## Delete NE from E2A Network



### Delete NE from E2A\_Network (E2A\_FUNC#1)

[19] Log on to the (concentrator) NE to be deleted from E2A network and enter the following command:

**CLR-E2ADISP:[tid]::[ctag];**

[20] Enter the following command for each of the contributors reporting to this NE:

**DLT-E2AMAP:[tid]:aide2a:[ctag];**

where: aide2a = E2A address (0-7) of contributor NE

[21] Enter the following command to edit the state of the E2A port on the COA302 plug-in:

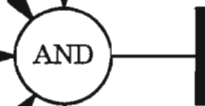
**ED-PORT:[tid]:SE2A:[ctag]:::MA;**

[22] Enter the following command to disconnect the E2A port on the COA302 plug-in:

**DLT-PORT:[tid]:SE2A:[ctag];**

[23] If not already done, log on to each contributor NE and enter the following command:

**CLR-E2ADISP:[tid]::[ctag];**



## Delete NE from E2A Network (E2A\_FUNC#2)

- [24] Log on to the concentrator NE to be deleted and enter the following command for each of the contributors reporting to this NE:

**DLT-E2AMAP:[tid]:aide2a:[ctag];**

where: aide2a = E2A address (0-7) of the contributor NE

- [25] Enter the following command to edit the state of the E2A port on the COA302 or COA402 plug-in:

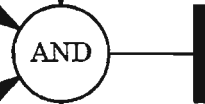
**ED-PORT:[tid]:SE2A:[ctag]:::MA;**

- [26] Enter the following command to disconnect the E2A port on the COA302 or COA402 plug-in:

**DLT-PORT:[tid]:SE2A:[ctag];**

- [27] If not already done, log on to each contributor NE and enter the following command:

**CLR-E2ADISP:[tid]::[ctag];**



ISSUE 2	OCT 1994
ALCL 363-203-502	DLP
PAGE 12 of 13	202



### Delete NE from E2A Network (E2A\_FUNC#3)

[28] Log on to the NE to be deleted from E2A network and enter the following command:

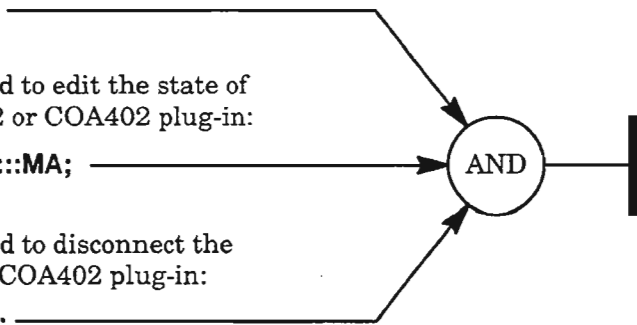
**CLR-E2ADISP:[tid]::[ctag];**

[29] Enter the following command to edit the state of the E2A port on the COA302 or COA402 plug-in:

**ED-PORT:[tid]:SE2A:[ctag]:::MA;**

[30] Enter the following command to disconnect the E2A port on the COA302 or COA402 plug-in:

**DLT-PORT:[tid]:SE2A:[ctag];**



---

### Delete NE from E2A Network (E2A\_FUNC#4)

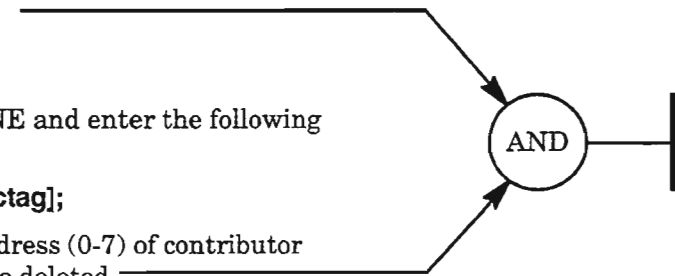
[31] Log on to the NE to be deleted from E2A network and enter the following command:

**CLR-E2ADISP:[tid]::[ctag];**

[32] Log on to the concentrator NE and enter the following command:

**DLT-E2AMAP:[tid]:aide2a:[ctag];**

where: aide2a = E2A address (0-7) of contributor  
NE to be deleted



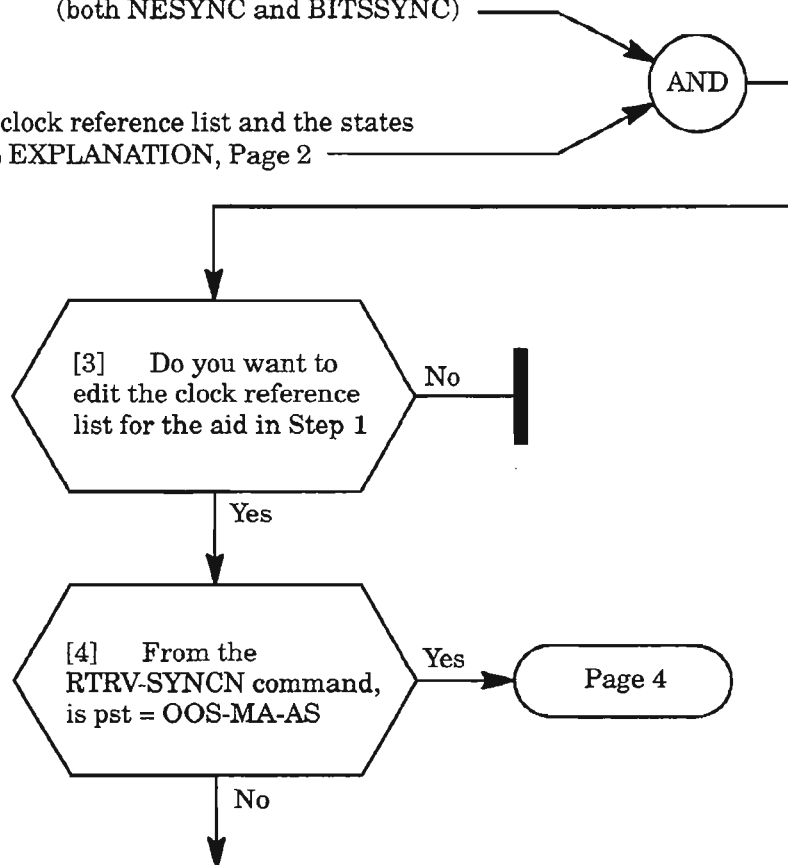


[1] See NOTE 1. Enter command:

**RTRV-SYNCN:[tid]:aid:[ctag];**

where: aid = NESYNC Clock (sync reference) list for NE, or  
BITSSYNC Clock reference list for BITS output  
ALL (both NESYNC and BITSSYNC)

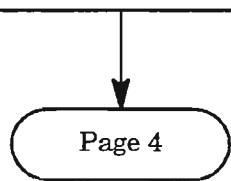
[2] The response provides the clock reference list and the states for the aid. See GENERAL EXPLANATION, Page 2



[5] Enter the following command to change the primary state of the aid:

**ED-SYNCN:[tid]:aid:[ctag]::::MA;**

where: aid = NESYNC Clock (sync reference) list for NE, or  
BITSSYNC Clock reference list for BITS output (SYNC OUT)



**NOTE: 1.** Before any clock synchronization, ENT-EQPT (Clock, DLP-204) must be entered, and any clock source placed in the reference list must be entered (assigned) using the ENT command for that facility [e.g., ENT-OC3 for LG1 or LG2 (DLP-214), and ENT-BITS for SYNCPRI or SYNCSEC (DLP-200)].

**GENERAL EXPLANATION  
"RTRV-SYCN"**

**RESPONSE**

```

M      SID year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-SYCN:[tid]:aid:[ctag]; */
      "aid:[syncn_nblk]:pst,[sst],[ast];"
  
```

**WHERE**

**aid**            **NESYNC**      NE (clock reference) list, or  
**BITSSYNC**      BITS output sync reference list

**[syncn\_nblk]**   Synchronization (clock) reference list entities with sync source assignments for the selected sync list (aid):

**PRICREF = \***                      (Primary sync reference)  
**SECREP = \***                        (Second sync reference)  
**THIRDCREF = \***                    (Third sync reference) (NESYNC only)  
**FOURTHCREF = \***                  (Fourth sync reference) (NESYNC only)  
**FIFTHCREF = \***                    (Fifth sync reference) (NESYNC only)

\* For aid = NESYNC, available sync sources for each sync list entity are:

**SYNCPRI**                      Primary SYNC BITS input  
**SYNCSEC**                      Secondary SYNC BITS input  
**LG1**                              Line Group 1  
**LG2**                              Line Group 2  
**DG1-1**                          Drop Group 1 - Facility 1  
**DG2-1**                          Drop Group 2 - Facility 1  
**DG3-1**                          Drop Group 3 - Facility 1  
**INT**                              Internal Clock (default for PRICREF)

\* For aid = BITSSYNC, available sync sources for each sync list entity are:

**LG1**                              Line Group 1  
**LG2**                              Line Group 2  
**DG1-1**                          Drop Group 1 - Facility 1  
**DG2-1**                          Drop Group 2 - Facility 1  
**DG3-1**                          Drop Group 3 - Facility 1  
**NEREF**                          BITS output is same sync source NE is synced to (default for PRICREF)

**pst**            Primary state (condition) of the sync list (data base):

**IS-NR**                      Sync list is in-service and normal

**IS-ANR**                    Sync list is in-service but an abnormal condition exists. It may be able to perform all or only part of its designed service function (e.g., due to degrade)

**OOS-MA-AS**                Out-of-service state for provisioning activity; sync list data base is assigned (default state when at least one CLK plug-in is entered/assigned)

**OOS-MA-UAS**              Out-of-service state for provisioning activity; sync list data base is not assigned (default state when no CLK plug-ins are entered/assigned)

*Continued on next page*

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 2 of 4	203

**PROVISION CLOCK REFERENCE LIST FOR  
SYNCHRONIZATION OF NE OR BITS OUTPUT**

**GENERAL EXPLANATION (cont)  
"RTRV-SYCN"**

**RESPONSE**

M           SID year-month-day hr:min:sec  
          ctag COMPLD  
          /\* RTRV-SYCN:[tid]:aid:[ctag]; \*/  
          "aid:[syncn\_nblk]:pst,[sst],[ast];"

**WHERE**

[sst]       Secondary state:

<b>ACT</b>	Active; this facility is providing service
<b>AINS</b>	Automatic In Service
<b>APSI</b>	Automatic Protection Switch Inhibited
<b>BOOT</b>	Processor running bootcode
<b>DX</b>	Duplex configuration
<b>EQ</b>	Equipped; CLK plug-in(s) present
<b>FLT</b>	Fault; facility is OOS-MT because it is faulty
<b>FRCD</b>	Forced
<b>MAN</b>	Manual; facility has been manually taken OOS for maintenance activities
<b>MEA</b>	Mismatch of equipment and attributes
<b>OVFL</b>	Overflow; for the LOG and Database Capture Buffer (DBC) objects that are not provisioned with wrap buffer, this indicates that the object has depleted its memory resources
<b>PROT</b>	Protection
<b>PWR</b>	Power; the entity is OOS because it has no power
<b>STBY</b>	Standby side
<b>SWDL</b>	Software downloaded
<b>SWVERR</b>	Software version error
<b>SX</b>	Simplex configuration
<b>TB</b>	Diagnostic test busy
<b>TSTF</b>	Test failure; the object is OOS because of a test failure
<b>UEQ</b>	Unequipped; CLK plug-in(s) absent
<b>WORK</b>	Working facility

[ast]       Associated state:

<b>FAF</b>	Facility failure; the associated supporting facility is OOS
<b>FEF</b>	Family of Equipment Failure; the associated controlling equipment failed
<b>UEA</b>	Underlying Entity Abnormal; the associated containing supporting entity is IS-ANR or OOS

[6] See NOTE 2. Enter the following command assigning the clock references as required:

**ED-SYCN:[tid]:aid:[ctag]::PRICREF=csrc1,SECREf=csrc2[,THIRDCREF=csrc3,  
FOURTHCREF=csrc4,FIFTHCREF=csrc5]:[pst];**

where: aid = NESYNC Clock (sync reference) list for NE, or  
BITSSYNC Clock reference list for BITS output (SYNC OUT)

csrcX = Available clock sources:

For aid = NESYNC, clock sources for each clock list entity are:  
SYNCPRI Primary SYNC BITS input (SYNC PRI)  
SYNCSEC Secondary SYNC BITS input (SYNC SEC)  
LG1 Line Group 1  
LG2 Line Group 2  
DG1-1 Drop Group 1 - Facility 1  
DG2-1 Drop Group 2 - Facility 1  
DG3-1 Drop Group 3 - Facility 1  
INT Internal clock (default for PRICREF)

For aid = BITSSYNC, clock sources for each clock list entity are:  
LG1 Line Group 1  
LG2 Line Group 2  
DG1-1 Drop Group 1 - Facility 1  
DG2-1 Drop Group 2 - Facility 1  
DG3-1 Drop Group 3 - Facility 1  
NEREF BITS output is same clock source NE is synchronized to  
(default for PRICREF)

pst = IS The clock list being edited is to be In-Service upon completion  
of the editing command  
OOS The clock list is Out-Of-Service for provisioning activities.  
The clock list must be placed in this state before modifying  
its parameters (see Step 5, Page 1)  
MA Memory Administration (synonymous with OOS)  
(null) If pst is not specified, the primary state of the clock list  
remains unchanged after the command is executed

---

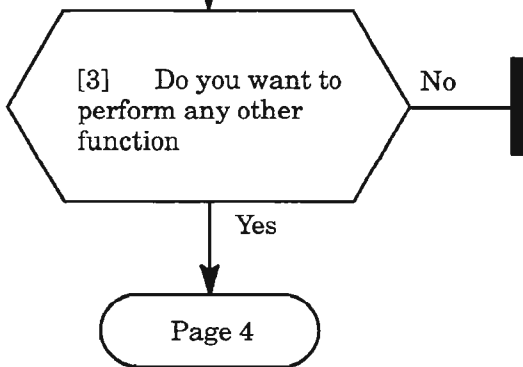
**NOTE: 2.** For aid = NESYNC, no other clock sources are allowed in the clock list after INT (internal clock). For aid = BITSSYNC, only up to two clock references (PRICREF and SECREf) are allowed, and no other clock sources are allowed in the clock list after NEREF.

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 4 of 4	203

**PROVISION CLOCK REFERENCE LIST FOR  
SYNCHRONIZATION OF NE OR BITS OUTPUT**

[1] Enter command:  
**RTRV-EQPT:[tid]:aid:[ctag];**  
where: aid = CLK (Clock units A and B)  
          CLKA (Clock unit A)  
          CLKB (Clock unit B)

[2] See GENERAL EXPLANATION, Page 2, for the provisionable parameters and states for the aid



**GENERAL EXPLANATION**  
**"RTRV-EQPT (CLK)"**

**RESPONSE**

```

M      SID year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-EQPT:[tid]:aid:[ctag]; */
      "aid:eqpttype,[compat]:[eqpt_nblk]:pst,[sst],[ast]"
  
```

**WHERE**

<b>aid</b>	<b>CLKA</b> (CLK-A) <b>CLKB</b> (CLK-B)
<b>eqpttype</b>	<b>CLK201, CLK202</b> Type of equipment (plug-in code) entered
<b>compat</b>	<b>CLK201, CLK202</b> Equipment codes that are compatible with software installed
<b>eqpt_nblk</b>	List of the following expression (assignment): Revertive switching mode (RVRTV): <b>RVRTV = N</b> Nonrevertive switching, or <b>RVRTV = Y</b> Revertive switching allowed
<b>pst</b>	Primary state (condition) of the aid: <b>IS-NR</b> Equipment is in-service and normal <b>IS-ANR</b> Equipment is in-service but an abnormal condition exists. It may be able to perform all or only part of its designed service function (e.g., due to degrade) <b>OOS-MA-AS</b> Out-of-service state for provisioning activity; equipment is assigned <b>OOS-MA-UAS</b> Out-of-service state for provisioning activity; equipment is not assigned <b>OOS-MT</b> Out-of-service state for maintenance activity such as fault, performance monitoring or testing; equipment is assigned
<b>sst</b>	Secondary state of the aid: <b>ACT</b> Active; this equipment is currently providing service (not standby) <b>AINS</b> Automatic In-service; the equipment is automatically placed In-Service (pst = IS) when plugged in <b>APSI</b> Automatic Protection Switch inhibited; for a protected entity, it is equivalent to lock-on. For a protecting entity, it is equivalent to lock-out <b>BOOT</b> Processor running bootcode <b>DX</b> Configuration is duplex <b>EQ</b> Equipped; the entity (aid) is equipped with the necessary equipment (plugged in) <b>FLT</b> Fault; the equipment is OOS-MT because it is faulty <b>FRC</b> Forced; change of state was forced <b>MAN</b> Manual; the equipment has been manually taken OOS-MT for maintenance activities

*Continued on next page*

ISSUE 3	OCT 1994
ALCL 363-203-502	DLP
PAGE 2 of 9	204



**GENERAL EXPLANATION(cont)  
"RTRV-EQPT (CLK)"**

**RESPONSE**

M SID year-month-day hr:min:sec  
 ctag COMPLD  
 /\* RTRV-EQPT:[tid]:aid:[ctag]; \*/  
 "aid:eqpttype,[compat]:[eqpt\_nblk]:pst,[sst],[ast]"

**WHERE**

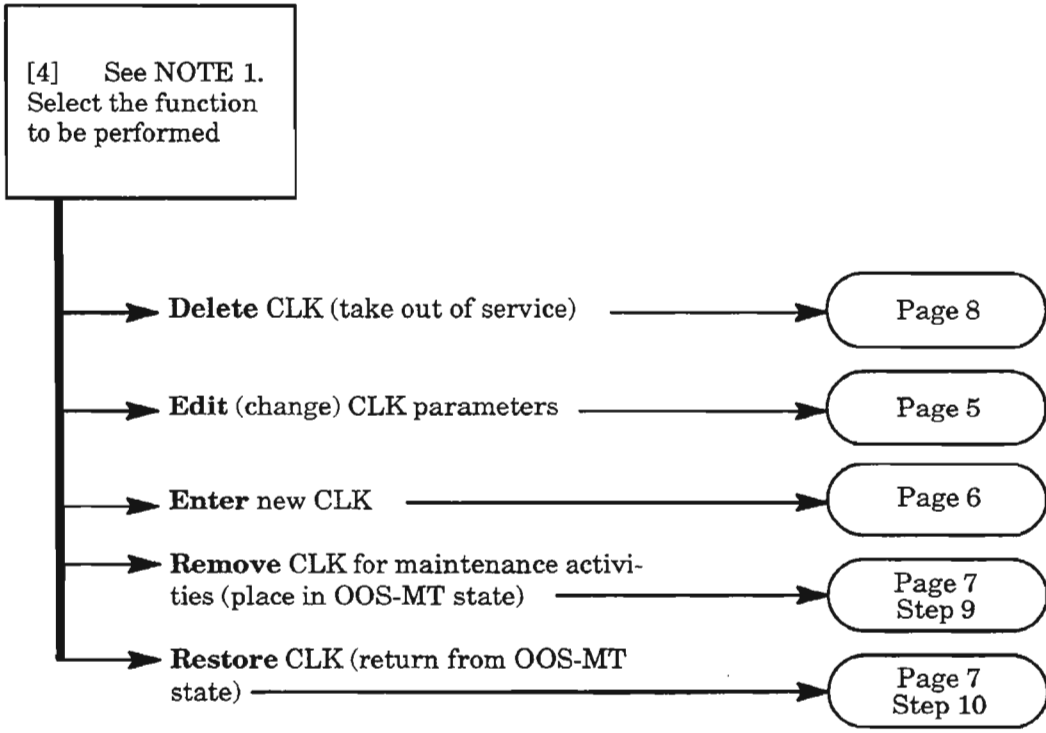
**sst** Secondary state of the aid: (cont)

- MEA** Mismatch of equipment and attributes; the installed equipment does not match the provisioned equipment
- OVFL** Overflow; for the LOG and Database Capture Buffer (DBC) objects that are not provisioned with wrap buffer, this indicates that the object has depleted its memory resources
- PROT** Entity (aid) is protection (not working) side
- PWR** Power; entity (aid) is OOS-MT because it has no power
- STBY** Standby; this entity (aid) is not active
- SX** Configuration is simplex
- TB** Diagnostic test busy
- TSTF** Test failure; the equipment is OOS-MT because of test failure
- UEQ** Unequipped; the entity (aid) is not equipped with the necessary equipment
- WORK** Entity is working side

**ast** Associated state of the aid:

- FAF** Facility failure; associated supporting facility is OOS
- FEF** Family of equipment failure; associated controlling equipment is OOS
- UEA** Underlying Entity Abnormal; the associated supporting entity is IS-ANR or OOS

ISSUE 3	OCT 1994
ALCL 363-203-502	DLP
PAGE 3 of 9	204



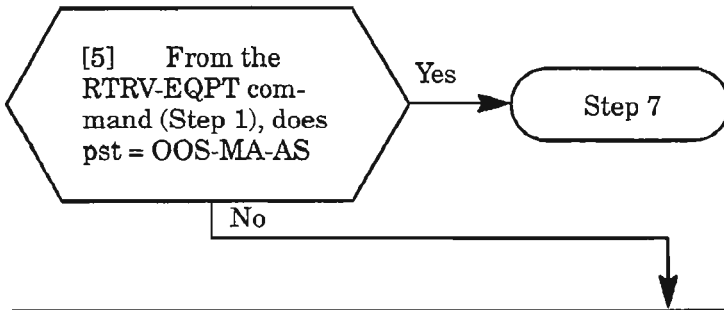
**NOTE: 1.** To select any of the decision paths listed, certain requirements apply to the affected equipment or facility (referred to as "object" in the following list). When selecting a decision path, the following information is pertinent:

- The Enter selection is used to add an object to the current configuration (i.e., to place it into service). The object's provisionable parameters also can be changed from their default value when the object is being entered. This selection is only valid if the current Primary State of the object is Unassigned (OOS-MA-UAS).
- The Edit selection is used to change provisionable parameters of the object after it is already entered into the configuration.
- The Delete function removes the object from the current configuration (i.e., returns the object's Primary State to unassigned, OOS-MA-UAS). Before deleting the object, supported entities (if any) must first be deleted or the delete command will be denied.
- The Remove (RMV) command is used to place an object into the maintenance state (OOS-MT) for testing. It is only valid if the object's current Primary State is In-Service (IS-NR or IS-ANR). Otherwise, the edit command must be used (i.e., from OOS-MA to OOS-MT).
- The Restore (RST) command is used to return an object from the maintenance state (OOS-MT) to the In-Service state (IS).

Execution of a command may be denied if a possible service interruption is detected or if the object is in an incorrect state. (See TNG-514 for more information.)

ISSUE 3	OCT 1994
ALCL 363-203-502	DLP
PAGE 4 of 9	204

## Edit CLK Parameters



[6] Enter the following command to place equipment in OOS-MA-AS state:

**ED-EQPT:[tid]:aid:[ctag]:::MA;**

where: aid = CLK (CLK-A and CLK-B)  
 CLKA (CLK-A)  
 CLKB (CLK-B)

AND

[7] Enter the following command specifying the parameters to be changed:

**ED-EQPT:[tid]:aid:[ctag]::[eqpttype],[compat]:[RVRTV=a]:[pst],[sst];**

where: aid = CLK (CLK-A and CLK-B)  
 CLKA (CLK-A)  
 CLKB (CLK-B)

eqpttype = Type of equipment (CLK201 or CLK202) installed (1-10 alphanumeric characters)

compat = CLK201 or CLK202 (Equipment codes that are compatible with software)

a = For RVRTV (revertive switching mode), enter:

N Nonrevertive switching  
 Y Revertive switching allowed

pst = Primary State (condition) of the aid:

IS Place equipment in in-service state after completing command  
 OOS Place equipment in out-of-service state for provisioning activity; the equipment must be placed in this state before modifying its parameters  
 MA Memory administration (synonymous with OOS)  
 MT Maintenance; place equipment in maintenance state (OOS-MT)  
 (null) No entry for pst means that the primary state of the equipment will not change after command is executed

sst = Secondary state of the aid:

AINS Automatic In-service; the equipment is automatically placed In-Service (pst = IS) when plugged in

## Enter CLK Equipment

[8] Enter the following command for new equipment (pst = OOS-MA-UAS):

**ENT-EQPT:[tid]:aid:[ctag]::eqpttype,[compat]:[RVRTV=a]:[pst],[sst];**

where: aid = CLK (CLK-A and CLK-B)  
          CLKA (CLK-A)  
          CLKB (CLK-B)

eqpttype = Type of equipment (CLK201, CLK202) installed (1-10 alphanumeric characters)

compat = CLK201 or CLK202 (Equipment codes that are compatible with software)

a = For RVRTV (revertive switching mode), enter:

N Nonrevertive switching (default)

Y Revertive switching allowed

pst = Primary State (condition) of the aid:

IS Place equipment in in-service state after completing command  
(default) (equipped must be installed)

OOS Place equipment in out-of-service state for provisioning activity;  
select this state if equipment is not installed

MA Memory administration (synonymous with OOS)

MT Maintenance; place equipment in maintenance state (OOS-MT)

sst = Secondary state of the aid:

AINS Automatic In-service; the equipment is automatically placed  
In-Service (pst = IS) when plugged in

---

ISSUE 3	OCT 1994
ALCL 363-203-502	DLP
PAGE 6 of 9	204


## Remove CLK (Place Equipment in OOS-MT Maintenance State)

[9] See NOTE 2. Enter the following command:

**RMV-EQPT:[tid]:aid:[ctag];**

where: aid = CLK (CLK-A and CLK-B)  
          CLKA (CLK-A)  
          CLKB (CLK-B)

---




## Restore Equipment (Return from Maintenance State)

[10] See NOTE 3. Enter the following command:

**RST-EQPT:[tid]:aid:[ctag];**

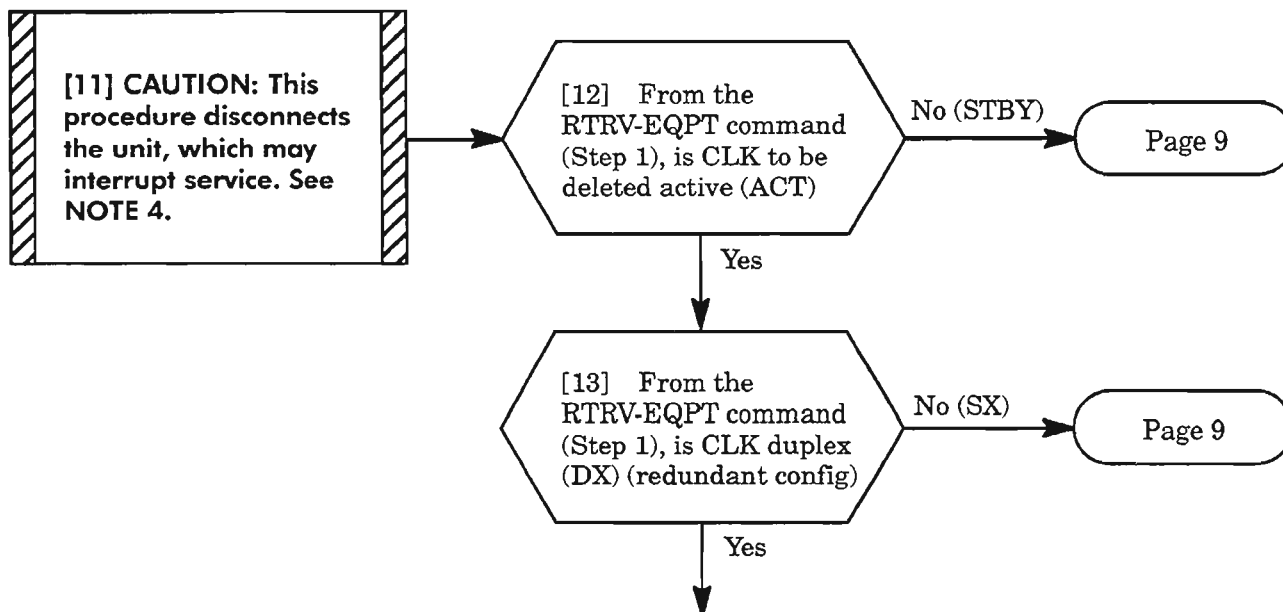
where: aid = CLK (CLK-A and CLK-B)  
          CLKA (CLK-A)  
          CLKB (CLK-B)

---



- NOTES:** 2. *The RMV-EQPT command disables alarm reporting but does not interrupt service.*  
3. *The equipment returns to In-Service state (IS) when this command is entered.*

## Delete CLK Equipment



[14] Switch to the standby unit by entering the following command:

**SW-DX-EQPT:[tid]:CLK:[ctag]::[mode];**

where: mode = NORM Appropriate verifications are made before switching the equipment (default)

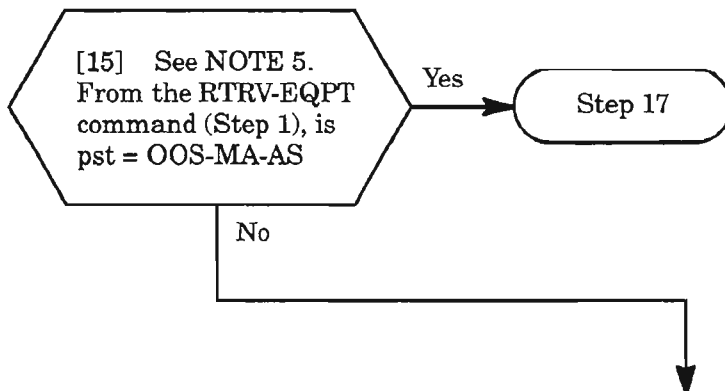
FRCD The equipment is switched without any verification

Page 9

**NOTE: 4.** SYNCPRI BITS must be deleted (if assigned) before CLK-A unit can be deleted. Likewise, SYNCSEC BITS must be deleted (if assigned) before CLK-B can be deleted. See DLP-200.

ISSUE 3	OCT 1994
ALCL 363-203-502	DLP
PAGE 8 of 9	204

## Delete CLK Equipment (cont)



[16] Enter the following command to place equipment in OOS-MA-AS state:

**ED-EQPT:[tid]:aid:[ctag]:::MA;**

where: aid = CLK (CLK and CLK-B)  
          CLKA (CLK-A)  
          CLKB (CLK-B)

AND

[17] Enter the command:

**DLT-EQPT:[tid]:aid:[ctag];**

where: aid = CLK (CLK-A and CLK-B)  
          CLKA (CLK-A)  
          CLKB (CLK-B)

**NOTE: 5.** The equipment must be in OOS-MA-AS state before it can be deleted.





**GENERAL EXPLANATION (cont)  
"RTRV-EQPT (LDR)"**

**RESPONSE**

```
M SID year-month-day hr:min:sec
ctag COMPLD
/* RTRV-EQPT:[tid]:dgx-ldrs-port:[ctag]; */
"dgx-ldrab-port:[eqpttype],[compat]:[eqpt_nblk]:pst,[sst],[ast]"
```

**WHERE**

**[sst]** Secondary state of the equipment: (cont)

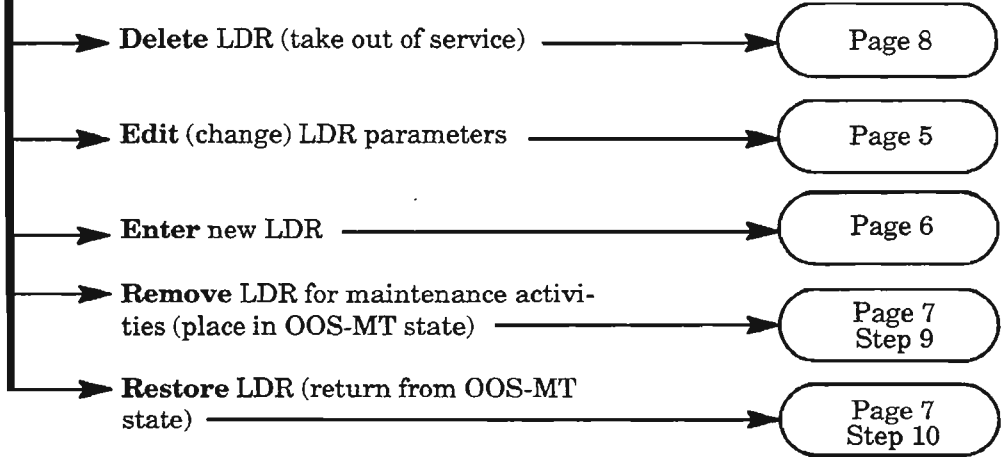
<b>EQ</b>	Equipped; the entity is equipped with the necessary equipment (plugged in)
<b>FLT</b>	Fault; the equipment is OOS-MT because it is faulty
<b>FRCDD</b>	Forced; change of state was forced
<b>MAN</b>	Manual; the equipment has been manually taken OOS-MT for maintenance activities
<b>MEA</b>	Mismatch of equipment and attributes; the installed equipment does not match the provisioned equipment
<b>OVFL</b>	Overflow; for the LOG and Database Capture Buffer (DBCDB) objects that are not provisioned with wrap buffer, this indicates that the object has depleted its memory resources
<b>PROT</b>	Entity is protection (not working) side
<b>PWR</b>	Power; entity is OOS-MT because it has no power
<b>STBY</b>	Standby; this entity is not providing service
<b>SWDL</b>	Software downloaded
<b>SWVERR</b>	Software version error
<b>SX</b>	Configuration is simplex
<b>TB</b>	Diagnostic test busy
<b>TSTF</b>	Test failure; the equipment is OOS-MT because of test failure
<b>UEQ</b>	Unequipped; the entity is not equipped with the necessary equipment
<b>WORK</b>	Entity is working side

**[ast]** Associated state of the equipment:

<b>FAF</b>	Facility failure; associated supporting facility is OOS
<b>FEF</b>	Family of equipment failure; associated controlling equipment is OOS
<b>UEA</b>	Underlying Entity Abnormal; the associated supporting entity is IS-ANR or OOS

<b>ISSUE 2</b>	<b>JULY 1994</b>
<b>ALCL 363-203-502</b>	<b>DLP</b>
<b>PAGE 3 of 9</b>	<b>219</b>

[4] See NOTE 1.  
Select the function  
to be performed



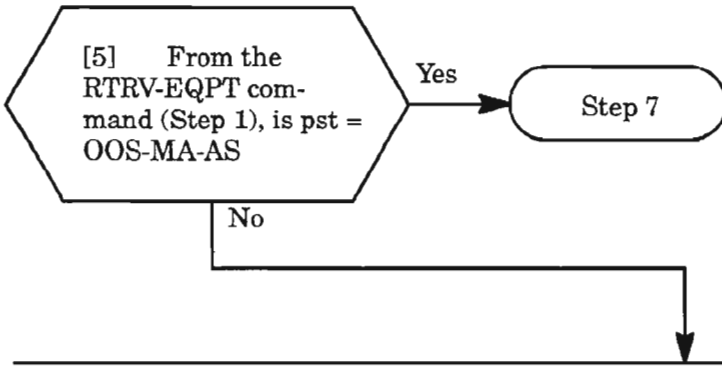
**NOTE: 1.** To select any of the decision paths listed, certain requirements apply to the affected equipment or facility (referred to as "object" in the following list). When selecting a decision path, the following information is pertinent:

- The Enter selection is used to add an object to the current configuration (i.e., to place it into service). The object's provisionable parameters also can be changed from their default value when the object is being entered. This selection is only valid if the current Primary State of the object is Unassigned (OOS-MA-UAS).
- The Edit selection is used to change provisionable parameters of the object after it is already entered into the configuration.
- The Delete function removes the object from the current configuration (i.e., returns the object's Primary State to unassigned, OOS-MA-UAS). Before deleting the object, supported entities (if any) must first be deleted or the delete command will be denied.
- The Remove (RMV) command is used to place an object into the maintenance state (OOS-MT) for testing. It is only valid if the object's current Primary State is In-Service (IS-NR or IS-ANR). Otherwise, the edit command must be used (i.e., from OOS-MA to OOS-MT).
- The Restore (RST) command is used to return an object from the maintenance state (OOS-MT) to the In-Service state (IS).

Execution of a command may be denied if a possible service interruption is detected or if the object is in an incorrect state. (See TNG-514 for more information.)

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 4 of 9	219

## Edit LDR Parameters



[6] Enter the following command to place equipment in OOS-MA-AS state:

**ED-EQPT:[tid]:dgx-ldrs-port:[ctag]:::MA;**

where: dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

ldrs = LDR (LDR-A and LDR-B), LDRA, or LDRB

port = 1...1 (port 1, only port available for this release)

AND

[7] Enter the following command specifying the parameters to be changed:

**ED-EQPT:[tid]:dgx-ldrs-port:[ctag]::[eqpttype],[compat]::[pst],[sst];**

where: dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

ldrs = LDR (LDR-A and LDR-B), LDRA, or LDRB

port = 1...1 (port 1, only port available for this release)

eqpttype = Type of equipment installed (LDR201 or LDR301)

compat = LDR201 or LDR301 (Equipment codes compatible with software)

pst = Primary State (condition) of the equipment:

IS Place equipment in in-service state after completing command

OOS Place equipment in out-of-service state for provisioning activity; the equipment must be placed in this state before modifying its parameters

MA Memory administration (synonymous with OOS)

MT Maintenance; place equipment in maintenance state (OOS-MT)

(null) No entry for pst means that the primary state of the equipment will not change after command is executed

sst = Secondary state of the equipment:

AINS Automatic In-service; the equipment is automatically placed In-Service (pst = IS) when plugged in

## Enter LDR Equipment

[8] See NOTE 2. Enter the following command for new equipment:

**ENT-EQPT:[tid]:dgx-ldrs-port:[ctag]::eqpttype,[compat]::[pst],[sst];**

where: dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

ldrs = LDR (LDR-A and LDR-B), LDRA, or LDRB

port = 1...1 (port 1, only port available for this release)

eqpttype = Type of equipment installed (LDR201 or LDR301)

compat = LDR201 or LDR301 (Equipment codes compatible with software)

pst = Primary state (condition) of the equipment:

IS Place equipment in in-service state after completing command  
(default) (equipment must be installed)

OOS Place equipment in out-of-service state for provisioning activity;  
(use this state if equipment is not installed)

MA Memory administration (synonymous with OOS)

MT Maintenance; place equipment in maintenance state (OOS-MT)

sst = Secondary state of the equipment:

AINS Automatic In-service; the equipment is automatically placed  
In-Service (pst = IS) when plugged in

---

**NOTE: 2.** *The LIF plug-in(s) must already be assigned for the drop group that the LDR is associated with (see DLP-218).*

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 6 of 9	219

## Remove LDR (Place Equipment in OOS-MT Maintenance State)

[9] See NOTE 3. Enter the following command:

**RMV-EQPT:[tid]:dgx-ldrs-port:[ctag];**

where: dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

ldrs = LDR (LDR-A and LDR-B), LDRA, or LDRB

port = 1...1 (port 1, only port available for this release)

---

## Restore LDR (Return from Maintenance State)

[10] See NOTE 4. Enter the following command:

**RST-EQPT:[tid]:dgx-ldrs-port:[ctag];**

where: dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

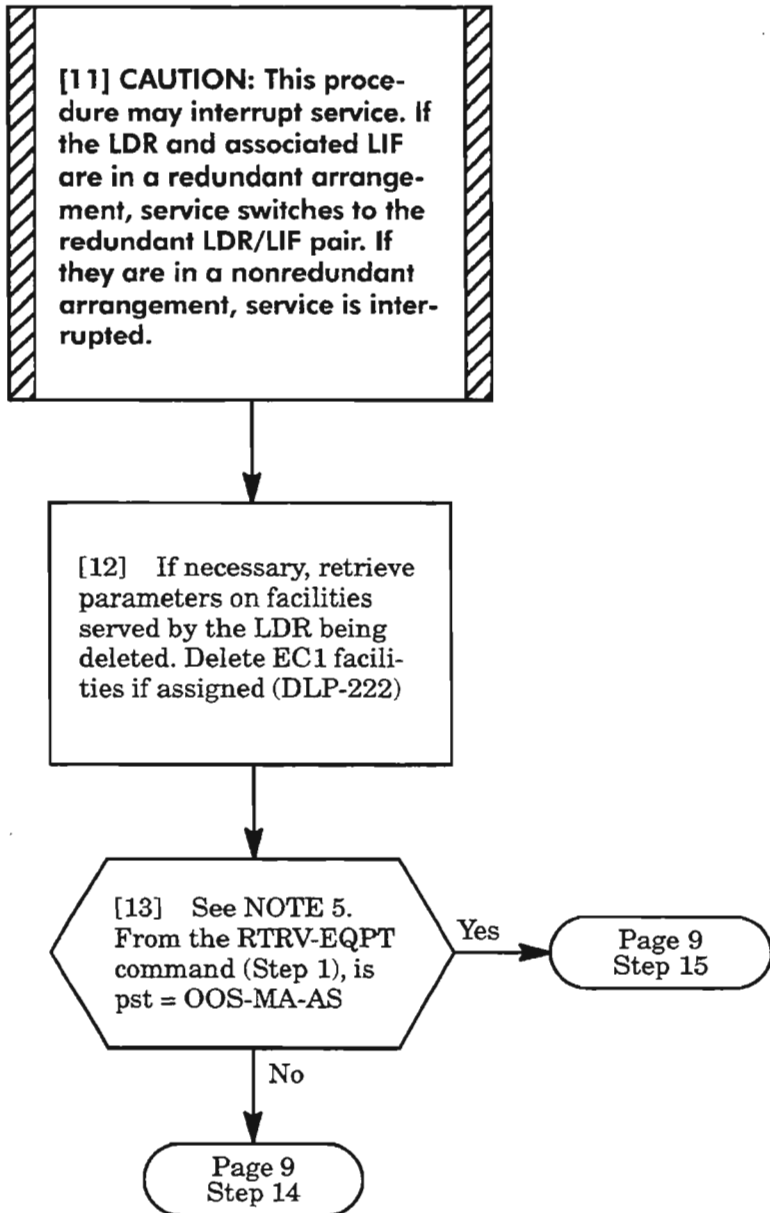
ldrs = LDR (LDR-A and LDR-B), LDRA, or LDRB

port = 1...1 (port 1, only port available for this release)

**NOTES:** 3. *The RMV-EQPT command disables alarm reporting but does not interrupt service.*

4. *The equipment returns to In-Service state (IS) when this command is entered.*

## Delete LDR (Disconnect and Remove from Service)



**NOTE: 5.** The equipment must be in OOS-MA-AS state before it can be deleted.

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 8 of 9	219

## Delete LDR (Disconnect and Remove from Service) (cont)

[14] Enter the following command to place equipment in OOS-MA-AS state:

**ED-EQPT:[tid]:dgx-ldrs-port:[ctag]:::MA;**

where: dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

ldrs = LDR (LDR-A and LDR-B), LDRA, or LDRB

port = 1...1 (port 1, only port available for this release)

---

AND

---

[15] Enter command:

**DLT-EQPT:[tid]:dgx-ldrs-port:[ctag];**

where: dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

ldrs = LDR (LDR-A and LDR-B), LDRA, or LDRB

port = 1...1 (port 1, only port available for this release)

---

■



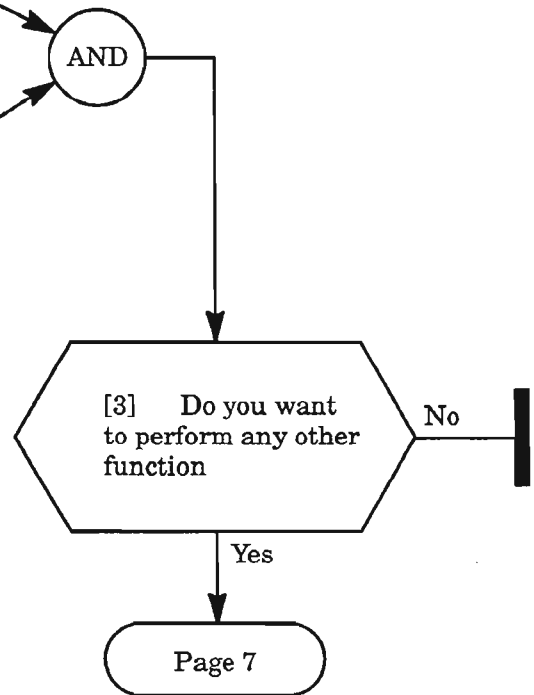


[1] See Figure 1, Page 2, for explanation of the access identification codes (aids) used to identify traffic paths in the 1603/12 SM Network Element. Then enter the command:

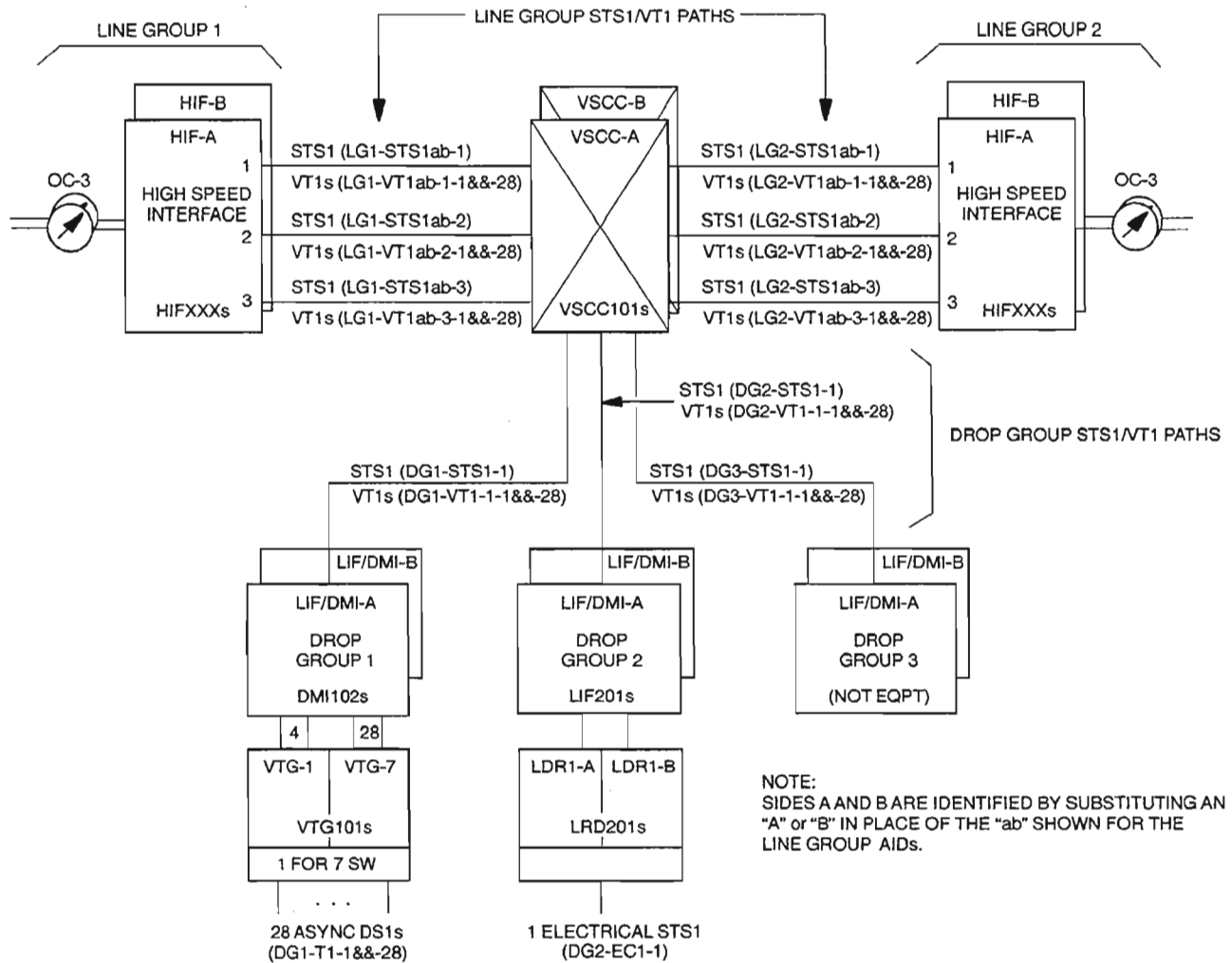
**RTRV-CRS-STS1:[tid]:aid:[ctag];**

where: aid = any of the following:  
**lgx-STs1-stspath** (line group STS-1 path)  
**dgx-STs1-1** (drop group STS-1 path)  
**dgx-EC1-1** (drop group STS-1 path to EC1 facility, see NOTE 1),  
**dgx-T3-1** (drop group STS-1 path to DS3 facility), or  
**ALL** (all assigned STS-1 paths)  
 lgx = LG1 or LG2 (line group)  
 stspath = 1...3  
 dgx = DG1, DG2 or DG3 (drop group)

[2] The response provides the parameter list and the states for the STS-1 path. See GENERAL EXPLANATION, Page 3



**NOTE: 1.** *The dgx-STs1-stspath identifier format is the preferred format since it addresses the payload to which the cross-connection is actually made. The alternate formats (dgx-EC1-stspath and dgx-T3-stspath) address the facility that carries the STS-1 payload and are provided as a convenience only. The net results of all formats are identical.*



A7900Rev1

Figure 1. Access Identification Codes (AIDs) of Traffic Paths (STS-1/VT-1/T1)

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 2 of 19	220

**GENERAL EXPLANATION  
"RTRV-CRS-ST51"**

**RESPONSE**

M        sid year-month-day hr:min:sec  
           ctag COMPLD  
           /\* RTRV-CRS-ST51:[tid]:aid:[ctag]; \*/  
           "aidfrom, [aidto]:cctype"

**WHERE**

**aidfrom, [aidto]** =        source and destination of the cross-connection in any of the following formats:  
                           **lgx-ST51-stspath** (line group ST5-1 path)  
                           **dgx-ST51-stspath1** (drop group ST5-1 path)  
                           **dgx-EC1-stspath1** (drop group ST5-1 path to EC1 facility; see NOTE 1)  
                           **dgx-T3-stspath1** (drop group ST5-1 path to DS3 facility; see NOTE 1)

                          lgx = LG1 or LG2 (line group)  
                           stspath = 1...3  
                           stspath1 = 1 (stspath to drop group)  
                           dgx = DG1, DG2 or DG3 (drop group)

**cctype**        =        Cross-connection type:

**1WAY** (Add, Drop or Pass-through; see Figure 2, Page 4, for examples)

**2WAY** (Add/Drop or Pass-through; see Figure 3, Page 5, for examples)

**2WAYPR** (*for UPPS Rings only; see Figure 4, Page 6, for example*)

A bidirectional protected connection from the members of a Fast Facility Protection group (FFP) to a single tributary port. Traffic from the tributary is inserted into both rings (line groups). This connection type is used at a single-hub access node for the UPPS Ring application

**2WAYBR** (*for UPPS Rings only; see Figure 4 for example*)

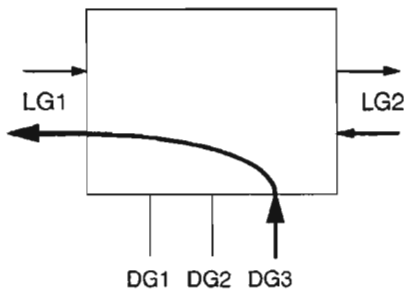
A bidirectional protected connection from the members of an FFP to a single tributary port. The signal from the ST5-1 path identified in the *aidfrom* identifier is continued in the same ST5-1 path toward the opposite line group. Traffic from the tributary is inserted only into the specified line group. This connection type is used at a double-hub access node for the UPPS Ring application

**1WAYPR** (*for UPPS Rings only; see Figure 4 for example*)

A unidirectional protected connection from the members of an FFP to a single tributary port. No traffic from the tributary is inserted into either ring. Traffic is passed through in both rings. This connection type is used at a ring transit node for the Multidrop-Broadcast UPPS Ring application

<b>ISSUE 2</b>	<b>JULY 1994</b>	
<b>ALCL 363-203-502</b>	<b>DLP</b>	
<b>PAGE 3 of 19</b>		<b>220</b>

ONE-WAY ADD – 1WAY



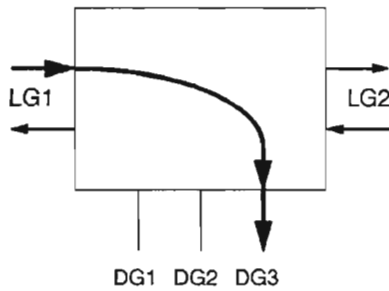
(ENT-CRS-STs1::aidfrom,aidto::cctype;)

ENT-CRS-STs1::dgx-EC1-stspath,lgx-STs1-stspath::1WAY;

EXAMPLE ENTRY:

ENT-CRS-STs1::DG3-EC1-1,LG1-STs1-3::1WAY;

ONE-WAY DROP – 1WAY



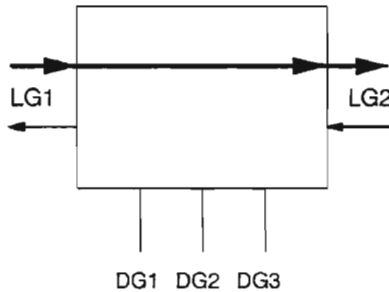
(ENT-CRS-STs1::aidfrom,aidto::cctype;)

ENT-CRS-STs1::lgx-STs1-stspath,dgx-EC1-stspath::1WAY;

EXAMPLE ENTRY:

ENT-CRS-STs1::LG1-STs1-3,DG3-EC1-1::1WAY;

ONE-WAY PASS-THROUGH – 1WAY



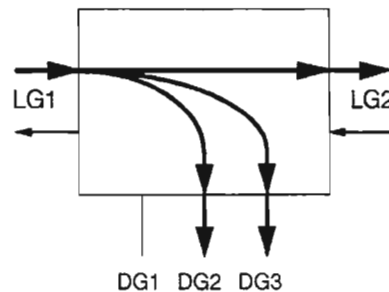
(ENT-CRS-STs1::aidfrom,aidto::cctype;)

ENT-CRS-STs1::lgx-STs1-stspath,lgx-STs1-stspath::1WAY;

EXAMPLE ENTRY:

ENT-CRS-STs1::LG1-STs1-2,LG2-STs1-2::1WAY;

SAMPLE BROADCAST – THREE 1WAYs



(ENT-CRS-STs1::aidfrom,aidto::cctype;)

ENT-CRS-STs1::lgx-STs1-stspath,lgx-STs1-stspath::1WAY;

ENT-CRS-STs1::lgx-STs1-stspath,dgx-STs1-stspath::1WAY;

ENT-CRS-STs1::lgx-STs1-stspath,dgx-STs1-stspath::1WAY;

EXAMPLE ENTRIES:

ENT-CRS-STs1::LG1-STs1-2,LG2-STs1-1::1WAY;

ENT-CRS-STs1::LG1-STs1-2,DG2-STs1-3::1WAY;

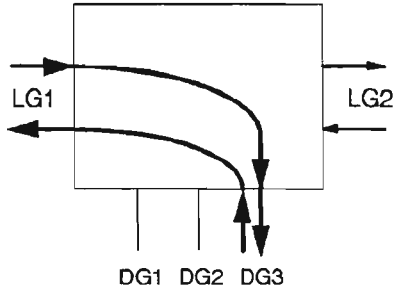
ENT-CRS-STs1::LG1-STs1-2,DG3-STs1-3::1WAY;

A7901

Figure 2. One-Way Cross-Connections

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 4 of 19	220

TWO-WAY ADD/DROP – 2WAY



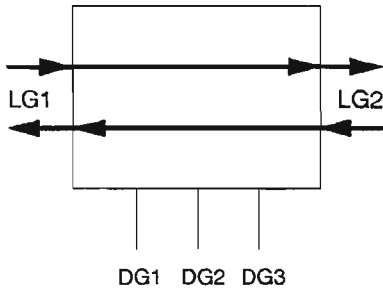
(ENT-CRS-ST51::aidfrom,aidto::cctype;)

ENT-CRS-ST51::lgx-ST51-stspath,dgx-EC1-stspath::2WAY;

EXAMPLE ENTRY:

ENT-CRS-ST51::LG1-ST51-3,DG3-EC1-1:::2WAY;

TWO-WAY PASS-THROUGH – 2WAY



(ENT-CRS-ST51::aidfrom,aidto::cctype;)

ENT-CRS-ST51::lgx-ST51-stspath,lgx-ST51-stspath:::2WAY;

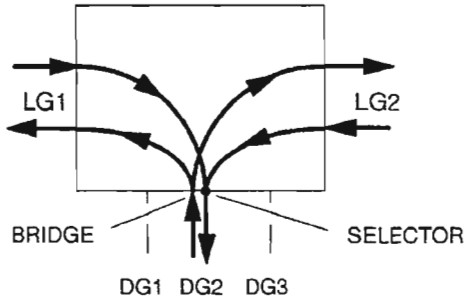
EXAMPLE ENTRY:

ENT-CRS-ST51::LG1-ST51-3,LG2-ST51-2:::2WAY;

A7903

Figure 3. Two-Way Cross-Connections

SINGLE-HUB PROTECTED  
ADD/DROP 2WAYPR



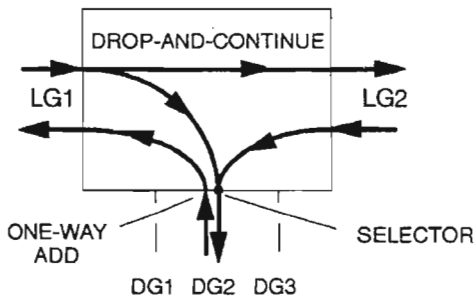
(ENT-CRS-STs1::aidfrom,aidto:::cctype;)

ENT-CRS-STs1::lgx-STs1-stspath,dgx-STs1-stspath:::2WAYPR;

EXAMPLE ENTRY:

ENT-CRS-STs1::LG1-STs1-3,DG2-STs1-1:::2WAYPR;

DOUBLE-HUB PROTECTED  
ADD/DROP 2WAYBR



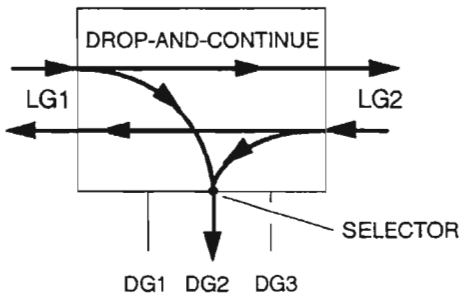
(ENT-CRS-STs1::aidfrom,aidto:::cctype;)

ENT-CRS-STs1::lgx-STs1-stspath,dgx-EC1-stspath:::2WAYBR;

EXAMPLE ENTRY:

ENT-CRS-STs1::LG1-STs1-3,DG2-EC1-1:::2WAYBR;

PROTECTED  
DROP-AND-CONTINUE  
1WAYPR



(ENT-CRS-STs1::aidfrom,aidto:::cctype;)

ENT-CRS-STs1::lgx-STs1-stspath,dgx-STs1-stspath:::1WAYPR;

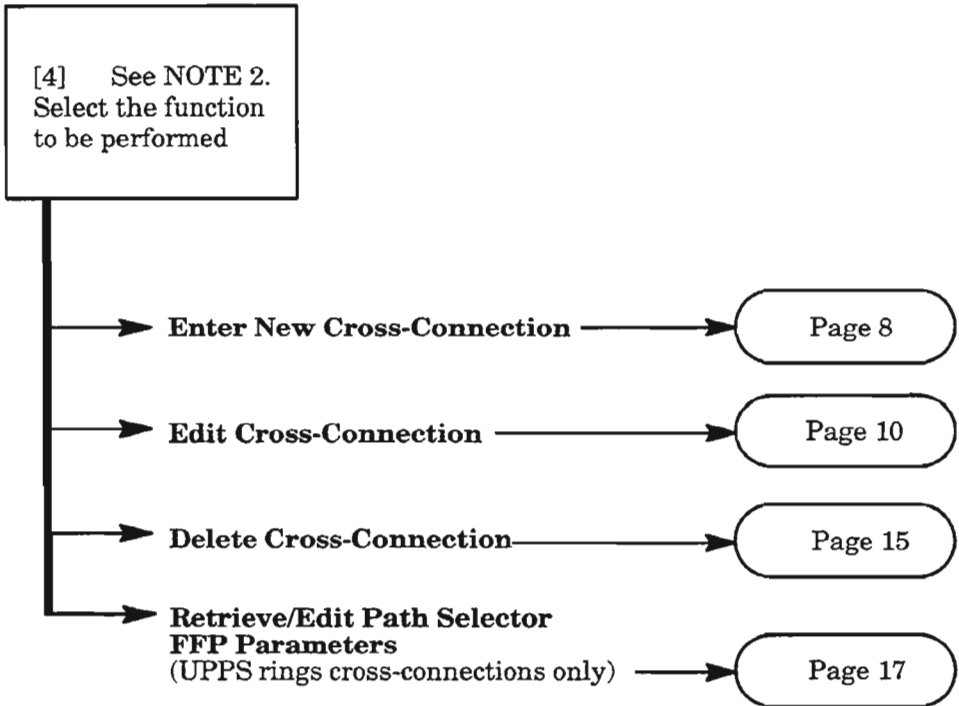
EXAMPLE ENTRY:

ENT-CRS-STs1::LG1-STs1-3,DG2-STs1-1:::1WAYPR;

A7905Rev1

Figure 4. Ring Cross-Connections

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 6 of 19	220



**NOTE: 2.** *The programmable VSCC101 cross-connect unit is required for all functions listed.*

## Enter New STS-1 Cross-Connection

- [5] See NOTE 3. If necessary, retrieve cross-connections (Step 1) to verify that there are no existing cross-connections already made to the STS-1 paths to which you want to make new cross-connections

---

AND

---

- [6] See NOTE 4. Enter the following commands, as needed, to determine the primary state (pst) of the paths (DLP-216):

**RTRV-STS1:[tid]:lgx-STS1-stspath:[ctag];** (line group path)

– or –

**RTRV-STS1:[tid]:dgx-STS1-1:[ctag];** (drop group path)

– or –

**RTRV-STS1:[tid]:ALL:[ctag];** (all assigned STS-1 paths)

where:     lgx = LG1 or LG2 (line group)  
          stspath = 1...3  
          dgx = DG1, DG2 or DG3 (drop group)

---

AND

---

- [7] From the response, if the primary state is OOS-MA-UAS for any STS-1 paths being cross-connected, the supporting facility for the STS-1 paths must be assigned (entered into service) before any cross-connections can be made. See DLP-214 for OC-3 line groups, DLP-222 for EC1 drop group facilities, or DLP-224 for DS3 facility. (STS-1 cross-connections cannot be made to drop group equipped with DMI/VTG plug-ins)

---

AND

---

- [8] From the response, if the primary state is IS-NR for any STS-1 path being cross-connected, enter the following commands, as needed, to edit the primary state to OOS-MA-AS (DLP-216):

**ED-STS1:[tid]:lgx-STS1-stspath:[ctag]:::MA;** (line group path)

– or –

**ED-STS1:[tid]:dgx-STS1-1:[ctag]:::MA;** (drop group path)

where:     lgx = LG1 or LG2 (line group)  
          stspath = 1...3  
          dgx = DG1, DG2 or DG3 (drop group)

---

↓

Page 9

**NOTES:** 3. *Several considerations and restrictions apply when entering cross-connections. Refer to the ENT-CRS-STs1 command in the 1603/12 SM Commands and Messages manual (650205-823-022) for more information.*

4. *The primary state of the STS-1 paths being cross-connected must be OOS-MA-AS.*

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 8 of 19	220

PROVISION STS-1 CROSS-CONNECTIONS



## Enter New STS-1 Cross-Connection (cont)

- [9] Enter the cross-connection specifying the source and destination STS-1 paths (aidfrom, aidto) and the cross-connection type by entering the command:

**ENT-CRS-STS1:[tid]:aidfrom,aidto:::[cctype];**

where:

**aidfrom,aidto** = STS-1 paths for end-points of the cross-connection in the following formats:

**l<sub>xg</sub>-STS1-stspath** (format for line group STS-1 path)

l<sub>xg</sub> = LG1 or LG2 (Line Group 1 or 2)

stspath = 1...3 (STS-1 path number)

**d<sub>gx</sub>-STS1-stspath1** (format for drop group STS-1 path)

**d<sub>gx</sub>-EC1-stspath1** (format for drop group EC1 facility; see NOTE 1, Page 1)

**d<sub>gx</sub>-T3-stspath1** (format for drop group DS3 facility; see NOTE 1, Page 1)

d<sub>gx</sub> = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

stspath1 = 1 (STS-1 path number for drop group)

**cctype** = Cross-connection type:

**1WAY** (Add, Drop or Pass-through)

**2WAY** (default, Add/Drop or Pass-through)

**2WAYPR** (Single-Hub, Protected Add/Drop, for UPPS Rings only)

**2WAYBR** (Double-Hub, Protected Add/Drop, for UPPS Rings only)

**1WAYPR** (Protected Drop-and-Continue, for UPPS Rings only)

---

Page 12

## Edit STS-1 Cross-Connection

- [10] See NOTES 5 and 6. Enter the following commands, as needed, to determine the primary state (pst) of the STS-1 paths to which the cross-connection is made (DLP-216):

**RTRV-STIS1:[tid]:lgx-STIS1-stspath:[ctag];** (line group path)

- or -

**RTRV-STIS1:[tid]:dgx-STIS1-1:[ctag];** (drop group path)

- or -

**RTRV-STIS1:[tid]:ALL:[ctag];** (all assigned STS-1 paths)

where:     lgx = LG1 or LG2 (line group)  
          stspath = 1...3  
          dgx = DG1, DG2 or DG3 (drop group)

---

AND

---

- [11] From the response, if the primary state is IS-NR for any STS-1 paths to which the cross-connection is made, enter the following commands, as needed, to edit the primary state to OOS-MA-AS (DLP-216):

**ED-STIS1:[tid]:lgx-STIS1-stspath:[ctag]:::MA;** (line group path)

- or -

**ED-STIS1:[tid]:dgx-STIS1-1:[ctag]:::MA;** (drop group path)

where:     lgx = LG1 or LG2 (line group)  
          stspath = 1...3  
          dgx = DG1, DG2 or DG3 (drop group)

---

Page 11

- NOTES: 5.** Use the *ED-CRS-STIS1* command to change the cross-connection-type of an existing cross-connection. The only permissible conversions are:

*2WAY -to- 2WAYPR*

*2WAY -to- 2WAYBR*

*2WAYPR -to- 2WAY*

*2WAYBR -to- 2WAY*

*Any other conversions require deleting and then reentering the cross-connection.*

- 6.** The primary state of the STS-1 paths that are cross-connected to must be OOS-MA-AS before the cross-connection can be edited.

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 10 of 19	220

## Edit STS-1 Cross-Connection (cont)

- [12] Edit the cross-connection specifying the line group (*aidstsp\_lg*) and drop group (*aidstsp\_dg*) STS-1 paths and the new cross-connection type (*cctype\_ed*) by entering the command:

**ED-CRS-STS1:[tid]:aidstsp\_lg,aidstsp\_dg:::[cctype\_ed];**

where:

**aidstsp\_lg** = Line group STS-1 path for originating end-point of the cross-connection in the following format:

**lgx-STs1-stspath**

lgx = LG1 or LG2 (Line Group 1 or 2)

stspath = 1...3 (STS-1 path number)

**aidstsp\_dg** = drop group STS-1 path for terminating end-point of the cross-connection in the following formats:

**dgx-STs1-stspath1** (format for drop group STS-1 path) or

**dgx-EC1-stspath1** (format for drop group EC1 facility)

**dgx-T3-stspath1** (format for drop group DS3 facility)

dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

stspath1 = 1 (STS-1 path number for drop group)

**cctype\_ed** = New cross-connection type:

**2WAY** (change from 2WAYPR or 2WAYBR; see Figure 5, Page 13, for examples) For 2WAYPR -to- 2WAY conversion, the *aidstsp\_lg* parameter must specify either of the two line group STS-1 facilities. The constituent cross-connection segments between the drop group STS-1 facility (identified by the *aidstsp\_dg* parameter) and the implied line group STS-1 facility, will be deleted, as will the FFP entity. What remains at successful completion of this command is a 2WAY cross-connection between the specified line group and drop group facilities

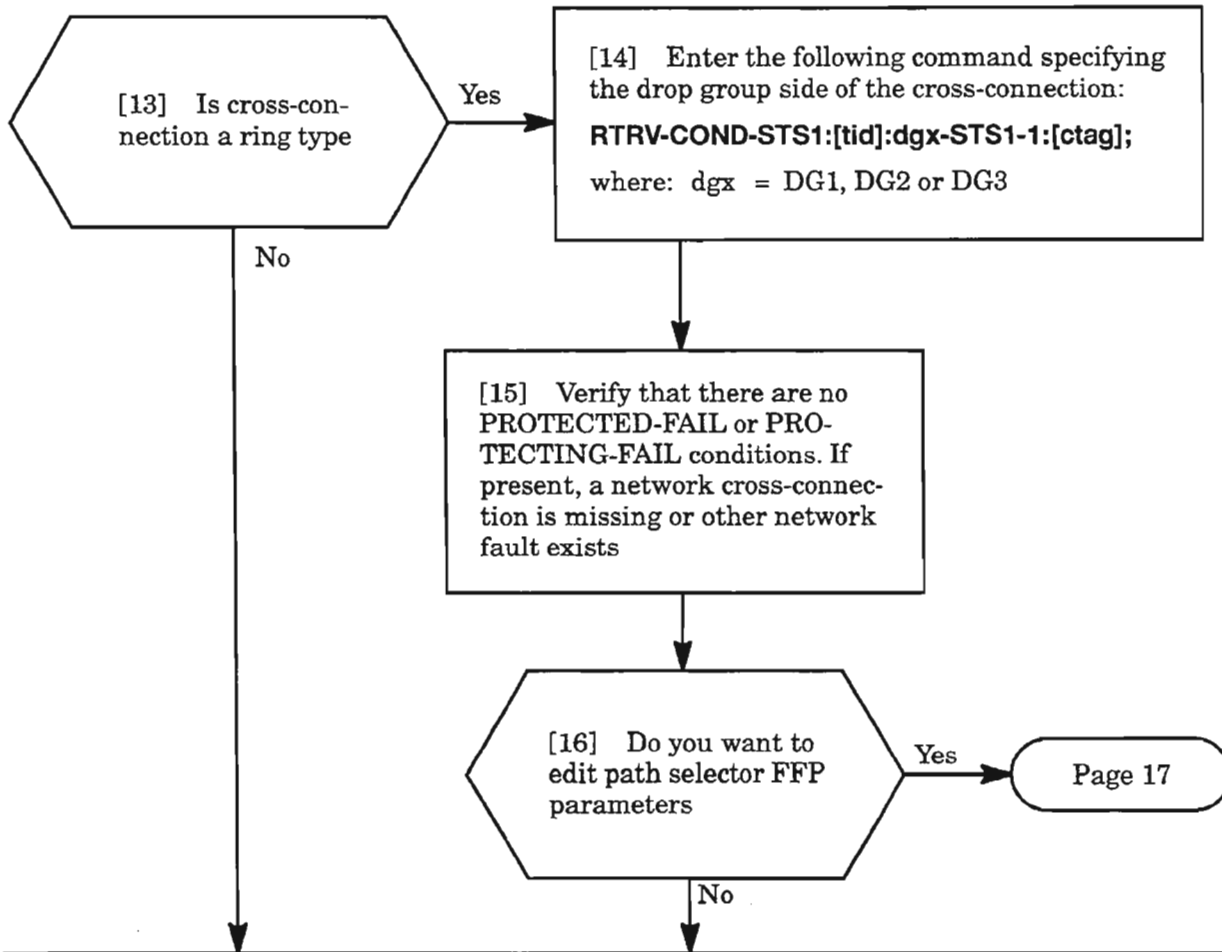
**2WAYPR** (change from 2WAY; see Figure 6, Page 14, for example)

For 2WAY -to- 2WAYPR conversion, the *aidstsp\_lg* parameter must specify a line STS-1 facility and the *aidstsp\_dg* parameter must specify a drop STS-1 facility. All semantic checkings, default settings, and automatic creation of the FFP entity are performed as stated in the ENT-CRS-STs1 command specification. New constituent cross-connection segments that involve the implied line STS-1 facility will be created, as will the FFP entity.

**2WAYBR** (change from 2WAY; see Figure 6 for example)

For 2WAY -to- 2WAYBR conversion, the *aidstsp\_lg* parameter must specify a line STS-1 facility and the *aidstsp\_dg* parameter must specify a drop STS-1 facility. All semantic checkings, default settings, and automatic creation of the FFP entity are performed as stated in the ENT-CRS-STs1 command specification. New constituent cross-connection segments that involve the implied line STS-1 facility will be created, as will the FFP entity.

**Edit (Enter) STS-1 Cross-Connection (cont)**



[17] Place the STS-1 paths back in service by entering the commands (DLP-216):

**ED-STS1:[tid]:lgx-STS1-stspath:[ctag]::::IS;** (line group path)

– or –

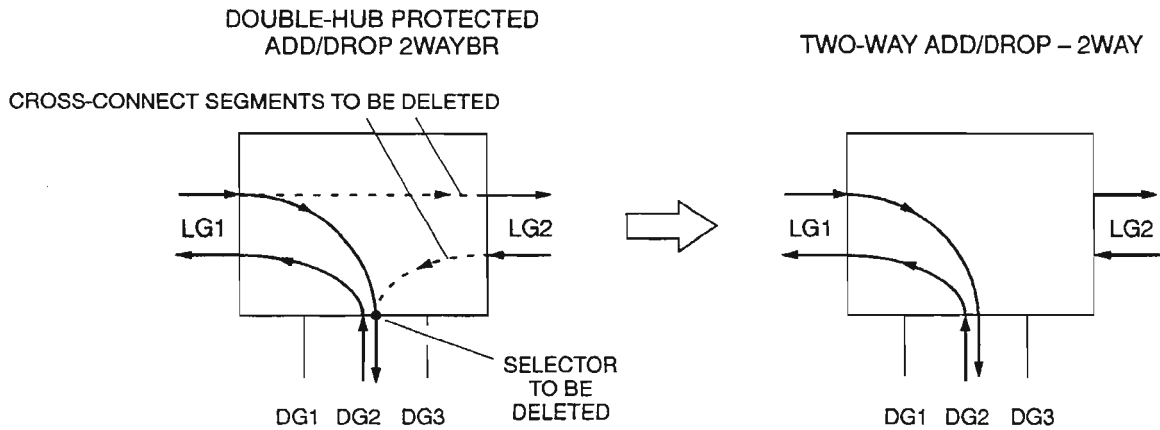
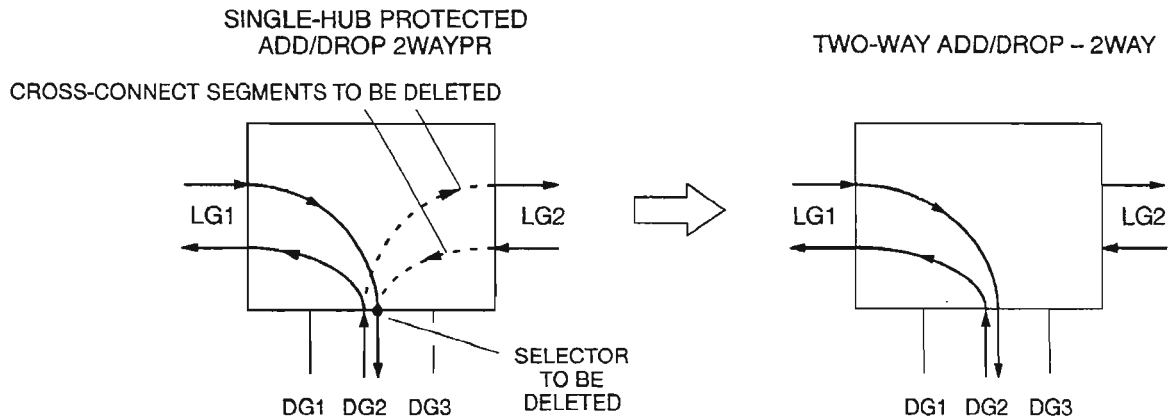
**ED-STS1:[tid]:dgx-STS1-1:[ctag]::::IS;** (drop group path)

where: lgx = LG1 or LG2 (line group)

stspath = 1...3

dgx = DG1, DG2 or DG3 (drop group)

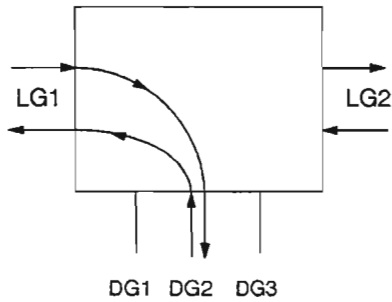
ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 12 of 19	220



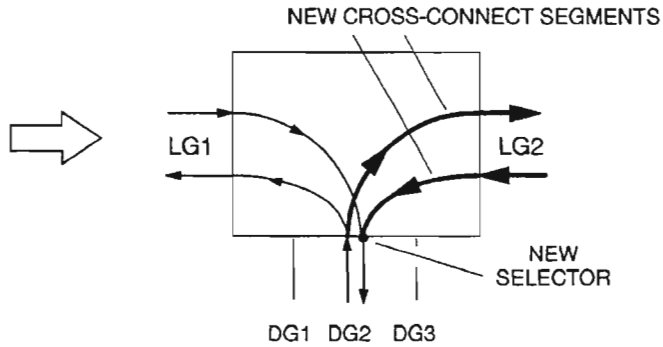
A7907

Figure 5. Edit 2WAYPR or 2WAYBR Cross-Connections -to- 2WAY Cross-Connection (STs-1)

TWO-WAY ADD/DROP – 2WAY

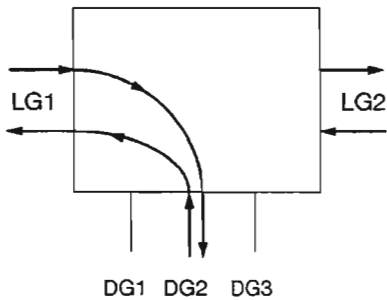


SINGLE-HUB PROTECTED ADD/DROP 2WAYPR

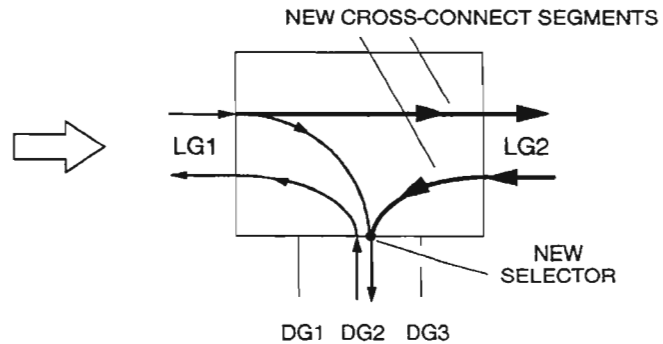


(ED-CRS-STS1::aidstsp\_lg,aidstsp\_dg::cctype\_ed;)  
 ED-CRS-STS1::lgx-STs1-stspath,dgx-STs1-stspath::2WAYPR;  
 EXAMPLE ENTRY:  
**ED-CRS-STs1::LG1-STs1-3,DG2-STs1-1::2WAYPR;**

TWO-WAY ADD/DROP – 2WAY



DOUBLE-HUB PROTECTED ADD/DROP 2WAYBR



(ED-CRS-STs1::aidstsp\_lg,aidstsp\_dg::cctype\_ed;)  
 ED-CRS-STs1::lgx-STs1-stspath,dgx-STs1-stspath::2WAYBR;  
 EXAMPLE ENTRY:  
**ED-CRS-STs1::LG1-STs1-3,DG2-STs1-1::2WAYBR;**

A7909

Figure 6. Edit 2WAY Cross-Connection -to- 2WAYPR or 2WAYBR Cross-Connections (STS-1)

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 14 of 19	220

## Delete STS-1 Cross-Connection

[18] See NOTE 7. Enter the following commands, as needed, to determine the primary state (pst) of the STS-1 paths associated with the cross-connection being deleted (DLP-216):

**RTRV-STS1:[tid]:lgx-STS1-stspath:[ctag];** (line group path)

- or -

**RTRV-STS1:[tid]:dgx-STS1-1:[ctag];** (drop group path)

- or -

**RTRV-STS1:[tid]:ALL:[ctag];** (all assigned STS-1 paths)

where:   lgx = LG1 or LG2 (line group)  
          stspath = 1...3  
          dgx = DG1, DG2 or DG3 (drop group)

---

**AND**

---

[19] From the response, if the primary state is IS-NR for any STS-1 paths being deleted, enter the following commands, as needed, to edit the primary state to OOS-MA-AS (DLP-216):

**ED-STS1:[tid]:lgx-STS1-stspath:[ctag]:::MA;** (line group path)

- or -

**ED-STS1:[tid]:dgx-STS1-1:[ctag]:::MA;** (drop group path)

where:   lgx = LG1 or LG2 (line group)  
          stspath = 1...3  
          dgx = DG1, DG2 or DG3 (drop group)

---

↓

Page 16

**NOTE: 7.** *The primary state of the STS-1 paths associated with the cross-connection being deleted must be OOS-MA-AS.*

## Delete STS-1 Cross-Connection (cont)

[20] See NOTE 8. Delete the cross-connection specifying the end-point STS-1 paths (aidfrom, aidto) by entering the command:

**DLT-CRS-STs1:[tid]:aidfrom,aidto:[ctag];**

where:

**aidfrom,aidto=** STS-1 path end-points of the cross-connection in the following formats:

**l<sub>x</sub>g-STs1-stspath** (format for line group STS-1 path),

**dg<sub>x</sub>-STs1-stspath1** (format for drop group STS-1 path), or

**dg<sub>x</sub>-EC1-stspath1** (format for drop group EC1 facility; see NOTE 1, Page 1)

**dg<sub>x</sub>-T3-stspath1** (format for drop group DS3 facility)

l<sub>x</sub>g = LG1 or LG2 (Line Group 1 or 2)

stspath = 1...3 (STS-1 path number)

dg<sub>x</sub> = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

stspath1 = 1 (STS-1 path number for drop group)



**NOTE: 8.** *This command deletes an STS-1-level cross-connection previously established by an ENT-CRS-STs1. The aidfrom and aidto parameters must uniquely identify an existing cross-connection. If the parameters are ranged or grouped to specify multiple connections (by mapping, one-to-one, n STS-1 end-points to n STS-1 end-points), each connection is considered for deletion individually, one after the other. A PRTL response is generated if all of the specified cross-connections cannot be deleted. The successful deletion of a ring cross-connection also automatically deletes the associated Fast Facility Protection (FFP) entity. The deletion of a cross-connection is conditional on its current operational state; all STS-1 path end-points must be OOS-MA-AS. A cross-connection must be successfully deleted using this command before the individual end-point facilities can be deleted.*

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 16 of 19	220



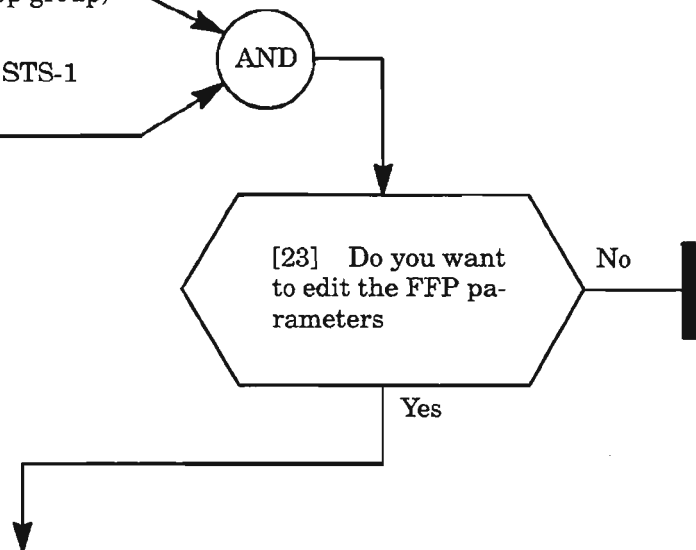
## Retrieve/Edit Path Selector FFP Parameters (Ring Cross-Connections Only)

[21] Enter the command:

**RTRV-FFP-STS1:[tid]:aid:[ctag];**

where: aid = either of the following:  
**dgx-STST1-1** (drop group STS-1 path), or  
**ALL** (all assigned STS-1 FFP entities)  
 dgx = DG1, DG2 or DG3 (drop group)

[22] The response provides the parameter list for the STS-1 FFP entity. See GENERAL EXPLANATION, Page 18



[24] See NOTE 9. Enter the following command to determine the primary state (pst) of the drop group STS-1 path (DLP-216):

**RTRV-STST1:[tid]:dgx-STST1-1:[ctag]; (drop group path)**

where: dgx = DG1, DG2 or DG3 (drop group)

AND

[25] From the response, if the primary state is IS-NR, enter the following command to edit the primary state to OOS-MA-AS (DLP-216):

**ED-STST1:[tid]:dgx-STST1-1:[ctag]:::MA; (drop group path)**

where: dgx = DG1, DG2 or DG3 (drop group)

Page 19

**NOTE: 9.** The primary state of the drop group STS-1 path associated with the cross-connection must be OOS-MA-AS before the path selector FFP parameters can be edited.

ISSUE 2	JULY 1994	
ALCL 363-203-502	DLP	
PAGE 17 of 19	220	

**GENERAL EXPLANATION**  
**"RTRV-FFP-STS1"**

**RESPONSE**

```

M      sid year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-FFP-STS1:[tid]:aid:[ctag]; */
      "aid,pref:ffp_nblk"
  
```

**WHERE**

- aid** = The drop group STS-1 path associated with the ring FFP entity in the following format:
- dgx-STS1-stspath1** (drop group STS-1 path)
- dgx = DG1, DG2 or DG3 (drop group)
- stspath1 = 1 (stspath to drop group)
- pref** = Preference of FFP selector between two ring paths (line groups) for revertive switching. The ring path selected is the protected path and the other ring path is the protection path. Valid values are:
- LG1** (Line Group 1)
- LG2** (Line Group 2)
- ffp\_nblk** = The FFP parameter block. The block is made up of named parameters followed by an equal sign and a selected value. The parameters and their values are:
- RVRTV = Y** Yes, revertive switching mode is enabled. The FFP selector reverts to the preferred ring path (selected with the pref parameter) after a manual switch is released or after cause for automatic switch clears
- N** No, nonrevertive switching
- [RVTWTR] = 0...12** (minutes) Wait to restore delay for FFP selector. This parameter determines how long to wait before reverting to the ring path selected with the pref parameter. This parameter is applicable only if revertive switching is selected

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 18 of 19	220

## Retrieve/Edit Path Selector FFP Parameters (Ring Cross-Connections Only)

[26] Edit the FFP parameters being changed by entering the command:

**ED-FFP-STS1:[tid]:aid:[ctag]:::[RVRTV=yn,RVTWTR=min,PREF=lgx];**

where: aid = either of the following:

**dgx-STs1-1** (drop group STS1 path), or

**ALL** (all assigned STS1 FFP entities)

dgx = DG1, DG2 or DG3 (drop group)

yn = **Y** or **N** for Yes (enable) or No (disable) revertive switching. If enabled, the FFP selector reverts to the preferred ring path (selected with the pref parameter) after a manual switch is released or after cause for automatic switch clears

min = **0...12** minutes; wait to restore delay for FFP selector. This parameter determines how long to wait before reverting to the ring path selected with the pref parameter. This parameter is allowed only if revertive switching is selected

lgx = **LG1** or **LG2** for Line Group 1 or 2; preference of FFP selector between two ring paths (line groups) for revertive switching. The ring path selected is the protected path and the other ring path is the protection path

---

**AND**

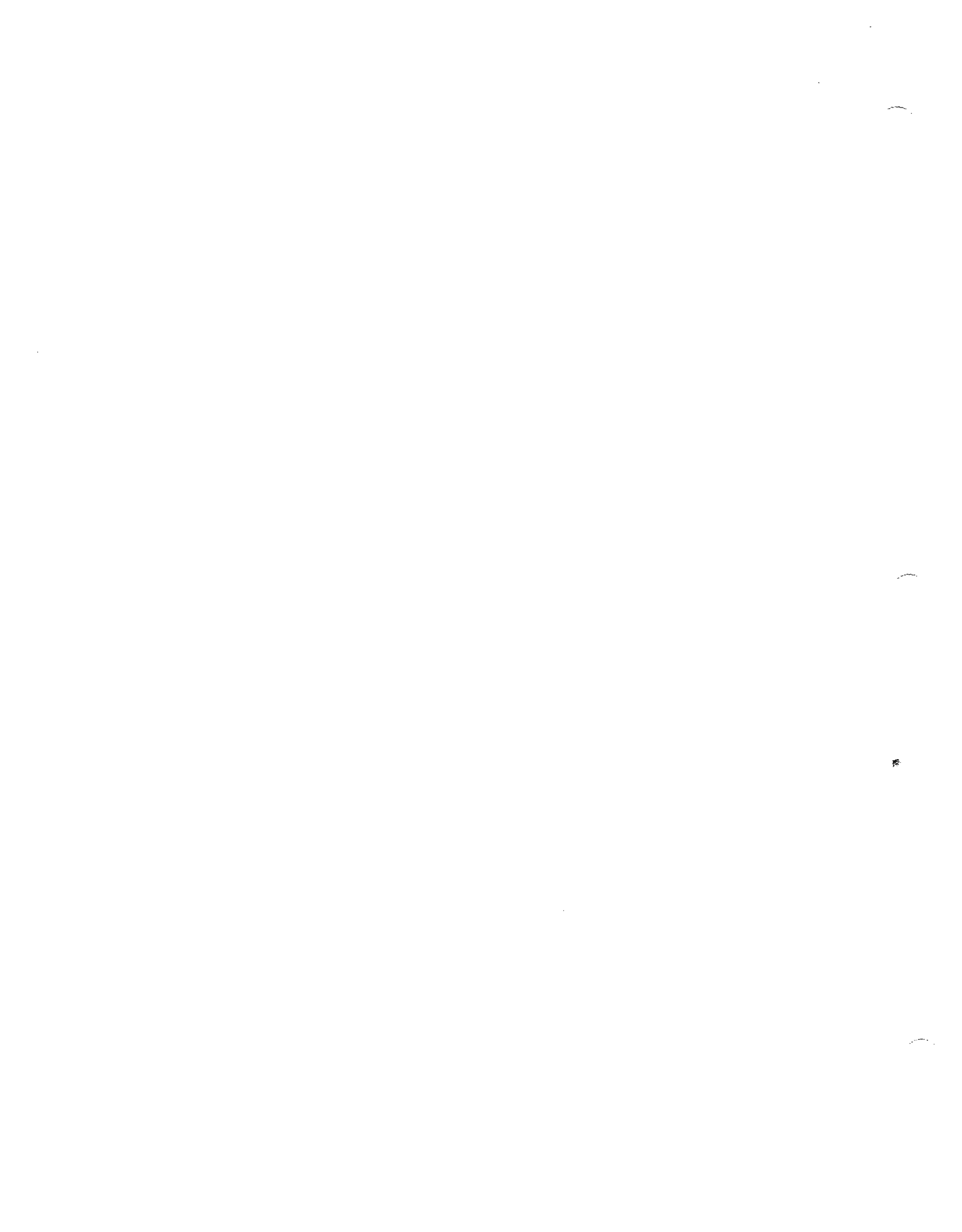
---

[27] Enter the following command to place the drop group STS-1 path back into service (DLP-216):

**ED-STs1:[tid]:dgx-STs1-1:[ctag]:::IS;** (drop group path)

where: dgx = DG1, DG2 or DG3 (drop group)



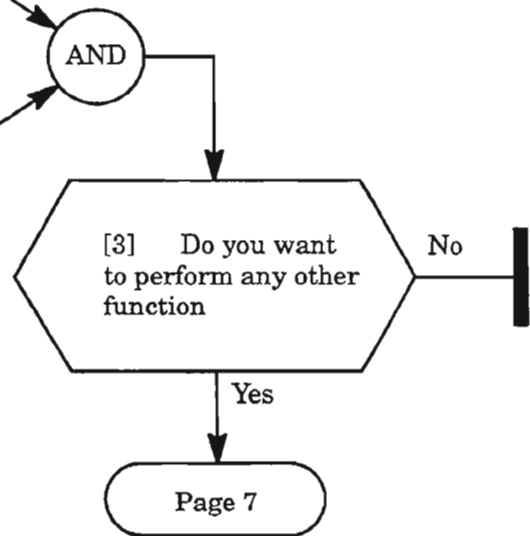


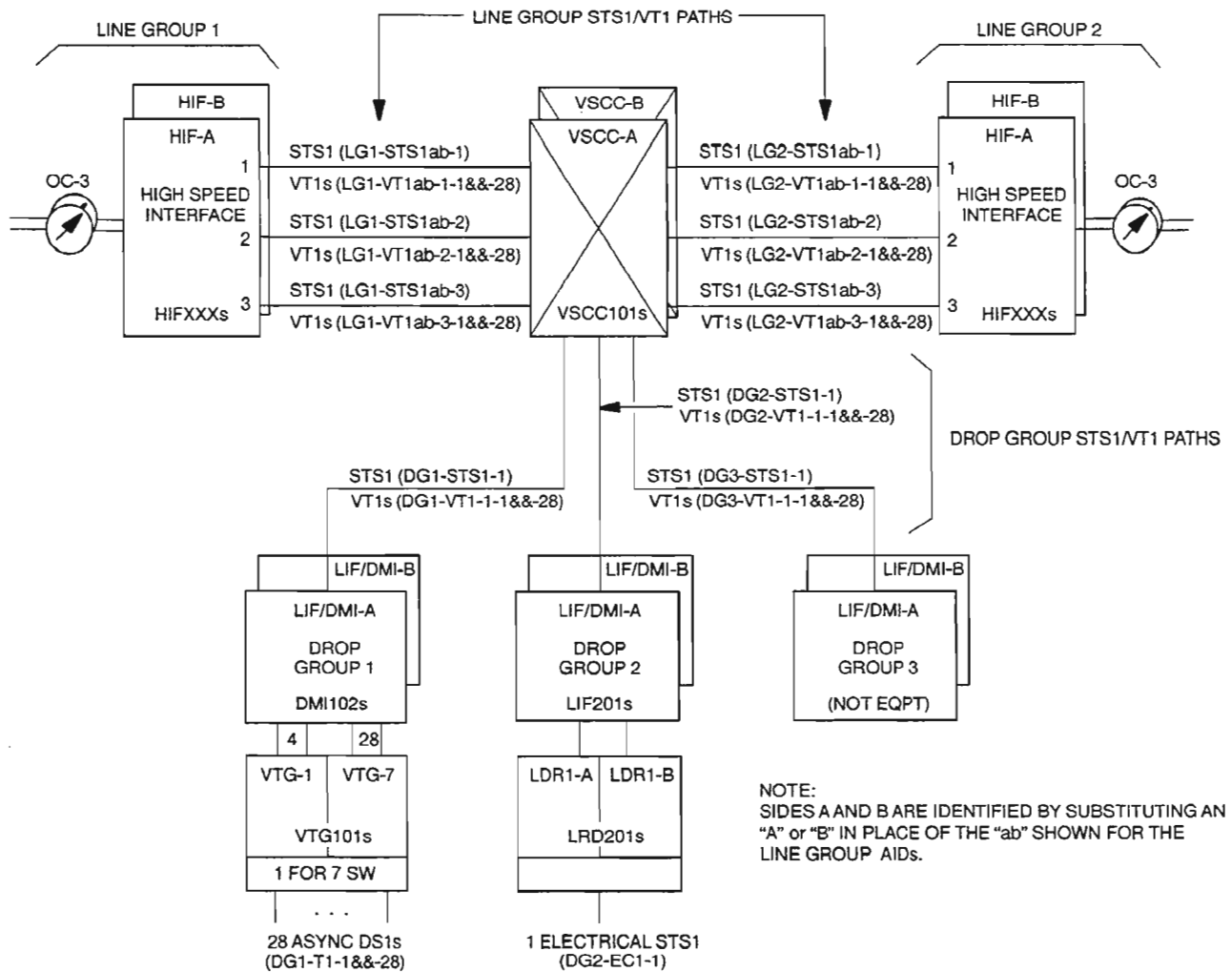
[1] See Figure 1, Page 2, for explanation of the access identification codes (aids) used to identify traffic paths in the 1603/12 SM Network Element. Then enter command:

**RTRV-CRS-VT1:[tid]:aid:[ctag]::[TMAP=yn];**

where: aid = any of the following:  
**lgx-VT1-stspath-vtpath** (line group path)  
**dgx-VT1-1-vtpath** (drop group path)  
**dgx-T1-ds1no** (drop group path mapped to DS1 port number; see Table A and NOTE 1, Page 2), or  
**ALL** (all assigned VT-1 paths)  
 lgx = LG1 or LG2 (line group)  
 stspath = 1...3  
 dgx = DG1, DG2 or DG3 (drop group)  
 vtpath = 1...28 (VT-1 path)  
 ds1no = 1...28 (DS1 port number)  
 yn = **Y** (yes) or **N** (no, default) for TMAP parameter. If TMAP = Y, the response maps the output to the T1 aid format. If TMAP = N, the aid in the response is in the VT1 format. The TMAP parameter allows the input aid to be in one format and the output aid in the other

[2] The response provides the parameter list and the states for the VT-1 path. See GENERAL EXPLANATION, Page 3





A7900Rev1

Figure 1. Access Identification Codes (AIDs) of Traffic Paths (STS-1/VT-1/T1)

Table A. DS1 (T1)-to-VT1 Mapping

VTG 1		VTG 2		VTG 3		VTG 4		VTG 5		VTG 6		VTG 7	
DS1#	VT#	DS1#	VT#	DS1#	VT#	DS1#	VT#	DS1#	VT#	DS1#	VT#	DS1#	VT#
1	1	5	2	9	3	13	4	17	5	21	6	25	7
2	8	6	9	10	10	14	11	18	12	22	13	26	14
3	15	7	16	11	17	15	18	19	19	23	20	27	21
4	22	8	23	12	24	16	25	20	26	24	27	28	28

**NOTE:** 1. The *dgx-T1-ds1no* identifier format allows the drop group path to be selected based on the DS1 circuit number, instead of the corresponding VT-1 path identifier (*dgx-VT1-stspath-vt1path*). Note that the VT-1 path and T1 port number are not always the same. Use of these two formats produces the same cross-connect as long as the path is properly addressed.

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 2 of 19	221

**GENERAL EXPLANATION**  
**"RTRV-CRS-STS1"**

**RESPONSE**

M        sid year-month-day hr:min:sec  
           ctag COMPLD  
           /\* RTRV-CRS-VT1:[tid]:aid:[ctag]; \*/  
           "aidfrom,[aidto]:cctype"

**WHERE**

**aidfrom, [aidto]** = source and destination of the cross-connection in any of the following formats:  
                   **lgx-VT1-stspath-vtpath** (line group VT-1 path)  
                   **dgx-VT1-stspath1-vtpath** (drop group VT-1 path)  
                   **dgx-T1-ds1no** (drop group VT-1 path mapped to DS1 port, see Table A)

lgx = LG1 or LG2 (line group)  
 stspath = 1...3  
 vtpath = 1...28  
 stspath1 = 1 (stspath to drop group)  
 dgx = DG1, DG2 or DG3 (drop group)  
 ds1no = DS1 circuit number (port)

**cctype** = Cross-connection type:

**1WAY** (Add, Drop or Pass-through; see Figure 2, Page 4, for examples)

**2WAY** (Add/Drop or Pass-through; See Figure 3, Page 5, for examples)

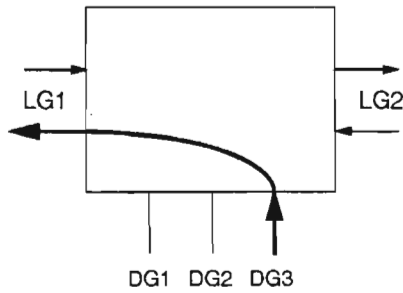
**2WAYPR** (*for UPPS Rings only; see Figure 4, Page 6, for example*)  
 A bidirectional protected connection from the members of a Fast Facility Protection group (FFP) to a single tributary port. Traffic from the tributary is inserted into both rings (line groups). This connection-type is used at a single-hub access node for the UPPS Ring application

**2WAYBR** (*for UPPS Rings only; see Figure 4 for example*)  
 A bidirectional protected connection from the members of an FFP to a single tributary port. The signal from the VT1 path identified in the *aidfrom* identifier is continued in the same VT1 path toward the opposite line group. Traffic from the tributary is inserted only into the specified line group. This connection type is used at a double-hub access node for the UPPS Ring application

**1WAYPR** (*for UPPS Rings only; see Figure 4 for example*)  
 A unidirectional protected connection from the members of an FFP to a single tributary port. No traffic from the tributary is inserted into either ring. Traffic is passed through in both rings. This connection type is used at a ring transit node for the Multidrop-Broadcast UPPS Ring application

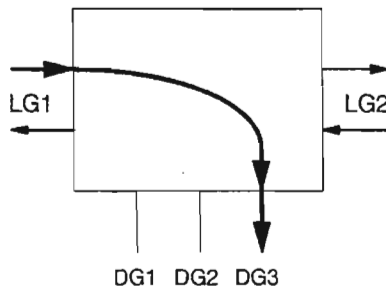
ISSUE 2	JULY 1994	
ALCL 363-203-502	DLP	
PAGE 3 of 19	221	

ONE-WAY ADD – 1WAY



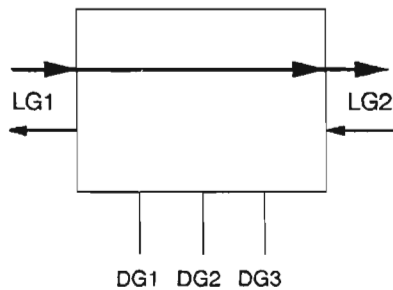
(ENT-CRS-VT1::aidfrom,aidto::cctype;)  
 ENT-CRS-VT1::dgx-VT1-stspath-vtpath,lgx-VT1-stspath-vtpath::1WAY;  
 EXAMPLE ENTRY:  
 ENT-CRS-VT1::DG3-VT1-1-15,LG1-VT1-3-12::1WAY;

ONE-WAY DROP – 1WAY



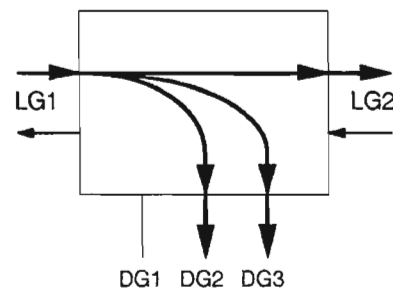
(ENT-CRS-VT1::aidfrom,aidto::cctype;)  
 ENT-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath::1WAY;  
 EXAMPLE ENTRY:  
 ENT-CRS-VT1::LG1-VT1-3-12,DG3-VT1-1-15::1WAY;

ONE-WAY PASS-THROUGH – 1WAY



(ENT-CRS-VT1::aidfrom,aidto::cctype;)  
 ENT-CRS-VT1::lgx-VT1-stspath-vtpath,lgx-VT1-stspath-vtpath::1WAY;  
 EXAMPLE ENTRY:  
 ENT-CRS-VT1::LG1-VT1-3-12,LG2-VT1-1-15::1WAY;

SAMPLE BROADCAST – THREE 1WAYS



(ENT-CRS-VT1::aidfrom,aidto::cctype;)  
 ENT-CRS-VT1::lgx-VT1-stspath-vtpath,lgx-VT1-stspath-vtpath::1WAY;  
 ENT-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath::1WAY;  
 ENT-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath::1WAY;  
 EXAMPLE ENTRIES:  
 ENT-CRS-VT1::LG1-VT1-2-10,LG2-VT1-1-18::1WAY;  
 ENT-CRS-VT1::LG1-VT1-2-10,DG2-VT1-1-4::1WAY;  
 ENT-CRS-VT1::LG1-VT1-2-10,DG3-VT1-1-6::1WAY;

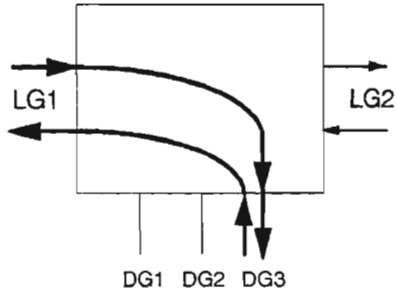
A7902

Figure 2. One-Way Cross-Connections

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 4 of 19	221



TWO-WAY ADD/DROP - 2WAY



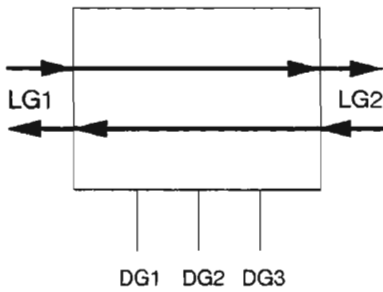
(ENT-CRS-VT1::aidfrom,aidto:::cctype;)

ENT-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath:::2WAY;

EXAMPLE ENTRY:

ENT-CRS-VT1::LG1-VT1-3-28,DG3-VT1-1-28:::2WAY;

TWO-WAY PASS-THROUGH - 2WAY



(ENT-CRS-VT1::aidfrom,aidto:::cctype;)

ENT-CRS-VT1::lgx-VT1-stspath-vtpath,lgx-VT1-stspath-vtpath:::2WAY;

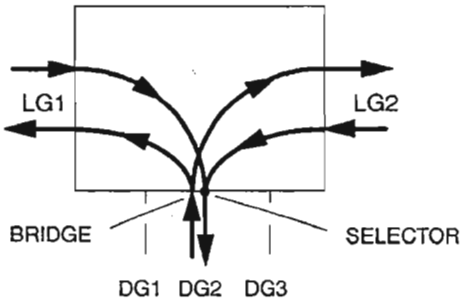
EXAMPLE ENTRY:

ENT-CRS-VT1::LG1-VT1-3-20,LG2-VT1-2-24:::2WAY;

A7904

Figure 3. Two-Way Cross-Connections

**SINGLE-HUB PROTECTED  
ADD/DROP 2WAYPR**



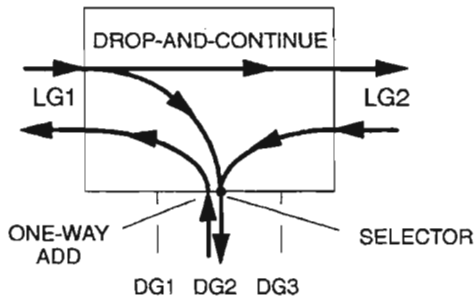
(ENT-CRS-VT1::aidfrom,aidto::cctype;)

ENT-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath:::2WAYPR;

EXAMPLE ENTRY:

**ENT-CRS-VT1::LG1-VT1-3-28,DG2-VT1-1-28:::2WAYPR;**

**DOUBLE-HUB PROTECTED  
ADD/DROP 2WAYBR**



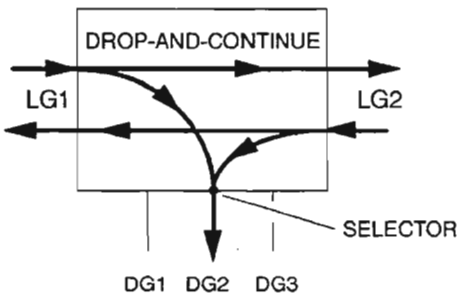
(ENT-CRS-VT1::aidfrom,aidto::cctype;)

ENT-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath:::2WAYBR;

EXAMPLE ENTRY:

**ENT-CRS-VT1::LG1-VT1-3-28,DG2-VT1-1-28:::2WAYBR;**

**PROTECTED  
DROP-AND-CONTINUE  
1WAYPR**



(ENT-CRS-VT1::aidfrom,aidto::cctype;)

ENT-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath:::1WAYPR;

EXAMPLE ENTRY:

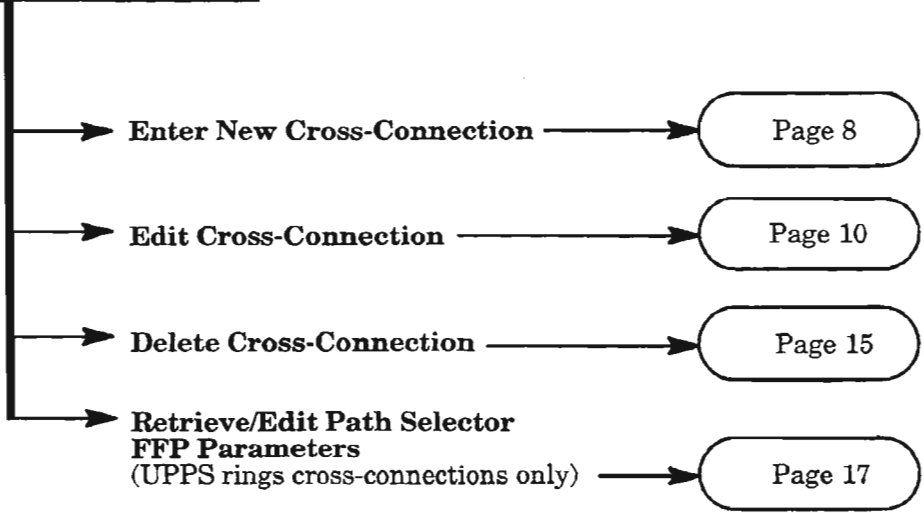
**ENT-CRS-VT1::LG1-VT1-3-28,DG2-VT1-1-28:::1WAYPR;**

A7906Rev1

**Figure 4. Ring Cross-Connections**

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 6 of 19	221

[4] See NOTE 2.  
Select the function  
to be performed



**NOTE: 2.** *The programmable VSCC101 cross-connect unit is required for all functions listed.*

## Enter New VT-1 Cross-Connection

- [5] See NOTE 3. If necessary, retrieve cross-connections (Step 1) to verify that there are no existing cross-connections already made to the VT-1 paths to which you want to make new cross-connections

AND

- [6] See NOTE 4. Enter the following commands, as needed, to determine the primary state (pst) of the paths (DLP-217):

**RTRV-VT1:[tid]:lgx-VT1-stspath-vtpath:[ctag];** (line group path)

– or –

**RTRV-VT1:[tid]:dgx-VT1-1-vtpath:[ctag];** (drop group path)

– or –

**RTRV-VT1:[tid]:ALL:[ctag];** (all assigned VT1 paths)

where: lgx = LG1 or LG2 (line group)  
stspath = 1...3  
dgx = DG1, DG2 or DG3 (drop group)

AND

- [7] From the response, if the primary state is OOS-MA-UAS for any VT-1 paths being cross-connected, the supporting facility for the parent STS-1 path must be assigned (entered in service) before any cross-connections can be made. See DLP-214 for OC-3 line groups, DLP-212 for T1 facilities, or DLP-222 for EC1 drop group facility

AND

- [8] From the response, if the primary state is IS-NR for any VT-1 paths being cross-connected, enter the following commands, as needed, to edit the primary state to OOS-MA-AS (DLP-217):

**ED-VT1:[tid]:lgx-VT1-stspath-vtpath:[ctag]::::MA;** (line group path)

– or –

**ED-VT1:[tid]:dgx-VT1-1-vtpath:[ctag]::::MA;** (drop group path)

where: lgx = LG1 or LG2 (line group)  
stspath = 1...3  
vtpath = 1...28  
dgx = DG1, DG2 or DG3 (drop group)

Page 9

**NOTES: 3.** *Several considerations and restrictions apply when entering cross-connections. Refer to the ENT-CRS-VT1 command in the 1603/12 SM Commands and Messages manual (650205-823-022) for more information.*

**4.** *The primary state of the VT-1 paths being cross-connected must be OOS-MA-AS.*

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 8 of 19	221

## Enter New VT-1 Cross-Connection (cont)

- [9] Enter the cross-connection specifying the source and destination VT-1 paths (aidfrom, aidto) and the cross-connection type by entering the command:

**ENT-CRS-VT1:[tid]:aidfrom,aidto:::[cctype];**

where:

**aidfrom,aidto**= VT-1 paths for end-points of the cross-connection in the following formats:

**l<sub>xg</sub>-VT1-stspath-vtpath** (format for line group VT-1 path)

**dgx-VT1-1-vtpath** (format for drop group VT-1 path), or

**dgx-T1-ds1no** (format for drop group VT-1 path mapped to DS1 port)

**l<sub>xg</sub>** = LG1 or LG2 (Line Group 1 or 2)

**stspath** = 1...3 (STS-1 path number)

**vtpath** = 1...28 (VT-1 path number)

**dgx** = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

**ds1no** = 1...28 (DS1 port number, see Table A, Page 2)

**cctype** = Cross-connection type:

**1WAY** (Add, Drop or Pass-through)

**2WAY** (default, Add/Drop or Pass-through)

**2WAYPR** (Single-Hub, Protected Add/Drop, for UPPS Rings only)

**2WAYBR** (Double-Hub, Protected Add/Drop, for UPPS Rings only)

**1WAYPR** (Protected Drop-and-Continue, for UPPS Rings only)

---

Page 12

## Edit VT-1 Cross-Connection

- [10] See NOTES 5 and 6. Enter the following commands, as needed, to determine the primary state (pst) of the VT-1 paths to which the cross-connection is made (DLP-217):

**RTRV-VT1:[tid]:lgx-VT1-stspath-vtpath:[ctag];** (line group path)

- or -

**RTRV-VT1:[tid]:dgx-VT1-1-vtpath:[ctag];** (drop group path)

- or -

**RTRV-VT1:[tid]:ALL:[ctag];** (all assigned VT-1 paths)

where:     lgx = LG1 or LG2 (line group)  
          stspath = 1...3  
          vtpath = 1...28  
          dgx = DG1, DG2 or DG3 (drop group)

---

AND

---

- [11] From the response, if the primary state is IS-NR for any VT-1 paths to which the cross-connection is made, enter the following commands, as needed, to edit the primary state to OOS-MA-AS (DLP-217):

**ED-VT1:[tid]:lgx-VT1-stspath-vtpath:[ctag]::::MA;** (line group path)

- or -

**ED-VT1:[tid]:dgx-VT1-1-vtpath:[ctag]::::MA;** (drop group path)

where:     lgx = LG1 or LG2 (line group)  
          stspath = 1...3  
          vtpath = 1...28  
          dgx = DG1, DG2 or DG3 (drop group)

---

↓

Page 11

**NOTES: 5.** *The ED-CRS-VT1 command is used to change the cross-connection-type of an existing cross-connection. The only permissible conversions are:*

*2WAY -to- 2WAYPR*

*2WAY -to- 2WAYBR*

*2WAYPR -to- 2WAY*

*2WAYBR -to- 2WAY*

*Any other conversions require deleting and then reentering the cross-connection.*

- 6.** *The primary state of the VT-1 paths that are cross-connected to must be OOS-MA-AS before the cross-connection can be edited.*

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 10 of 19	221

## Edit VT-1 Cross-Connection (cont)

- [12] Edit the cross-connection specifying the line group (*aidvtp\_lg*) and drop group (*aidvtp\_dg*) VT-1 paths and the new cross-connection type (*cctype\_ed*) by entering the command:

**ED-CRS-VT1:[tid]:aidvtp\_lg,aidvtp\_dg:::[cctype\_ed];**

where:

**aidvtp\_lg** = Line group VT-1 path for originating end-point of the cross-connection in the following format:

**lgx-VT1-stspath-vtpath**

lgx = LG1 or LG2 (Line Group 1 or 2)

stspath = 1...3 (STS-1 path number)

vtpath = 1...28 (VT1 path number)

**aidvtp\_dg** = Drop group VT-1 path for terminating end-point of the cross-connection in the following formats:

**dgx-VT1-1-vtpath** (format for drop group VT-1 path) or

**dgx-T1-ds1no** (format for drop group VT1 path mapped to DS1 port)

dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

vtpath = 1...28 (VT-1 path number)

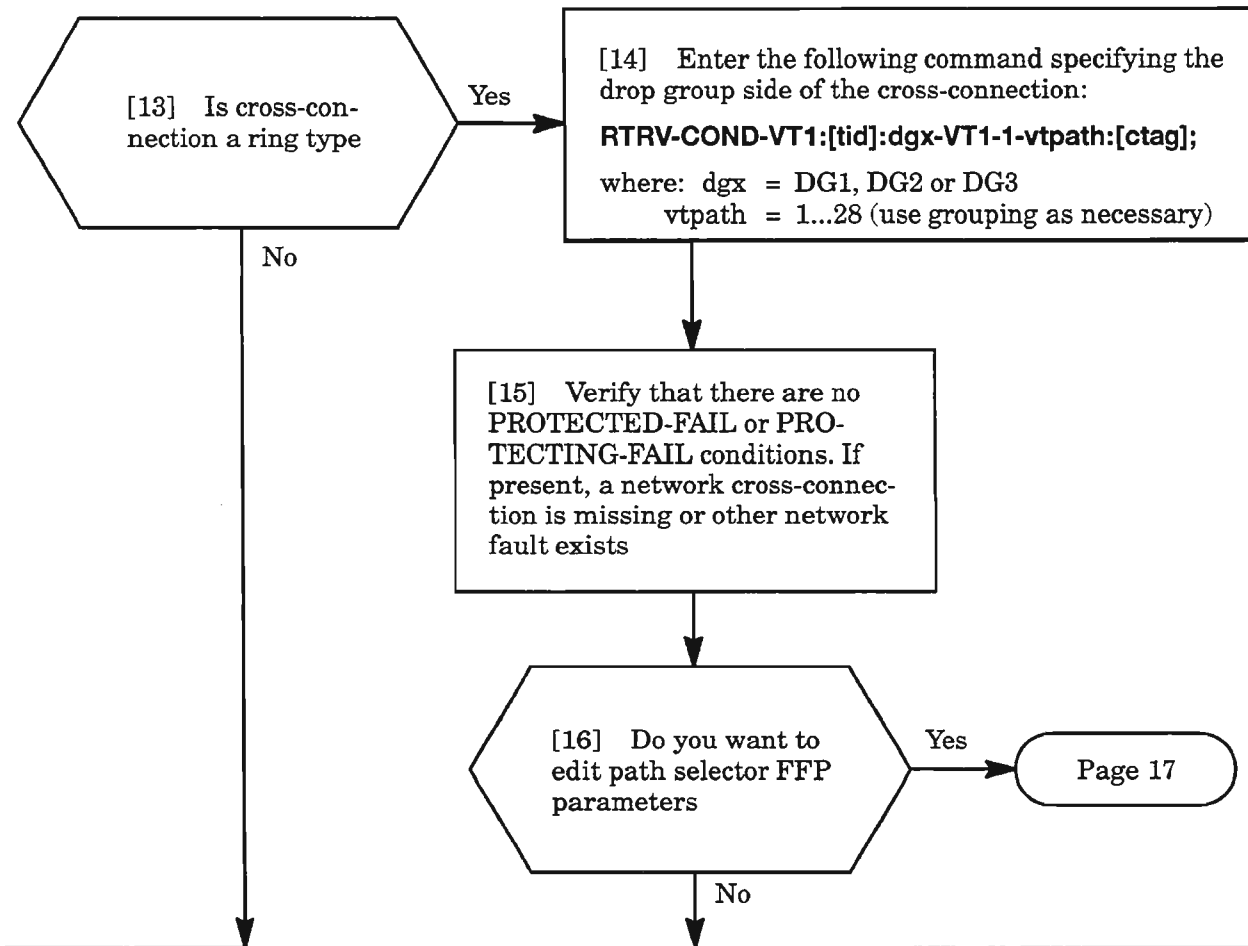
**cctype\_ed** = New cross-connection type:

**2WAY** (change from 2WAYPR or 2WAYBR; see Figure 5, Page 13, for examples) For 2WAYPR -to- 2WAY conversion, the *aidvtp\_lg* parameter must specify either of the two line group VT-1 paths. The constituent cross-connection segments between the drop group VT-1 path (identified by the *aidvtp\_dg* parameter) and the implied line group VT-1 path, will be deleted, as will the FFP entity. What remains at successful completion of this command is a 2WAY cross-connection between the specified line group and drop group facilities

**2WAYPR** (change from 2WAY; see Figure 6, Page 14, for example) For 2WAY -to- 2WAYPR conversion, the *aidvtp\_lg* parameter must specify a line VT-1 path and the *aidvtp\_dg* parameter must specify a drop group VT-1 path. All semantic checkings, default settings, and automatic creation of the FFP entity are performed as stated in the ENT-CRS-VT1 command specification. New constituent cross-connection segments that involve the implied line VT-1 path will be created, as will the FFP entity

**2WAYBR** (change from 2WAY; see Figure 6 for example) For 2WAY -to- 2WAYBR conversion, the *aidvtp\_lg* parameter must specify a line VT-1 path and the *aidvtp\_dg* parameter must specify a drop group VT-1 path. All semantic checkings, default settings, and automatic creation of the FFP entity are performed as stated in the ENT-CRS-VT1 command specification. New constituent cross-connection segments that involve the implied line VT-1 path will be created, as will the FFP entity

## Edit (Enter) VT-1 Cross-Connection (cont)



[17] Place the VT-1 paths back into service by entering the commands (DLP-217):

**ED-VT1:[tid]:lgx-VT1-stspath-vtpath:[ctag]:::IS;** (line group path)

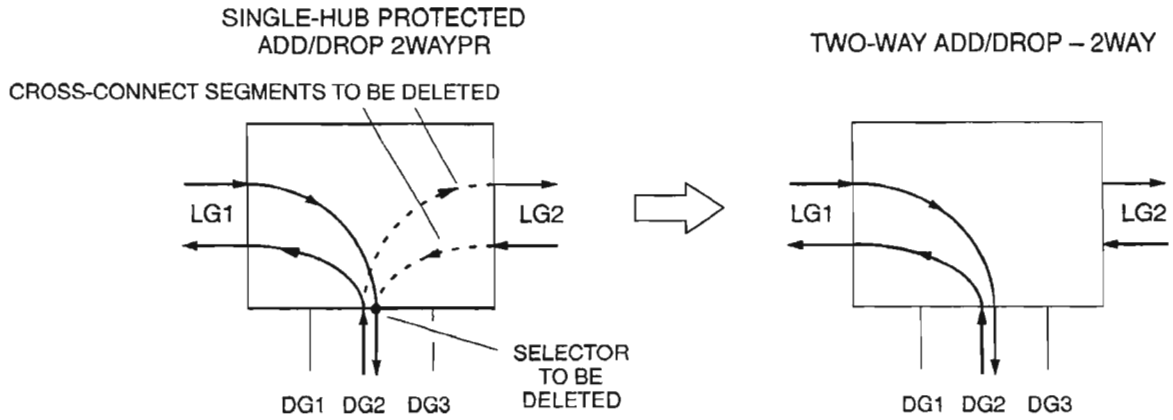
– or –

**ED-VT1:[tid]:dgx-VT1-1-vtpath:[ctag]:::IS;** (drop group path)

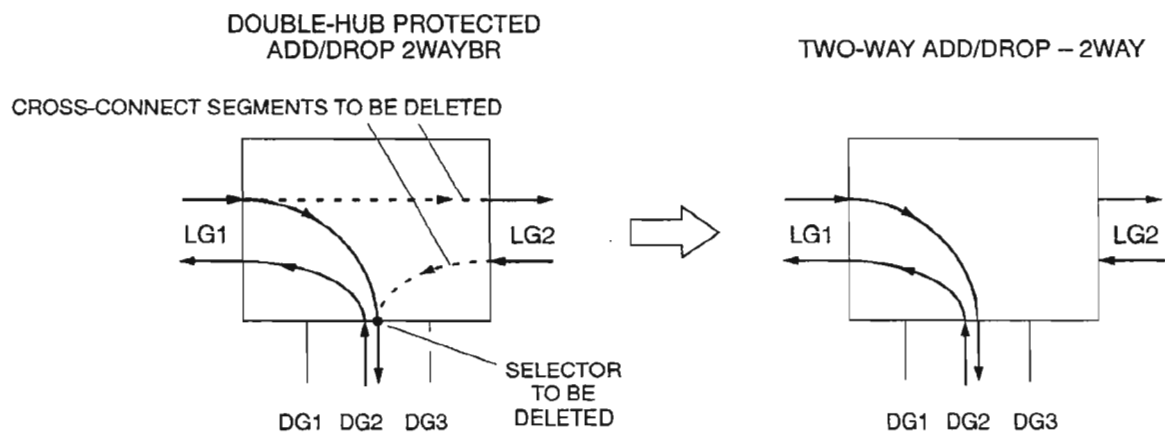
where:    lgx = LG1 or LG2 (line group)  
          stspath = 1...3  
          dgx = DG1, DG2 or DG3 (drop group)  
          vtpath = 1...28

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 12 of 19	221





(ED-CRS-VT1::aidvtp\_lg,aidvtp\_dg::cctype\_ed;)  
 ED-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath::2WAY;  
 EXAMPLE ENTRY:  
**ED-CRS-VT1::LG1-VT1-3-12,DG2-VT1-1-12::2WAY;**

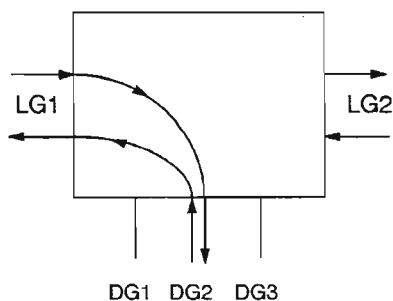


(ED-CRS-VT1::aidvtp\_lg,aidvtp\_dg::cctype\_ed;)  
 ED-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath::2WAY;  
 EXAMPLE ENTRY:  
**ED-CRS-VT1::LG1-VT1-3-12,DG2-VT1-1-12::2WAY;**

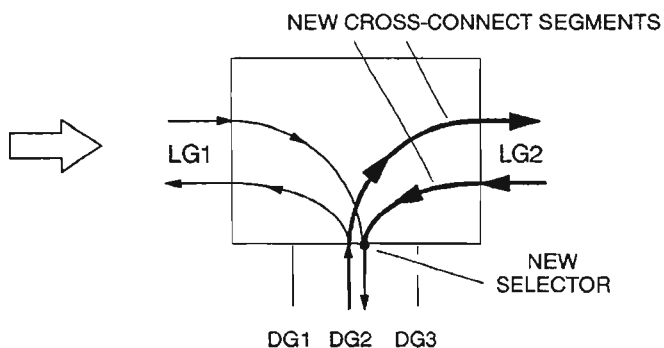
A7908

**Figure 5. Edit 2WAYPR or 2WAYBR Cross-Connections -to- 2WAY Cross-Connection (VT-1)**

TWO-WAY ADD/DROP – 2WAY



SINGLE-HUB PROTECTED ADD/DROP 2WAYPR



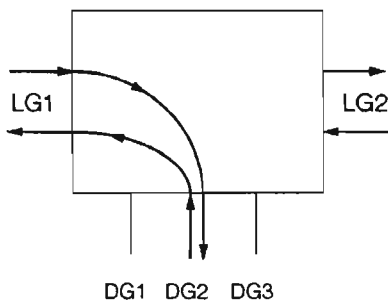
(ED-CRS-VT1::aidstsp\_lg,aidstsp\_dg::cctype\_ed;)

ED-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath::2WAYPR;

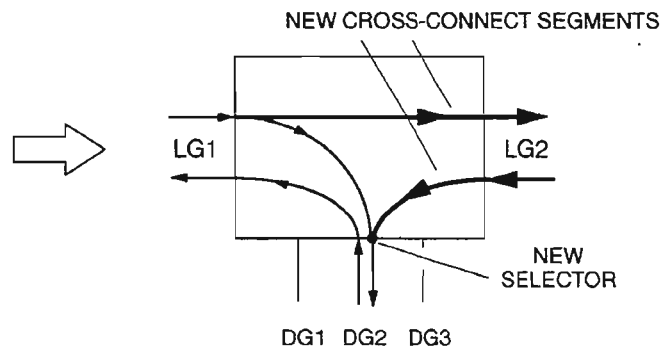
EXAMPLE ENTRY:

ED-CRS-VT1::LG1-VT1-3-12,DG2-VT1-1-12::2WAYPR;

TWO-WAY ADD/DROP – 2WAY



DOUBLE-HUB PROTECTED ADD/DROP 2WAYBR



(ED-CRS-VT1::aidvtp\_lg,aidvtp\_dg::cctype\_ed;)

ED-CRS-VT1::lgx-VT1-stspath-vtpath,dgx-VT1-stspath-vtpath::2WAYBR;

EXAMPLE ENTRY:

ED-CRS-VT1::LG1-VT1-3-12,DG2-VT1-1-12::2WAYBR;

A7910

Figure 6. Edit 2WAY Cross-Connection -to- 2WAYPR or 2WAYBR Cross-Connections (VT-1)

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 14 of 19	221

## Delete VT-1 Cross-Connection

- [18] See NOTE 7. Enter the following commands, as needed, to determine the primary state (pst) of the VT-1 paths associated with the cross-connection being deleted (DLP-217):

**RTRV-VT1:[tid]:lgx-VT1-stspath-vtpath:[ctag];** (line group path)

- or -

**RTRV-VT1:[tid]:dgx-VT1-1-vtpath:[ctag];** (drop group path)

- or -

**RTRV-VT1:[tid]:ALL:[ctag];** (all assigned VT-1 paths)

where:     lgx = LG1 or LG2 (line group)  
          stspath = 1..3  
          dgx = DG1, DG2 or DG3 (drop group)  
          vtpath = 1..28

---

AND

---

- [19] From the response, if the primary state is IS-NR for any VT-1 paths being deleted, enter the following commands, as needed, to edit the primary state to OOS-MA-AS (DLP-217):

**ED-VT1:[tid]:lgx-VT1-stspath-vtpath:[ctag]:::MA;** (line group path)

- or -

**ED-VT1:[tid]:dgx-VT1-1-vtpath:[ctag]:::MA;** (drop group path)

where:     lgx = LG1 or LG2 (line group)  
          stspath = 1..3  
          dgx = DG1, DG2 or DG3 (drop group)  
          vtpath = 1..28

---

↓

Page 16

**NOTE: 7.** *The primary state of the VT-1 paths associated with the cross-connection being deleted must be OOS-MA-AS.*

## Delete VT-1 Cross-Connection (cont)

[20] See NOTE 8. Delete the cross-connection specifying the end-point VT-1 paths (aidfrom, aidto) by entering the command:

**DLT-CRS-VT1:[tid]:aidfrom,aidto:[ctag];**

where:

**aidfrom,aidto** = VT-1 path end-points of the cross-connection in the following formats:  
**l<sub>xg</sub>-VT1-stspath-vtpath** (format for line group VT-1 path),  
**dgx-VT1-1-vtpath** (format for drop group VT-1 path), or  
**dgx-T1-ds1no** (format for drop group VT-1 path mapped to DS1 port)  
l<sub>xg</sub> = LG1 or LG2 (Line Group 1 or 2)  
stspath = 1...3 (STS-1 path number)  
vtpath = 1...28 (VT-1 path number)  
dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

---

**NOTE: 8.** *This command deletes a VT1-level cross-connection previously established by an ENT-CRS-VT1. The aidfrom and aidto parameters must uniquely identify an existing cross-connection. If the parameters are ranged or grouped to specify multiple connections (by mapping, one-to-one, n VT1 end-points to n VT1 end-points), each connection is considered for deletion individually, one after the other. A PRTL response is generated if all the specified cross-connections cannot be deleted. The successful deletion of a ring cross-connection also automatically deletes the associated Fast Facility Protection (FFP) entity. The deletion of a cross-connection is conditional on its current operational state; all VT1 path end-points must be OOS-MA-AS. A cross-connection must be successfully deleted using this command before the individual end-point facilities can be deleted.*

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 16 of 19	221

## Retrieve/Edit Path Selector FFP Parameters (Ring Cross-Connections Only)

[21] Enter the command:

**RTRV-FFP-VT1:[tid]:aid:[ctag];**

where:

aid = any of the following:

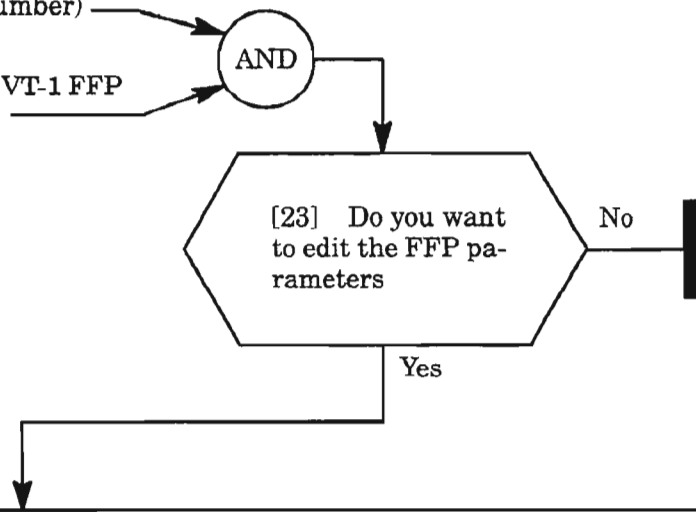
**dgx-VT1-1-vtpath** (drop group path), or

**ALL** (all assigned VT-1 FFP entities)

dgx = DG1, DG2 or DG3 (drop group)

vtpath = 1...28 (VT-1 path number)

[22] The response provides the parameter list for the VT-1 FFP entity. See GENERAL EXPLANATION, Page 18



[24] See NOTE 9. Enter the following command to determine the primary state (pst) of the drop group VT-1 path (DLP-217):

**RTRV-VT1:[tid]:dgx-VT1-1-vtpath:[ctag];** (drop group path)

where: dgx = DG1, DG2 or DG3 (drop group)

vtpath = 1...28 (VT-1 path number)

AND

[25] From the response, if the primary state is IS-NR, enter the following command to edit the primary state to OOS-MA-AS (DLP-217):

**ED-VT1:[tid]:dgx-VT1-1-vtaph:[ctag]:::MA;** (drop group path)

where: dgx = DG1, DG2 or DG3 (drop group)

vtpath = 1...28 (VT1 path number)

Page 19

**NOTE: 9.** The primary state of the drop group VT-1 path associated with the cross-connection must be OOS-MA-AS before the path selector FFP parameters can be edited.

ISSUE 2	JULY 1994
ALCL 363-203-502	DLP
PAGE 17 of 19	221

**GENERAL EXPLANATION**  
**"RTRV-FFP-VT1"**

**RESPONSE**

```
M      sid year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-FFP-VT1:[tid]:aid:[ctag]; */
      "aid,pref:ffp_nblk"
```

**WHERE**

- aid** = The drop group VT-1 path associated with the ring FFP entity in the following format:
- dgx-VT1-stspath1-vtpath** (drop group VT-1 path)
- dgx = DG1, DG2 or DG3 (drop group)
- stspath1 = 1 (stspath to drop group)
- vtpath = 1..28 (VT-1 path)
- pref** = Preference of FFP selector between two ring paths (line groups) for revertive switching. The ring path selected is the protected path and the other ring path is the protection path. Valid values are:
- LG1** (Line Group 1)
- LG2** (Line Group 2)
- ffp\_nblk** = The FFP parameter block. The block is made up of named parameters followed by an equal sign and a selected value. The parameters and their values are:
- RVRTV** = **Y** Yes, revertive switching mode is enabled. The FFP selector reverts to the preferred ring path (selected with the pref parameter) after a manual switch is released or after cause for automatic switch clears
- N** No, nonrevertive switching
- [RVTWTR]** = **0...12** (minutes) Wait to restore delay for FFP selector. This parameter determines how long to wait before reverting to the ring path selected with the pref parameter. This parameter is applicable only if revertive switching is selected

## Retrieve/Edit Path Selector FFP Parameters (Ring Cross-Connections Only)

[26] Edit the FFP parameters being changed by entering the command:

**ED-FFP-VT1:[tid]:aid:[ctag]:::[RVRTV=yn,RVTWTR=min,PREF=lgx];**

where: aid = either of the following:

**dgx-VT1-1-vtpath** (drop group VT-1 path), or

**ALL** (all assigned VT-1 FFP entities)

dgx = DG1, DG2 or DG3 (drop group)

vt1 = 1...28 (VT-1 path)

yn = **Y** or **N** for Yes (enable) or No (disable) revertive switching. If enabled, the FFP selector reverts to the preferred ring path (selected with the pref parameter) after a manual switch is released or after cause for automatic switch clears

min = **0...12** minutes; wait to restore delay for FFP selector. This parameter determines how long to wait before reverting to the ring path selected with the pref parameter.

This parameter is allowed only if revertive switching is selected

lgx = **LG1** or **LG2** for Line Group 1 or 2; preference of FFP selector between two ring paths (line groups) for revertive switching. The ring path selected is the protected path and the other ring path is the protection path

---

AND

---

[27] Enter the following command to place the drop group VT1 path back into service (DLP-217):

**ED-VT1:[tid]:dgx-VT1-1-vtpath:[ctag]:::IS;** (drop group path)

where: dgx = DG1, DG2 or DG3 (drop group)

vtpath = 1...28 (VT-1 path)







[1] Enter command:

**RTRV-EC1:[tid]:aid:[ctag];**

where: aid = one of the following:

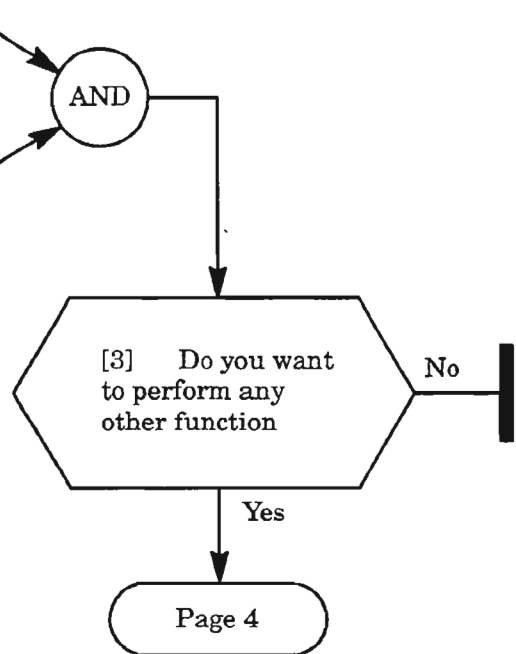
**dgx-EC1-stspath1**

dgx = DG1, DG2 or DG3 (Drop Group)

stspath1 = 1 (STS-1 path)

**ALL** (all assigned EC1 facilities)

[2] See GENERAL EXPLANATION, Page 2, for the provisionable parameters and states for the aid



**GENERAL EXPLANATION  
"RTRV-EC1"**

**RESPONSE**

```

M          SID year-month-day hr:min:sec
          ctag COMPLD
          /* RTRV-EC1:[tid]:aid:[ctag]; */
          "dgx-EC1-stspath1::[ec1_nblk]:pst,[sst],[ast]"
  
```

**WHERE**

**dgx**        **DG1** (Drop Group 1)  
              **DG2** (Drop Group 2)  
              **DG3** (Drop Group 3)

**stspath1**    **1**        (STS-1 path for drop group, limited to one STS-1 path for OC-3 rate line groups)

**ec1\_nblk**    List of any of the following expressions (assignments):  
 Enable/Disable Automatic AIS (Alarm Insertion Signal) insertion for BERL-HT (Bit Error Ratio Line - High Threshold) (SFBER):

**AUTOAIS = Y**        Enable  
       **AUTOAIS = N**        Disable

Enable/Disable Line Build-out (LINEBLDOUT):

**LINEBLDOUT = Y**    Enable  
       **LINEBLDOUT = N**    Disable

**pst**        Primary state (condition) of the EC1 facility:

**IS-NR**            Facility is in-service and normal  
       **IS-ANR**         Facility is in-service but an abnormal condition exists. It may be able to perform all or only part of its designed service function (e.g., due to degrade)  
       **OOS-MA-AS**      Out-of-service state for provisioning activity; facility is assigned  
       **OOS-MA-UAS**    Out-of-service state for provisioning activity; facility is not assigned (default)  
       **OOS-MT**         Out-of-service state for maintenance activity such as fault, performance monitoring or testing; facility is assigned

**sst**        Secondary state of the EC1 facility:

**ACT**             Active; this facility is providing service (not standby)  
       **AINS**            Automatic In-service; the equipment is automatically placed In-Service (pst = IS) when plugged in  
       **ACT**             Active; this facility is providing service (not standby)  
       **AINS**            Automatic In-service; the equipment is automatically placed In-Service (pst = IS) when plugged in  
       **APSI**            Automatic Protection Switch Inhibited; for a protected entity, it represents lock-on. For a protecting entity, it represents lock-out

*Continued on next page*

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 2 of 9	222

**GENERAL EXPLANATION (cont)**  
**"RTRV-EC1"**

**RESPONSE**

```

M      SID year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-EC1:[tid]:aid:[ctag]; */
      "dgx-EC1-stspath1::[ec1_nblk]:pst,[sst],[ast]"

```

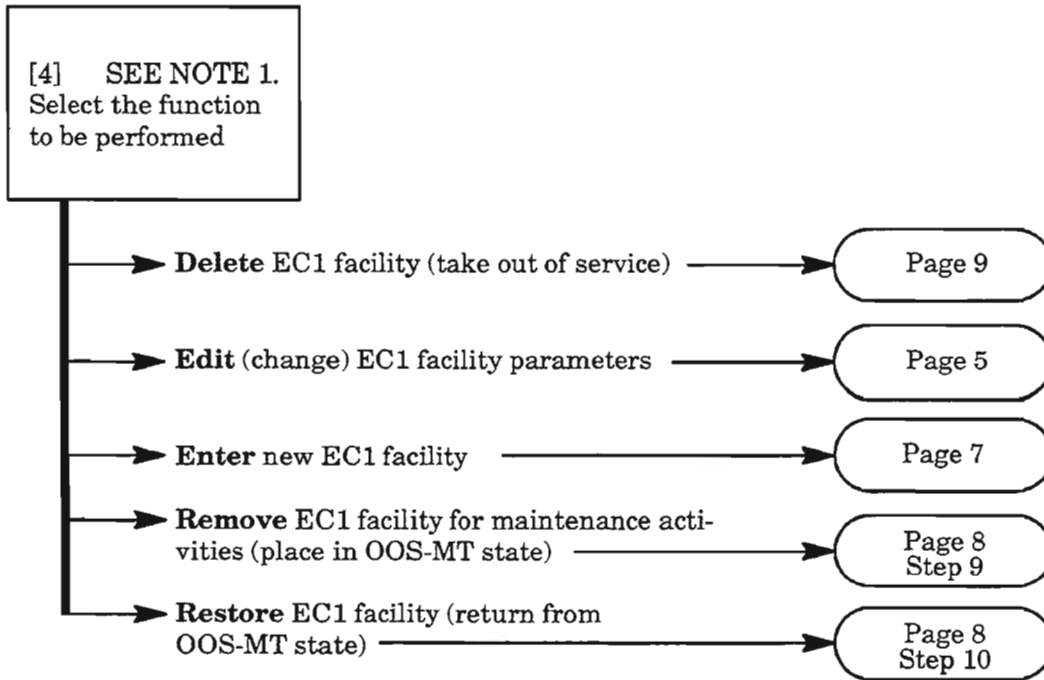
**WHERE**

**sst**      Secondary state of the EC1 facility: (cont)

<b>BOOT</b>	Processor running bootcode
<b>DX</b>	Duplex configuration
<b>EQ</b>	Equipped; NEP plug-in(s) are present
<b>FLT</b>	Fault; the facility is OOS-MT because it is faulty
<b>FRCD</b>	Forced; change of state was forced
<b>MAN</b>	Manual; the facility has been manually taken OOS-MT for maintenance activities
<b>MEA</b>	Mismatch of equipment and attributes; the installed equipment does not match the provisioned equipment
<b>OVFL</b>	Overflow; for the LOG and Database Capture Buffer (DCB) objects that are not provisioned with wrap buffer, this indicates that the object has depleted its memory resources
<b>PROT</b>	Entity is protection (not working) side
<b>PWR</b>	Power; entity is OOS-MT because it has no power
<b>STBY</b>	Standby; this entity is not providing service
<b>SWDL</b>	Software downloaded
<b>SWVERR</b>	Software version error
<b>SX</b>	Simplex configuration
<b>TB</b>	Diagnostic test busy
<b>TSTF</b>	Test failure; facility is OOS-MT because of test failure
<b>WORK</b>	Entity is working side

**ast**      Associated state of the EC1 facility:

<b>FAF</b>	Facility failure; associated supporting facility is OOS
<b>FEF</b>	Family of equipment failure; associated controlling equipment is OOS
<b>UEA</b>	Underlying Entity Abnormal; the associated supporting entity is IS-ANR or OOS



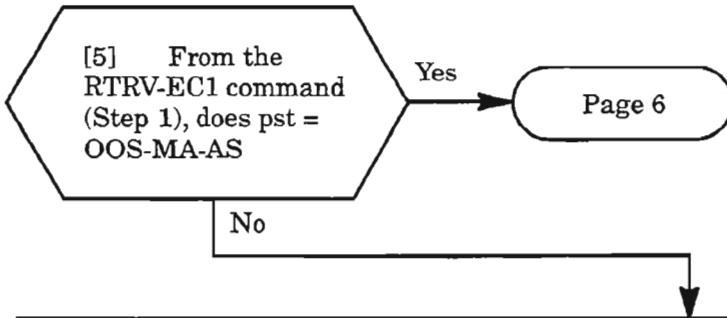
**NOTE: 1.** To select any of the decision paths listed, certain requirements apply to the affected equipment or facility (referred to as "object" in the following list). When selecting a decision path, the following information is pertinent:

- The Enter selection is used to add an object to the current configuration (i.e., to place it into service). The object's provisionable parameters also can be changed from their default value when the object is being entered. This selection is only valid if the current Primary State of the object is Unassigned (OOS-MA-UAS).
- The Edit selection is used to change provisionable parameters of the object after it is already entered into the configuration.
- The Delete function removes the object from the current configuration (i.e., returns the object's Primary State to unassigned, OOS-MA-UAS). Before deleting the object, supported entities (if any) must first be deleted or the delete command will be denied.
- The Remove (RMV) command is used to place an object into the maintenance state (OOS-MT) for testing. It is only valid if the object's current Primary State is In-Service (IS-NR or IS-ANR). Otherwise, the edit command must be used (i.e., from OOS-MA to OOS-MT).
- The Restore (RST) command is used to return an object from the maintenance state (OOS-MT) to the In-Service state (IS).

Execution of a command may be denied if a possible service interruption is detected or if the object is in an incorrect state. (See TNG-514 for more information.)

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 4 of 9	222

## Edit EC1 Facility

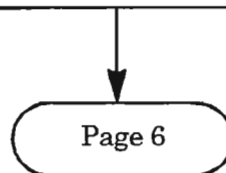


[6] Enter the following command to place facility in OOS-MA-AS state:

**ED-EC1:[tid]:dgx-EC1-stspath1:[ctag]:::MA;**

where: dgx = DG1    Drop Group 1  
          DG2    Drop Group 2  
          DG3    Drop Group 3

stspath1 = 1        STS-1 path for drop group



## Edit EC1 Facility (cont)

[7] Enter the following command specifying the parameters to be changed:

**ED-EC1:[tid]:dgx-EC1-stspath1:[ctag]:::[AUTOAIS=a,LINEBLDOUT=b]:[pst];**

where: dgx = DG1 Drop Group 1  
          DG2 Drop Group 2  
          DG3 Drop Group 3

stspath1 = 1 STS-1 path for drop group

a = For AUTOAIS parameter, enter:  
    Y Yes, to enable AIS insertion for BERL-HT condition, or  
    N No, to disable AIS insertion for BERL-HT condition

b = For LINEBLDOUT (Line Build-out) parameter, enter:  
    Y Yes, to enable line build-out capability, or  
    N No, to disable line build-out capability

The value selected depends on the type of coax cable used and the distance to the STS-1 cross-connect.

If cable is AT&T 728A or equivalent:  
0-225 feet, enter: LINEBLDOUT=Y  
226-450 feet, enter: LINEBLDOUT=N

If cable is AT&T 734A or equivalent:  
0-200 feet, enter: LINEBLDOUT=Y  
201-400 feet, enter: LINEBLDOUT=N

If cable is AT&T 735A or equivalent:  
0-110 feet, enter: LINEBLDOUT=Y  
111-220 feet, enter: LINEBLDOUT=N

pst = Primary state (condition) of the EC1 facility:  
IS Place facility in in-service state after completing command  
OOS Place facility in out-of-service state for provisioning activity; the facility must be placed in this state before modifying its parameters  
MA Memory administration (synonymous with OOS)  
MT Maintenance; place facility in maintenance state (OOS-MT)  
(null) No entry for pst means that the primary state of the equipment will not change after command is executed

---

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 6 of 9	222

## Enter EC1 Facility

[8] See NOTE 2. Enter the following command for the new facility:

**ENT-EC1:[tid]:dgx-EC1-stspath1:[ctag]:::[AUTOAIS=a,LINEBLDOUT=b]:[pst];**

where: dgx = DG1 Drop Group 1  
          DG2 Drop Group 2  
          DG3 Drop Group 3

stspath1 = 1 STS-1 path for drop group

a = For AUTOAIS parameter, enter:

Y Yes, to enable AIS insertion for BERL-HT condition, or  
N No, to disable AIS insertion for BERL-HT condition (default)

b = For LINEBLDOUT (Line Build-out) parameter, enter:

Y Yes, to enable line build-out capability (default), or  
N No, to disable line build-out capability

The value selected depends on the type of coax cable used and the distance to the STS-1 cross-connect.

If cable is AT&T 728A or equivalent:

0-225 feet, enter: LINEBLDOUT=Y

226-450 feet, enter: LINEBLDOUT=N

If cable is AT&T 734A or equivalent:

0-200 feet, enter: LINEBLDOUT=Y

201-400 feet, enter: LINEBLDOUT=N

If cable is AT&T 735A or equivalent:

0-110 feet, enter: LINEBLDOUT=Y

111-220 feet, enter: LINEBLDOUT=N

pst = Primary state (condition) of the EC1 facility:

IS Place facility in in-service state after completing command (default)

OOS Place facility in out-of-service state for provisioning activity

MA Memory administration (synonymous with OOS)

MT Maintenance; place facility in maintenance state (OOS-MT)

---

**NOTE: 2.** *The associated LIF/LDR equipment must be assigned before entering EC1 facility (see DLP-218 and DLP-219).*

## Remove EC1 Facility (Place Facility in Maintenance State)

[9] Enter the following command:

**RMV-EC1:[tid]:dgx-EC1-stspath1:[ctag];**

where: dgx = DG1 Drop Group 1  
          DG2 Drop Group 2  
          DG3 Drop Group 3

stspath1 = 1 STS-1 path for drop group

---

## Restore EC1 Facility (Remove from Maintenance State)

[10] See NOTE 3. Enter the following command:

**RST-EC1:[tid]:dgx-EC1-stspath1:[ctag];**

where: dgx = DG1 Drop Group 1  
          DG2 Drop Group 2  
          DG3 Drop Group 3

stspath1 = 1 STS-1 path for drop group

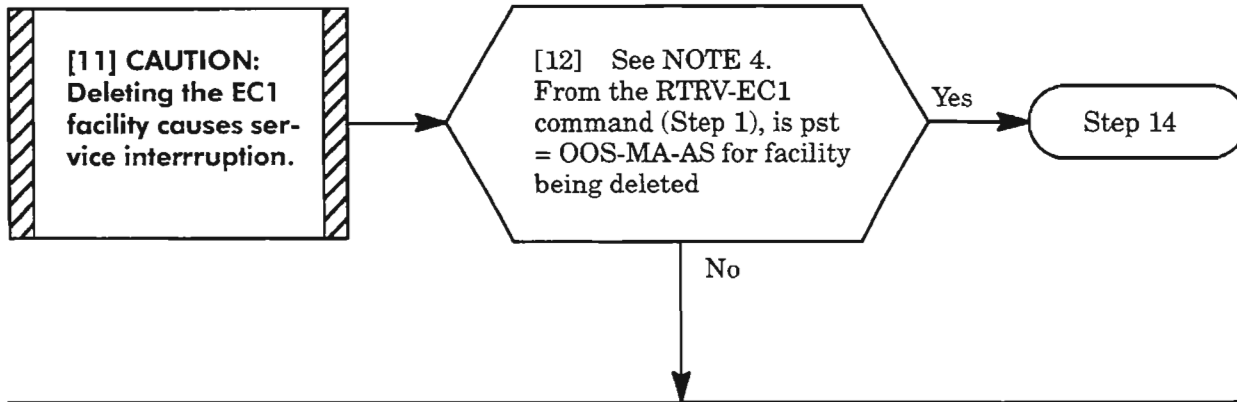
---

**NOTE: 3.** *The facility returns to In-Service (IS) state when this command is entered.*

ISSUE 1	MAY 1994
ALCL 363-203-502	DLP
PAGE 8 of 9	222



## Delete EC1 Facility



[13] Enter the following command to place the facility in the OOS-MA-AS state:

**ED-EC1:[tid]:dgx-EC1-stspath1:[ctag]:::MA;**

where: dgx = DG1 Drop Group 1  
          DG2 Drop Group 2  
          DG3 Drop Group 3

stspath1 = 1 STS-1 path for drop group

[14] Before EC1 facility can be deleted, all supported payloads and cross-connections must be deleted. Refer to NTP-011 for the procedure on discontinuing EC1 service, if necessary.

AND

[15] Enter command:

**DLT-EC1:[tid]:dgx-EC1-stspath1:[ctag];**

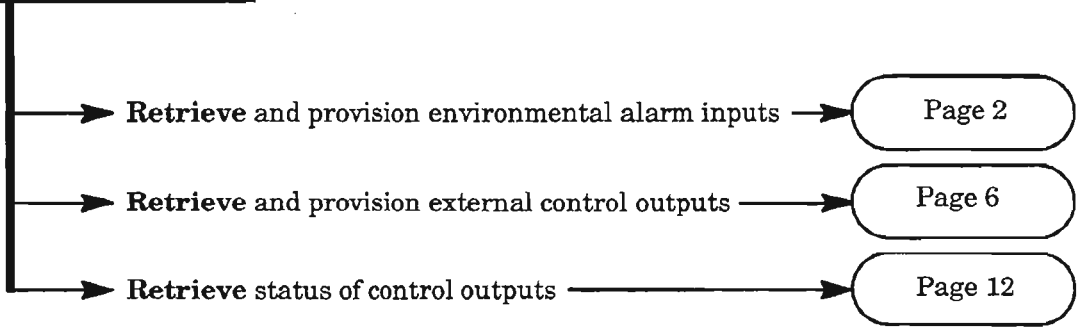
where: dgx = DG1 Drop Group 1  
          DG2 Drop Group 2  
          DG3 Drop Group 3

stspath1 = 1 STS-1 path for drop group

**NOTE: 4.** The EC1 facility must be in OOS-MA-AS state before it can be deleted.



[1] Select the task to be performed See NOTE 1.



**NOTE: 1.** Refer to *SET-ATTR-CONT* and *SET-ATTR-ENV* commands in the 1603/12 *Commands and Messages manual* for constraints that apply to CDAC operation.

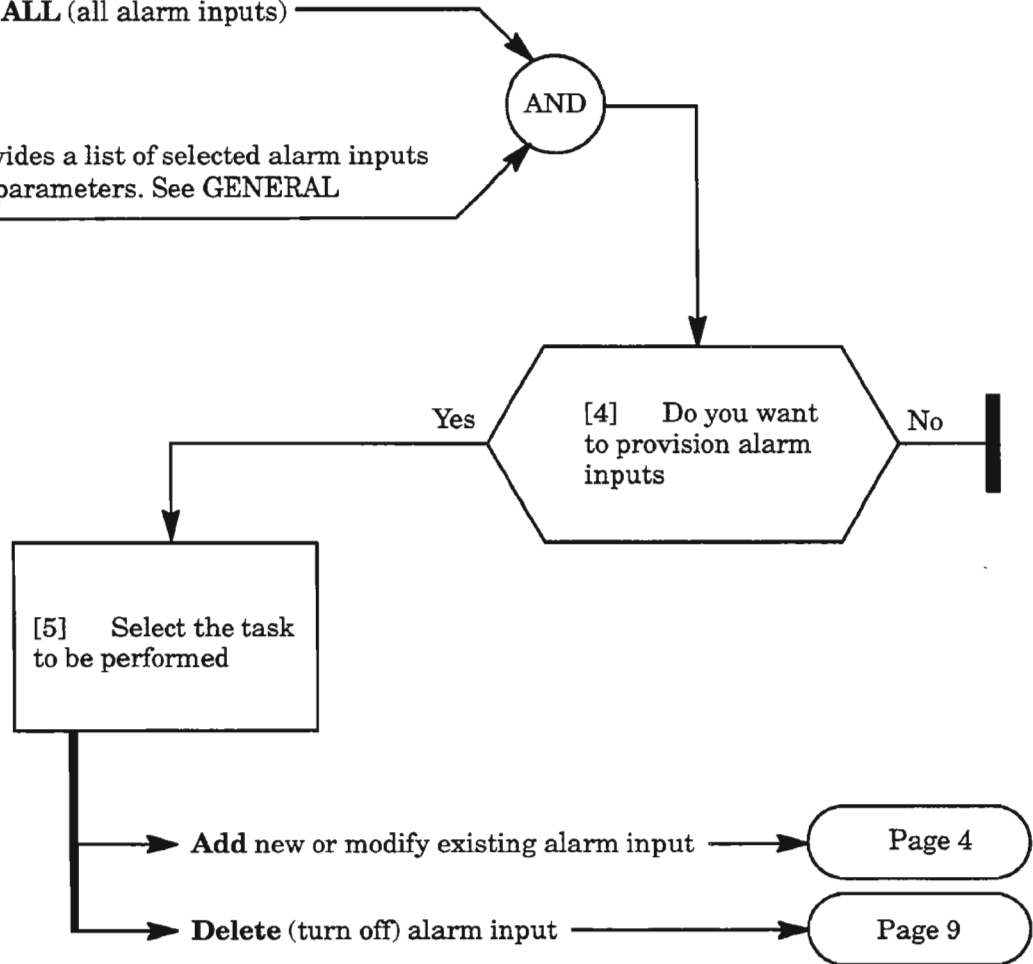
# Retrieve and Provision Environmental Alarm Inputs

[2] See NOTE 1. Enter command:

**RTRV-ATTR-ENV:[tid]:aidenv:[ctag]::[ntfcncde],  
[envname],[level],[nmode],[destid];**

where: aidenv = **ENV-x** (ENV, with x = 1...12  
alarm input number), or  
**ALL** (all alarm inputs)

[3] The response provides a list of selected alarm inputs  
with provisioned parameters. See **GENERAL  
EXPLANATION**



**NOTE: 1.** The parameters: *ntfcncde*, *envname*, *level*, *nmode* and *destid* are optional filters and are described in **GENERAL EXPLANATION**, Page 3.

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 2 of 12	223

**GENERAL EXPLANATION**  
**"RTRV-ATTR-ENV"**

**RESPONSE**

```

M      SID year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-ATTR-ENV:[tid]:ENV-envnum or ALL:[ctag]::
      [ntfncde],[envname],[level],[nmode],[destid]; */
      "ENV-envnum:[ntfncde],[envname],[level],[nmode],[destid]"
  
```

**WHERE**

**envnum** Specifies the environmental alarm input number; corresponds to the CDAC alarm inputs on the 1603/12 SM shelf backplane

1...12 (alarm input number)

**NOTE:** *The following parameters appear only for alarm inputs that are assigned (using SET-ATTR-ENV command).*

**[ntfncde]** The 2-character notification code assigned to the alarm input:

<b>CR</b>	Critical alarm
<b>MJ</b>	Major alarm
<b>MN</b>	Minor alarm
<b>NR</b>	Not reported

**[envname]** The environmental alarm type defined by the customer, such as BATTERY or HITEMP:

Alphanumeric string (1 - 10 characters)

**[level]** The state associated with an active alarm input; determines whether an open or closed external contact activates the alarm:

<b>OPEN</b>	Open external contact operates alarm
<b>CLOSED</b>	Closed external contact operates alarm

**[nmode]** Specifies whether the alarm is forwarded to a remote NE:

<b>LOCAL</b>	A state change on the alarm input is reported as an autonomous message at the local NE
<b>REMOTE</b>	In addition to the autonomous message at the local NE, the alarm is forwarded to a remote NE specified by the <i>destid</i> parameter

**NOTE:** *Environmental (ENV) alarm status changes are reported at the local NE via the REPT-ALM-ENV autonomous message. The ENV alarm conditions can be retrieved at any time using the RTRV-ALM-ENV or RTRV-COND-ENV commands.*

**[destid]** The tid (terminal ID) of the destination NE to which the alarm input status is forwarded (applies only if nmode = REMOTE):

Alphanumeric string (1 - 20 characters)

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 3 of 12	223

## Add New or Modify Existing Alarm Input

- [6] Enter the following command for the alarm input being provisioned (enter only the parameters being changed if alarm input is already entered) (see Figure 1, Page 5 for example entry):

**SET-ATTR-ENV:[tid]:ENV-envnum:[ctag]::[ntfcncde],[envname],[level],[nmode],[destid];**

where:

**envnum** = 1...12 (alarm input number)

**ntfcncde** = The 2-character notification code for the alarm input:

**CR** (Critical alarm)

**MJ** (Major alarm)

**MN** (Minor alarm)

**NA** (Not reported)

**envname** = Customer-defined alarm name (must be unique for each alarm input);  
1 - 10 character alphanumeric string (e.g., OPEN DOOR, HITEMP)

**level** = The state associated with an active alarm:

**OPEN** (open external contact operates alarm)

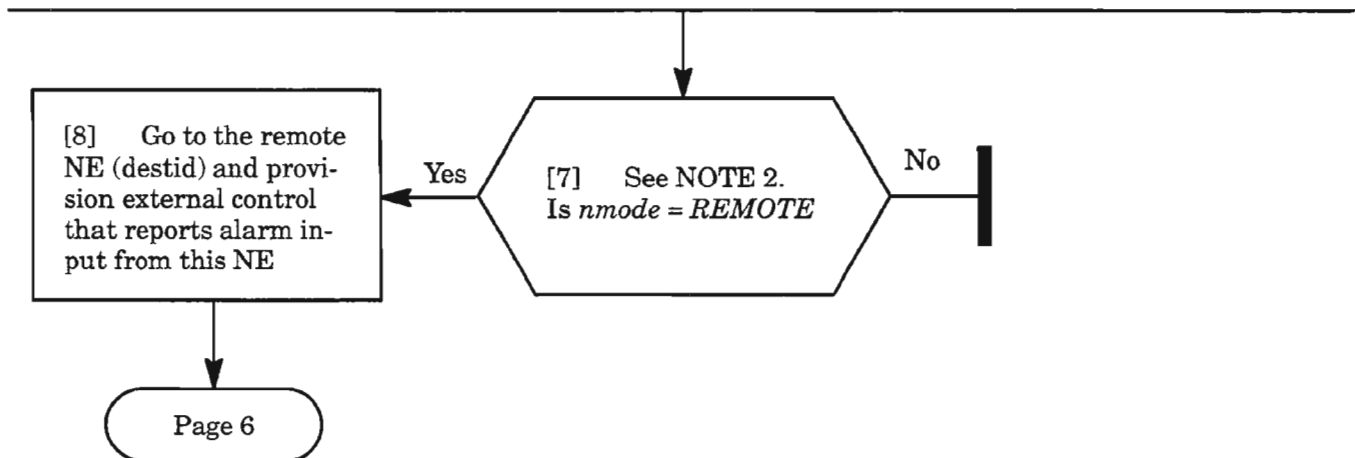
**CLOSED** (closed external contact operates alarm)

**nmode** = Specifies whether alarm is forwarded to the remote NE specified by the *destid* parameter:

**LOCAL** (A state change on the alarm input is reported as an autonomous message at the local NE)

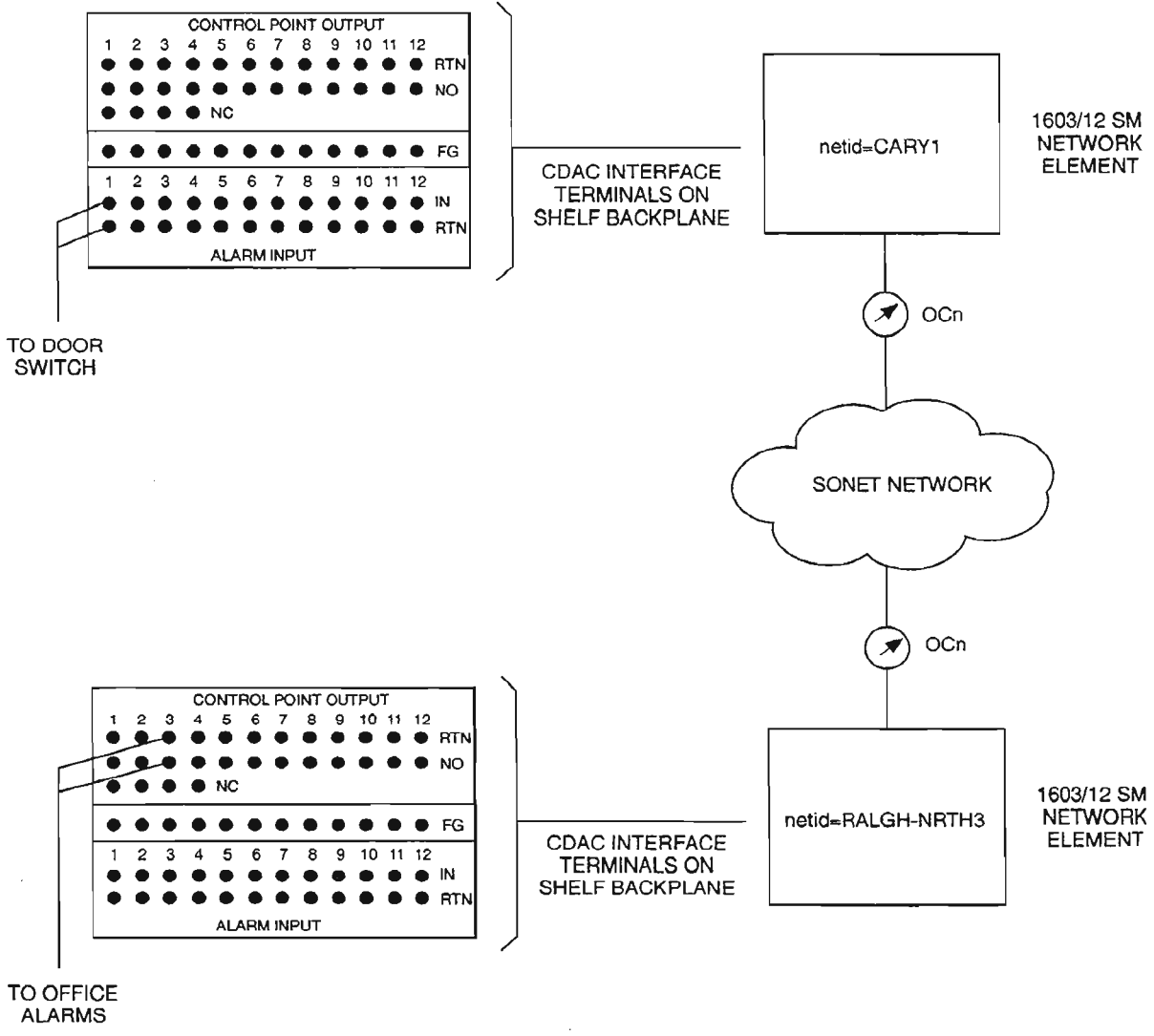
**REMOTE** (In addition to the autonomous message at the local NE, the alarm is forwarded to a remote NE specified by the *destid* parameter)

**destid** = The tid of the destination NE to which the alarm input status is forwarded (applies only if *nmode* = REMOTE);  
1 - 20 character alphanumeric string



**NOTE: 2.** If *nmode* = REMOTE and the remote NE (*destid*) is not provisioned to receive the alarm, a DLMAP alarm (*condtype* = CDACCONN or CDACPROV) is reported.

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 4 of 12	223



EXAMPLE TL1 COMMAND ENTRIES FOR REPORTING DOOR ALARM FROM CARY1 TO RALGH-NRTH3

AT CARY1:  
**SET-ATTR-ENV::ENV-1::MN,CAB\_DOOR,,CLOSED,REMOTE,RALGH-NRTH3;**

AT RALGH-NRTH3:  
**SET-ATTR-CONT::CONT-3::DOOR\_CARY1,REMOTE,CARY1,1;**

A8200

Figure 1. Example Customer-Defined Alarms and Controls (CDAC)

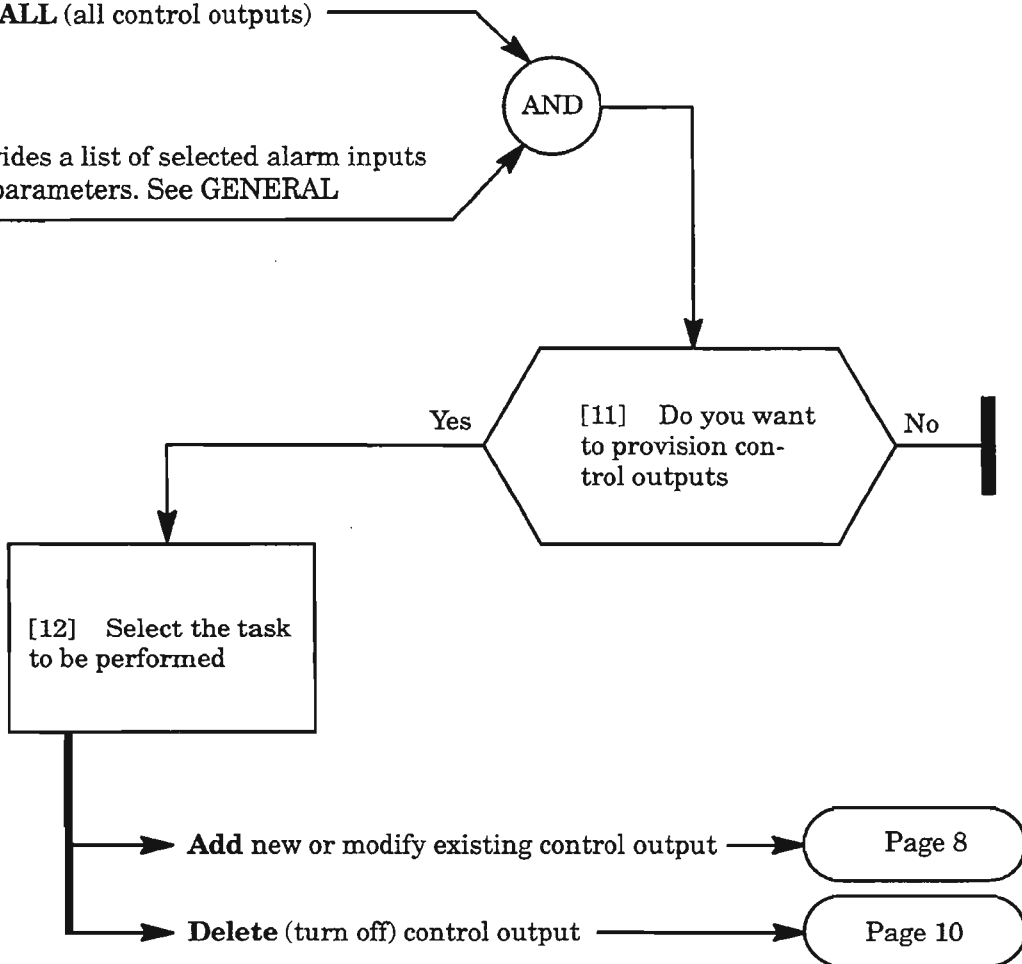
# Retrieve and Provision External Control Outputs

[9] See NOTE 3. Enter command:

**RTRV-ATTR-CONT:[tid]:aidcont:[ctag]::  
[contname],[src],[srctid],[aidenv];**

where: aidenv = **CONT-x** (CONT, with x = 1...12 control output number), or **ALL** (all control outputs)

[10] The response provides a list of selected alarm inputs with provisioned parameters. See **GENERAL EXPLANATION**



**NOTE: 3.** The parameters: contname, src, srctid, and aidenv are optional filters and are described in **GENERAL EXPLANATION**, Page 7.

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 6 of 12	223



**GENERAL EXPLANATION  
"RTRV-ATTR-CONT"**

**RESPONSE**

```

M      SID year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-ATTR-CONT:[tid]:CONT-contnum or ALL:[ctag]::
      [contname],[src],[srctid],[aidenv]; */
      "CONT-contnum:[contname],[src],[srctid],[ENV-envnum]"
  
```

**WHERE**

**contnum** Specifies the external control output number; corresponds to the CDAC Control Point Outputs on the 1603/12 SM shelf backplane

1...12 (control output number)

**NOTE:** *The following parameters appear only for control outputs that are assigned (using SET-ATTR-CONT command).*

**[contname]** The name associated with control output defined by the customer, such as AIRCOND or DOORALMNE3:

Alphanumeric string (1 - 10 characters)

**[src]** The source for the operation of the control output:

**REMOTE** Remote operation (requires SET-ATTR-ENV at remote NE specifying local NE as destination (destid))

**E2A** Serial E2A operation (allows command mode also)

**CMD** Command mode (OPR-EXT-CONT command)

**[srctid]** The tid (terminal ID) of the NE (where the alarm input is) that is the source of operation of the control output (applies only if src = REMOTE):

Alphanumeric string (1 - 20 characters)

**[envnum]** The alarm input at the remote NE (srctid) that controls the control output (applies only if src = REMOTE):

1...12 (alarm input number)

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 7 of 12	223

## Add New or Modify Existing Control Output

[13] Enter the following command for the control output being provisioned (enter only the parameters being changed if control output is already entered) (see Figure 1, Page 5, for example entry):

**SET-ATTR-CONT:[tid]:CONT-contnum:[ctag>::[contname],[src],[srctid],[ENV-envnum];**

where:

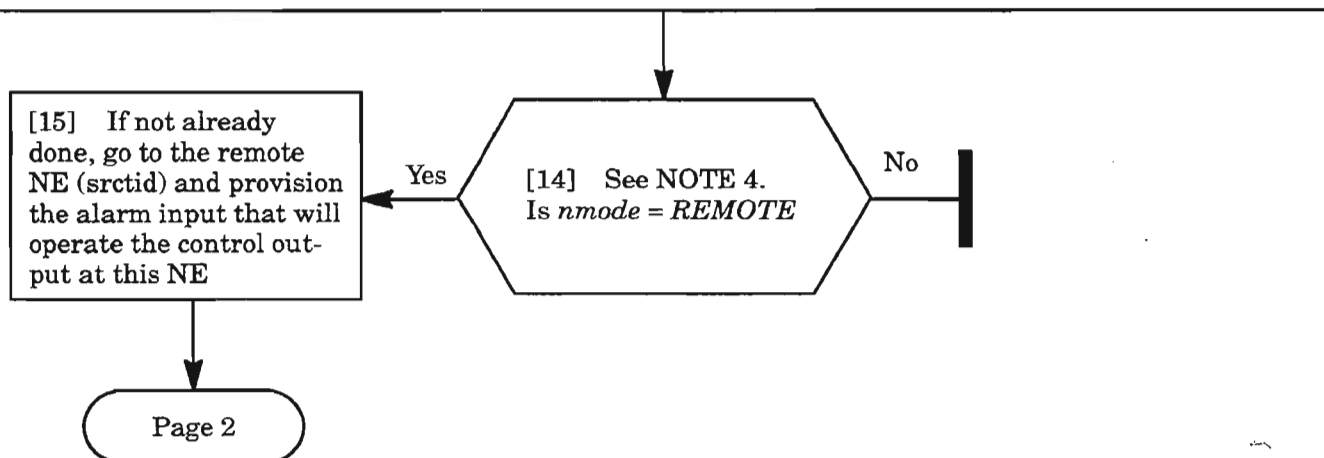
**contnum** = 1...12 (control output number)

**contname** = Customer-defined control name (must be unique for each control output)  
1-10 character alphanumeric string (e.g., DOORALMNE3, AIRCOND)

**src** = The source for the operation of the control output:  
**REMOTE** (Remote operation)  
**E2A** (Serial E2A operation, allows Command mode also)  
**CMD** (Command mode via OPR-EXT-CONT command)

**srctid** = The tid (terminal ID) of the NE (where the alarm input is) that is the source of operation of the control output (applies only if src = REMOTE);  
1-20 character alphanumeric string

**envnum** = 1...12 (The alarm input at the srctid that operates the control output (applies only if src = REMOTE)



**NOTE: 4.** If src = REMOTE and the remote NE (srctid) is not provisioned to operate the control output at this NE, a DLMAP alarm (condtype = CDACCONN or CDACPROV) is reported.

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 8 of 12	223

## Delete (Turn off) Alarm Input

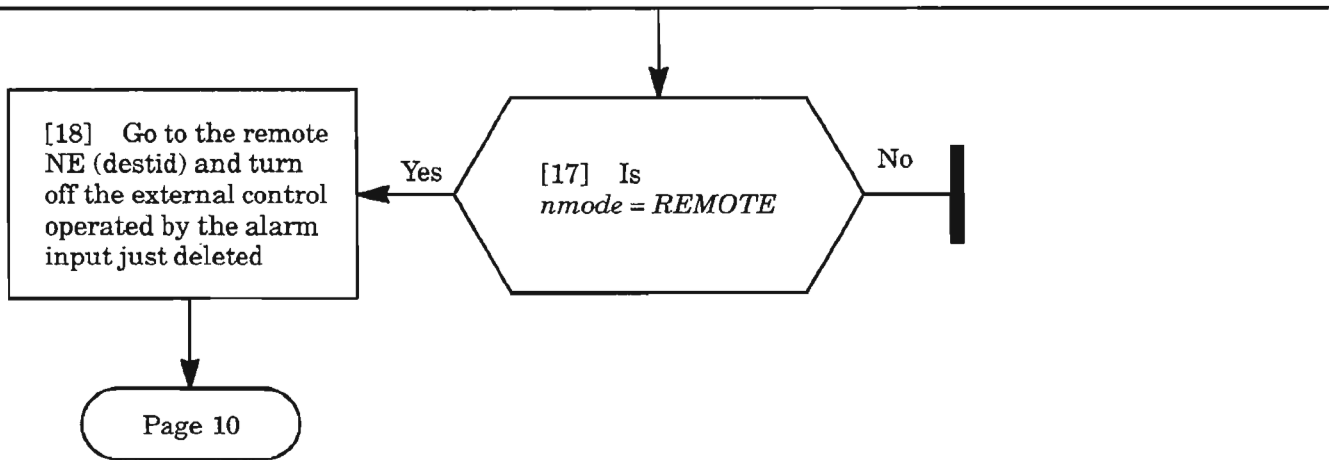
[16] Enter the following command for the alarm input being turned off (specify only the *ENV-envnum* and *envname* parameters) :

**SET-ATTR-ENV:[tid]:ENV-envnum:[ctag]::envname;**

where:

**envnum** = 1...12 (alarm input number)

**envname** = "" (double quotes with no space or characters between)



## Delete (Turn Off) Control Output

[19] Enter the following command for the control output being turned off:

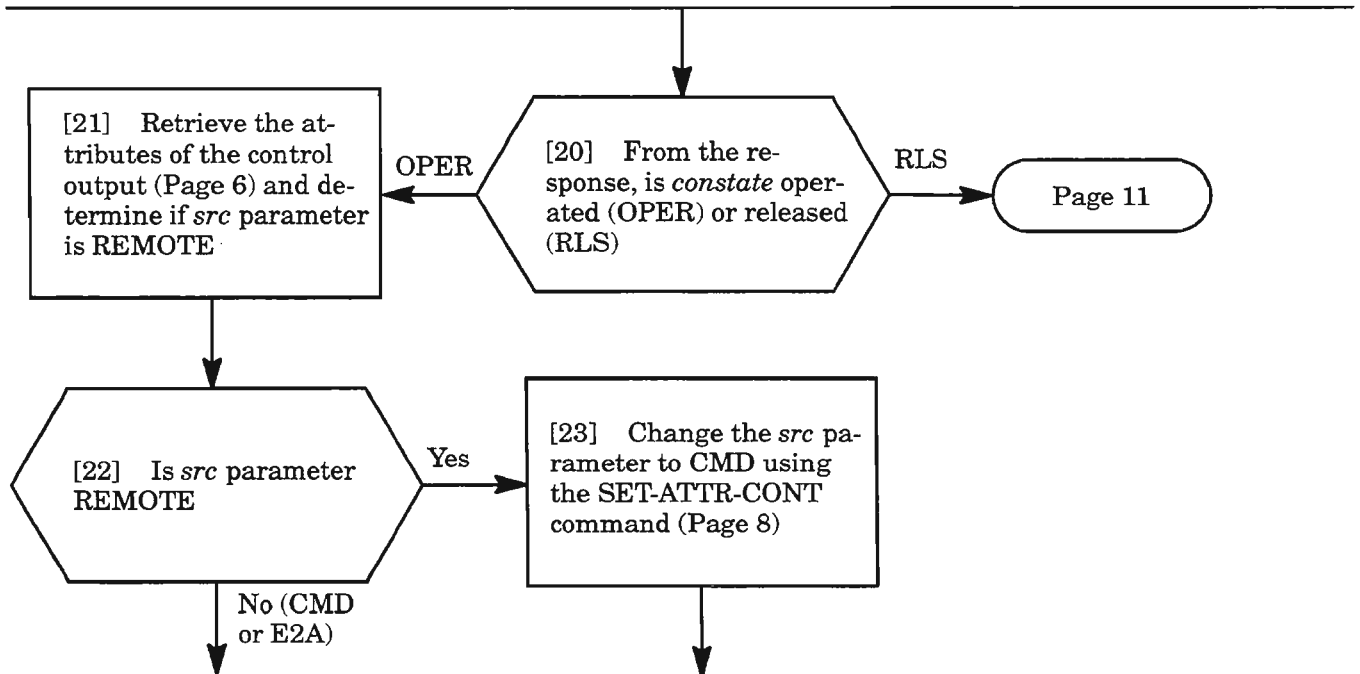
**RTRV-EXT-CONT:[tid]:CONT-contnum:[ctag];**

where:

**contnum = 1...12** (control output number)

The response is in the following format:

"CONT-contnum: [contname], dur, [contstate]"

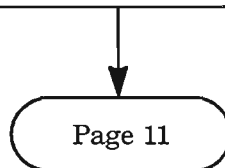


[24] Enter the following command to release the control output being turned off:

**RLS-EXT-CONT:[tid]:CONT-contnum:[ctag];**

where:

**contnum = 1...12** (control output number)



ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 10 of 12	223

## Delete (Turn Off) Control Output (cont)

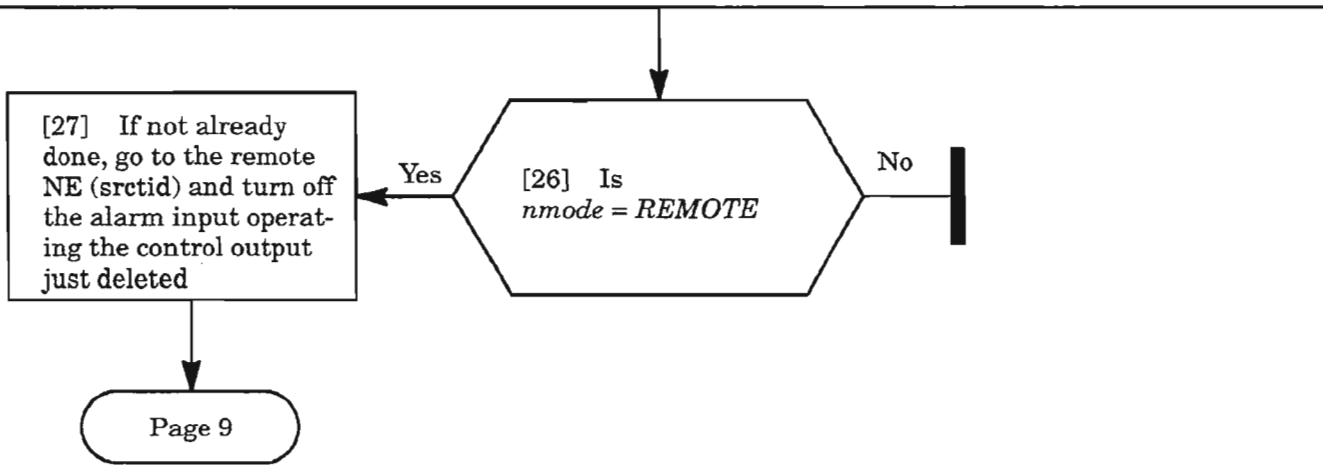
[25] Enter the following command for the control output being turned off (specify only the *CONT-contnum* and *contname* parameters):

```
SET-ATTR-CONT:[tid]:CONT-contnum:[ctag]::contname;
```

where:

**contnum** = 1...12 (control output number)

**contname** = "" (double quotes with no space or characters between)



## Retrieve Status of Control Outputs

[28] Enter the following command for the control output(s) being checked:

**RTRV-EXT-CONT:[tid]:CONT-contnum:[ctag]::[contname];**

where:

**contnum** = **1...12** (control output number), or  
**ALL** (all control outputs)

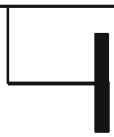
*NOTE: The contname parameter is an optional filter and is described in GENERAL EXPLANATION below.*

---

AND

---

[29] The response provides a list of selected control outputs and their status (OPER or RLS).  
See GENERAL EXPLANATION



GENERAL EXPLANATION "RTRV-EXT-CONT"					
<b>RESPONSE</b>					
M	SID year-month-day hr:min:sec ctag COMPLD /* RTRV-EXT-CONT:[tid]:CONT-contnum or ALL:[ctag]::[contname]; */ "CONT-contnum: [contname], dur, [contstate]"				
<b>WHERE</b>					
<b>contnum</b>	Specifies the external control output number; corresponds to the CDAC Control Point Outputs on the 1603/12 SM shelf backplane 1...12 (control output number)				
<b>NOTE:</b>	<i>The parameters: contname and contstate appear only for control outputs that are assigned (using SET-ATTR-CONT command).</i>				
<b>[contname]</b>	The name associated with control output defined by the customer: Alphanumeric string (1 - 10 characters)				
<b>dur</b>	The duration mode of the contact closure; always <b>CONTS</b> (continuous)				
<b>contstate</b>	The current state of the control output: <table style="margin-left: 40px; border: none;"> <tr> <td style="padding-right: 20px;"><b>OPER</b></td> <td>Operated</td> </tr> <tr> <td><b>RLS</b></td> <td>Released</td> </tr> </table>	<b>OPER</b>	Operated	<b>RLS</b>	Released
<b>OPER</b>	Operated				
<b>RLS</b>	Released				

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 12 of 12	223

[1] Enter command:

**RTRV-T3:[tid]:aid:[ctag];**

where: aid = one of the following:

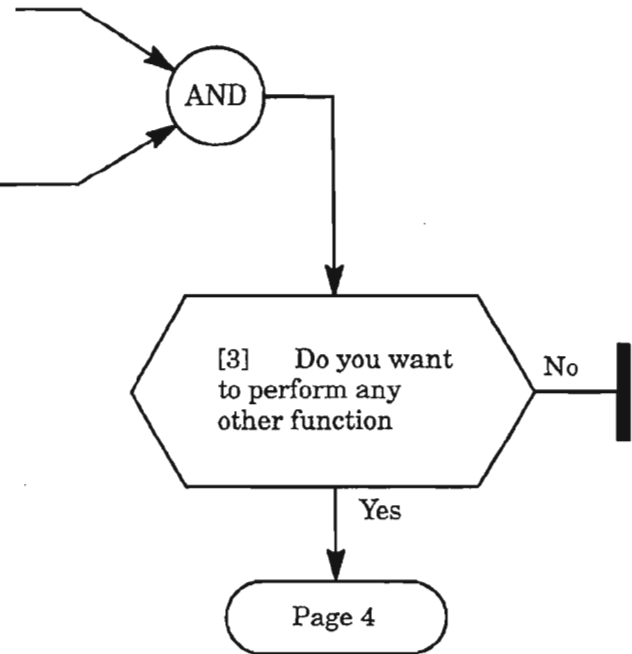
**dgx-T3-t3port**

dgx = DG1, DG2 or DG3 (Drop Group)

t3port = 1 (DS3 port)

**ALL** (all assigned T3 facilities)

[2] See GENERAL EXPLANATION, Page 2, for the provisionable parameters and states for the aid



**GENERAL EXPLANATION  
"RTRV-T3"**

**RESPONSE**

M SID year-month-day hr:min:sec  
ctag COMPLD  
/\* RTRV-T3:[tid]:aid:[ctag]; \*/  
"dgx-T3-t3port::[T3\_nblk]:pst,[sst],[ast]"

**WHERE**

**dgx**      **DG1** (Drop Group 1)  
            **DG2** (Drop Group 2)  
            **DG3** (Drop Group 3)

**t3port**    **1**      (DS3 port for drop group, limited to one DS3 port for OC-3 rate line groups)

**T3\_nblk**    List of any of the following (assignments):  
Allow DS3 LOS to escalate to STS AIS:  
      **ESCALATEAIS\_T3 = Y**    Allows DS3 LOS to escalate to STS AIS  
      **ESCALATEAIS\_T3 = N**    Does not allow escalation to STS AIS  
Enable/Disable Line Build-out (LINEBLDOUT):  
      **LINEBLDOUT = Y**    Enable  
      **LINEBLDOUT = N**    Disable

**pst**            Primary state (condition) of the T3 facility:

**IS-NR**            Facility is in-service and normal

**IS-ANR**          Facility is in-service but an abnormal condition exists. It may be able to perform all or only part of its designed service function (e.g., due to degrade)

**OOS-MA-AS**        Out-of-service state for provisioning activity; facility is assigned

**OOS-MA-UAS**      Out-of-service state for provisioning activity; facility is not assigned (default)

**OOS-MT**          Out-of-service state for maintenance activity such as fault, performance monitoring or testing; facility is assigned

**sst**            Secondary state of the T3 facility:

**ACT**              Active; this facility is providing service (not standby)

**AINS**             Automatic In-service; the equipment is automatically placed In-Service (pst = IS) when plugged in

**ACT**              Active; this facility is providing service (not standby)

**AINS**             Automatic In-service; the equipment is automatically placed In-Service (pst = IS) when plugged in

**APSI**             Automatic Protection Switch Inhibited; for a protected entity, it represents lock-on. For a protecting entity, it represents lock-out

*Continued on next page*

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 2 of 9	224



**GENERAL EXPLANATION (cont)**  
**"RTRV-T3"**

**RESPONSE**

```

M      SID year-month-day hr:min:sec
      ctag COMPLD
      /* RTRV-T3:[tid]:aid:[ctag]; */
      "dgx-T3-t3port::[T3_nblk]:pst,[sst],[ast]"
  
```

**WHERE**

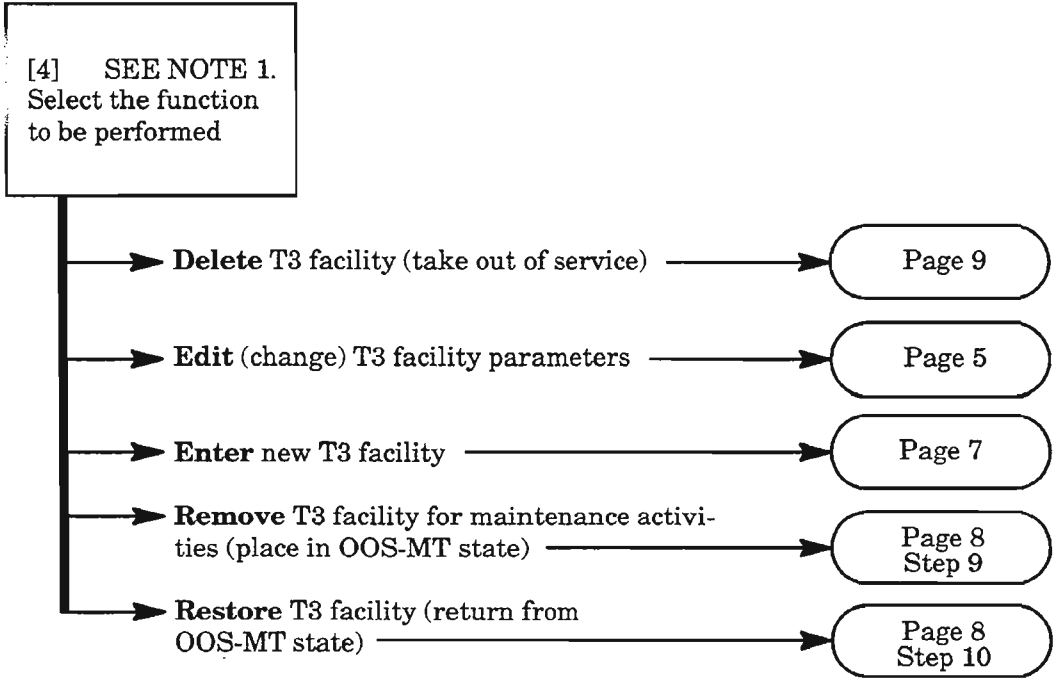
**sst**      Secondary state of the T3 facility: (cont)

- BOOT**      Processor running bootcode
- DX**        Duplex configuration
- EQ**        Equipped; NEP plug-in(s) are present
- FLT**        Fault; the facility is OOS-MT because it is faulty
- FRC D**      Forced; change of state was forced
- MAN**        Manual; the facility has been manually taken OOS-MT for maintenance activities
- MEA**        Mismatch of equipment and attributes; the installed equipment does not match the provisioned equipment
- OVFL**      Overflow; for the LOG and Database Capture Buffer (DBC B) objects that are not provisioned with wrap buffer, this indicates that the object has depleted its memory resources
- PROT**      Entity is protection (not working) side
- PWR**        Power; entity is OOS-MT because it has no power
- STBY**      Standby; this entity is not providing service
- SWDL**      Software downloaded
- SWVERR**    Software version error
- SX**        Simplex configuration
- TB**        Diagnostic test busy
- TSTF**      Test failure; facility is OOS-MT because of test failure
- WORK**      Entity is working side

**ast**      Associated state of the T3 facility:

- FAF**        Facility failure; associated supporting facility is OOS
- FEF**        Family of equipment failure; associated controlling equipment is OOS
- UEA**        Underlying Entity Abnormal; the associated supporting entity is IS-ANR or OOS

ISSUE 1	JULY 1994	
ALCL 363-203-502	DLP	
PAGE 3 of 9	224	



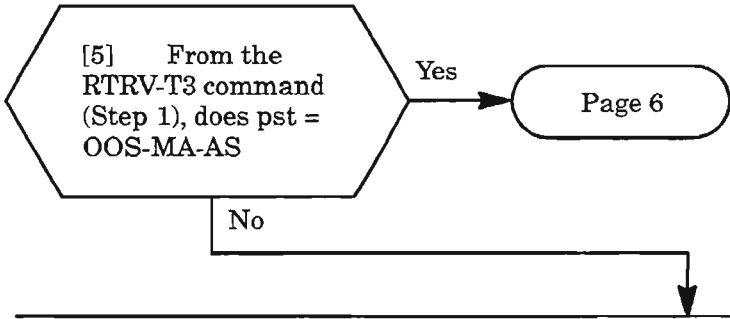
**NOTE: 1.** To select any of the decision paths listed, certain requirements apply to the affected equipment or facility (referred to as "object" in the following list). When selecting a decision path, the following information is pertinent:

- The Enter selection is used to add an object to the current configuration (i.e., to place it into service). The object's provisionable parameters also can be changed from their default value when the object is being entered. This selection is only valid if the current Primary State of the object is Unassigned (OOS-MA-UAS).
- The Edit selection is used to change provisionable parameters of the object after it is already entered into the configuration.
- The Delete function removes the object from the current configuration (i.e., returns the object's Primary State to unassigned, OOS-MA-UAS). Before deleting the object, supported entities (if any) must first be deleted or the delete command will be denied.
- The Remove (RMV) command is used to place an object into the maintenance state (OOS-MT) for testing. It is only valid if the object's current Primary State is In-Service (IS-NR or IS-ANR). Otherwise, the edit command must be used (i.e., from OOS-MA to OOS-MT).
- The Restore (RST) command is used to return an object from the maintenance state (OOS-MT) to the In-Service state (IS).

Execution of a command may be denied if a possible service interruption is detected or if the object is in an incorrect state. (See TNG-514 for more information.)

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 4 of 9	224

# Edit T3 Facility

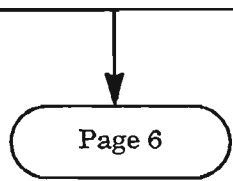


[6] Enter the following command to place facility in OOS-MA-AS state:

**ED-T3:[tid]:dgx-T3-t3port:[ctag]:::MA;**

where: dgx = DG1 Drop Group 1  
          DG2 Drop Group 2  
          DG3 Drop Group 3

t3port = 1 DS3 port for drop group



## Edit T3 Facility (cont)

[7] Enter the following command specifying the parameters being changed:

**ED-T3:[tid]:dgx-T3-t3port:[ctag]:::[ESCALATEAIS\_T3=a,LINEBLDOUT=b]:[pst];**

where: dgx = DG1      Drop Group 1  
              DG2      Drop Group 2  
              DG3      Drop Group 3

t3port = 1            DS3 port for drop group

a = For ESCALATEAIS\_T3 parameter, enter:  
    Y            Allow DS3 LOS to escalate to STS AIS (recommended at double-hubbed NEs for interconnecting rings)  
    N            Do not allow escalate to STS AIS

b = For LINEBLDOUT (Line Build-out) parameter, enter:  
    Y            Yes, to enable line build-out capability, or  
    N            No, to disable line build-out capability

The value selected depends on the type of coax cable used and the distance to the DS3 cross-connect.

If cable is AT&T 728A or equivalent:  
0-225 feet, enter: LINEBLDOUT=Y  
226-450 feet, enter: LINEBLDOUT=N

If cable is AT&T 734A or equivalent:  
0-200 feet, enter: LINEBLDOUT=Y  
201-400 feet, enter: LINEBLDOUT=N

If cable is AT&T 735A or equivalent:  
0-110 feet, enter: LINEBLDOUT=Y  
111-220 feet, enter: LINEBLDOUT=N

pst = Primary state (condition) of the T3 facility:  
    IS            Place facility in in-service state after completing command  
    OOS          Place facility in out-of-service state for provisioning activity; the facility must be placed in this state before modifying its parameters  
    MA            Memory administration (synonymous with OOS)  
    MT            Maintenance; place facility in maintenance state (OOS-MT)  
    (null)        No entry for pst means that the primary state of the equipment will not change after command is executed

---

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 6 of 9	224

## Enter T3 Facility

[8] See NOTE 2. Enter the following command for the new facility:

**ENT-T3:[tid]:dgx-T3-t3port:[ctag]:::[ESCALATEAIS\_T3=a,LINEBLDOUT=b]:[pst];**

where: dgx = DG1 Drop Group 1  
          DG2 Drop Group 2  
          DG3 Drop Group 3

t3port = 1 DS3 port for drop group

- a = For ESCALATEAIS\_T3 parameter, enter:  
Y Allow DS3 LOS to escalate to STS AIS (recommended at double-hubbed NEs for interconnecting rings)  
N Do not allow escalate to STS AIS (default)
- b = For LINEBLDOUT (Line Build-out) parameter, enter:  
Y Yes, to enable line build-out capability (default), or  
N No, to disable line build-out capability

The value selected depends on the type of coax cable used and the distance to the DS3 cross-connect.

If cable is AT&T 728A or equivalent:  
0-225 feet, enter: LINEBLDOUT=Y  
226-450 feet, enter: LINEBLDOUT=N

If cable is AT&T 734A or equivalent:  
0-200 feet, enter: LINEBLDOUT=Y  
201-400 feet, enter: LINEBLDOUT=N

If cable is AT&T 735A or equivalent:  
0-110 feet, enter: LINEBLDOUT=Y  
111-220 feet, enter: LINEBLDOUT=N

- pst = Primary state (condition) of the T3 facility:  
IS Place facility in in-service state after completing command (default)  
OOS Place facility in out-of-service state for provisioning activity  
MA Memory administration (synonymous with OOS)  
MT Maintenance; place facility into maintenance state (OOS-MT)

---

**NOTE: 2.** *The associated LIF/LDR equipment must be assigned before entering T3 facility (see DLP-218 and DLP-219).*

## Remove T3 Facility (Place Facility in Maintenance State)

[9] Enter the following command:

**RMV-T3:[tid]:dgx-T3-t3port:[ctag];**

where: dgx = DG1 Drop Group 1  
          DG2 Drop Group 2  
          DG3 Drop Group 3

t3port = 1 DS3 port for drop group

---

## Restore T3 Facility (Remove from Maintenance State)

[10] See NOTE 3. Enter the following command:

**RST-T3:[tid]:dgx-T3-t3port:[ctag];**

where: dgx = DG1 Drop Group 1  
          DG2 Drop Group 2  
          DG3 Drop Group 3

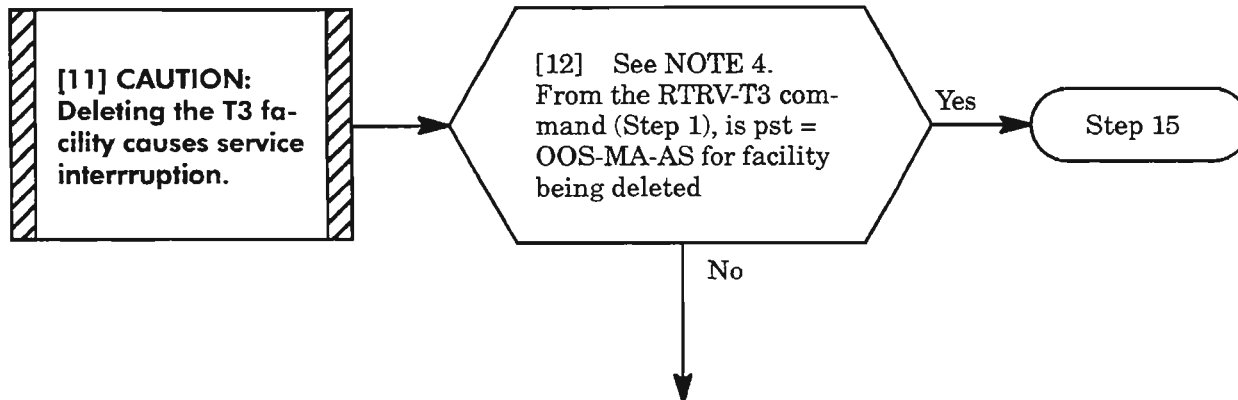
t3port = 1 DS3 port for drop group

---

**NOTE: 3.** The facility returns to In-Service (IS) state when this command is entered.

ISSUE 1	JULY 1994
ALCL 363-203-502	DLP
PAGE 8 of 9	224

## Delete T3 Facility



[13] Enter the following command to place the facility in the OOS-MA-AS state:

**ED-T3:[tid]:dgx-T3-t3port:[ctag]:::MA;**

where: dgx = DG1    Drop Group 1  
              DG2    Drop Group 2  
              DG3    Drop Group 3

t3port = 1        DS3 port for drop group

AND

[14] Before T3 facility can be deleted, all supported payloads and cross-connections must be deleted. Refer to NTP-017 for the procedure on discontinuing T3 service, if necessary

AND

[15] Enter command:

**DLT-T3:[tid]:dgx-T3-t3port:[ctag];**

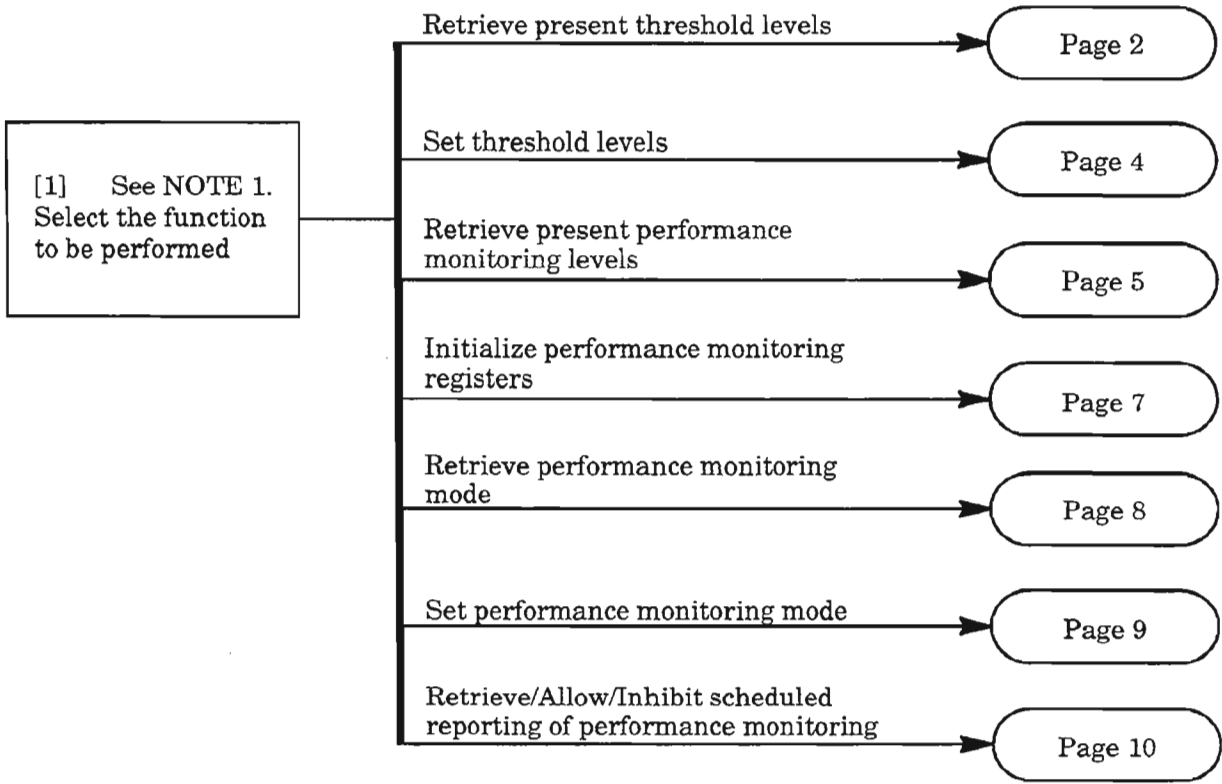
where: dgx = DG1    Drop Group 1  
              DG2    Drop Group 2  
              DG3    Drop Group 3

t3port = 1        DS3 port for drop group

**NOTE: 4.** The T3 facility must be in OOS-MA-AS state before it can be deleted.







**NOTE:** 1. *This procedure assumes the user is logged into the Network Element (DLP-117) and is authorized to set thresholds.*

## Retrieve Present Threshold Levels

[2] From Table A, Page 3, select the monitor parameter of interest (mont1th)

[3] Enter command:

**RTRV-TH-T1:[tid]:aidt1:[ctag]::[mont1th],[tmper];**

where: aidt1 = dgx-T1-pathno or ALL

dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

pathno = 1...28 (DS1 line number)

mont1th = Step 2 (defaults to all)

tmper = time period (1-DAY or 15-MIN, defaults to both)

(See NOTE 2)

[4] Analyze the response:

“dgx-T1-pathno:mont1th,,thlev,[tmper]”

where: dgx = DG1, DG2 or DG3

pathno = 1...28 (DS1 line number)

mont1th = See Table A

thlev = present threshold level

tmper = time period

```
graph LR; S2[2] --> AND((AND)); S3[3] --> AND; S4[4] --> AND; AND --- B[Bar];
```

**NOTE: 2.** For an explanation of the command and response, see *Commands and Messages Manual* (650205-823-022).

ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 2 of 10	004

**Table A. T1 PM Threshold Levels**

<b>Monitor Type (mont1th)</b>	<b>Default</b>		<b>Range</b>	<b>Description</b>
	<b>15-Min</b>	<b>1-Day</b>		
BPV	12240	133400	1...4,294,967,295	Bipolar Violations
ESL	65	648	1...65535	Line Errored Seconds
SESL	10	100	1...65535	Line Severely Errored Seconds
BER-HT	4	4	3...6	Bit Error Ratio – high threshold (SFBER)

## Set Threshold Levels

[5] See Table A, Page 3, for initial default threshold levels for reference

[6] Select the monitor type (mont1th) whose threshold level is to be set per Table A

[7] Determine the threshold level (thlev) from "Range" in Table A

[8] Determine the time period (tmper); i.e., duration the counts are to be made. Choices are: 1-DAY or 15-MIN (defaults to 15-MIN)

[9] Enter the command using the parameters above:

**SET-TH-T1:[tid]:aidt1:[ctag]::mont1th,thlev,,[tmper];**

where: aidt1 = dgx-T1-pathno or ALL

dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

pathno = 1...28 (DS1 line #)

mont1th = See Step 6

thlev = See Step 7

tmper = See Step 8

AND

ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 4 of 10	004

# Retrieve Present Performance Monitoring Levels

[10] From Table B, Page 6, select the monitor type from which data is retrieved (mont1)

[11] Select the level and direction above which data is retrieved (monlev) in the format "lev-dirn"

where: lev = 0...32768  
 dirn = UP or DN (defaults to 1-UP)

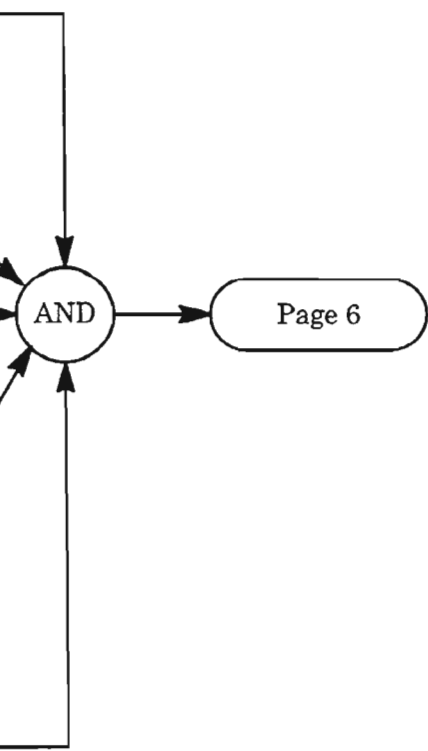
[12] Select the time period, 1-DAY or 15-MIN (tmper), in which data is to be retrieved (defaults to both)

[13] Select the beginning date of the performance monitoring period (mondat) specified in the "tmper" parameter in the format "mon-day" or ALL (default)

where: mon = 1...12 or ALL  
 day = 0...31 if mon ≠ ALL

[14] Select the beginning time of performance monitoring period (montm) specified in "tmper" (does not apply when tmper = 1-DAY). The formats are: "hh-mm" or "ALL" (default = 00-00)

where: hh = 0...23 or ALL  
 mm = 0...59 if hh ≠ ALL



## Retrieve Present Performance Monitoring Levels (cont)

[15] Enter command with data from Steps 10-14 (see NOTE 2, Page 2)

**RTRV-PM-T1:[tid]:aidt1:[ctag]::[mont1],[monlev],,,[tmper],[mondatt],[montm];**

where: aidt1 = dgx-T1-pathno or ALL

dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

pathno = 1...28 (DS1 line #)

[16] Analyze the response:

“dgx-T1-pathno,T1:mont1,monval,[vldty],[locn],[tmper],[mondatt],[montm]”

where: dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

pathno = 1...28 (DS1 line #)

mont1 = See Table B

monval = measured value

vldty = validity indicator:

ADJ - data has been manually adjusted or initialized

COMPL - data accumulated over the entire time period

PRTL - data accumulated over some portion of the time period

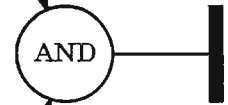
NA - Not Alarmed, reported by REPORT EVENT

locn = FEND or NEND (location where the performance monitoring reports)

tmper = See Step 12

mondatt = See Step 13

montm = See Step 14



**Table B. T1 PM Types**

Monitor Type (mont1)	Description
BPV	Bipolar Violations
ESL	Line Errored Seconds
SESL	Line Severely Errored Seconds

## Initialize Performance Monitoring Registers

[17] Select the monitor type (mont1) whose value is to be initialized (see Table B, Page 6) (defaults to all)

[18] Determine the time period (tmper) of the mont1 that is to be initialized (1-DAY or 15-MIN) (defaults to all)

[19] Select the beginning date of performance monitoring period (mondatt) specified in "tmper" parameter, in the format "mon-day" or ALL (default)

where: mon = 1...12 or ALL  
 day = 0...31 if mon ≠ ALL

[20] Select the beginning time of performance monitoring period (montm) specified in "tmper" (does not apply when tmper = 1-DAY). The formats are: "hh-mm" or "ALL" (default = 00-00)

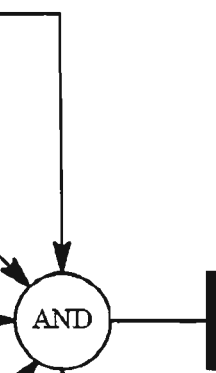
where: hh = 0...23 or ALL  
 mm = 0...59 if hh ≠ ALL

[21] Enter command using the parameters above:

**INIT-REG-T1:[tid]:aidt1:[ctag>::[mont1],,,[tmper],[mondatt],[montm];**

where: aidt1 = dgx-T1-pathno or ALL  
 dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)  
 pathno = 1...28 (DS1 line number)

(See NOTE 2, Page 2)



## Retrieve Performance Monitoring Mode

[22] Select the location (locn) where the performance monitoring reports;

FEND (far end)  
NEND (near end)

[23] Enter the command with the above data:

**RTRV-PMMODE-T1:[tid]:aidt1:[ctag]::[locn];**

where: aidt1 = dgx-T1-pathno or ALL  
dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)  
pathno = 1...28 (DS1 line number)

[24] Analyze the response:

“dgx-T1-pathno:[locn],pmttype,pmstate,[pmdaystart]”

where: dgx = DG1, DG2 or DG3  
pathno = 1...28 (DS1 line number)  
locn = See Step 22  
pmttype = P (Path) or L (Line)  
pmstate = ON or OFF  
pmdaystart = time of day to start accumulating daily  
performance monitoring counts (0...23)  
(0 is midnight)

```
graph LR; S22[22] --> AND((AND)); S23[23] --> AND; S24[24] --> AND; AND --> T[Terminal Bar]
```

AND

ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 8 of 10	004



## Set Performance Monitoring Mode

[25] Select the location (locn) where the performance monitoring reports:

FEND (far end)  
NEND (near end)

[26] Select the performance monitoring type (pmtypet1):

P = transport Path  
L = transport Line  
ALL = all that are applicable (default)

[27] Select (pmstate) whether the pmtype is ON (default) or OFF

[28] Select the time of day to start accumulating daily performance monitoring counts (pmdaystart). The range is 0 (default)...23

[29] Enter command with the above selections:

**SET-PMMODE-T1:[tid]:aidt1:[ctag]::[locn],[pmtypet1],[pmstate],[pmdaystart];**

where: aidt1 = dgx-T1-pathno or ALL

dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

pathno = 1...28 (DS1 line number)

AND

# Retrieve/Allow/Inhibit Scheduled Reporting of Performance Monitoring

[30] Enter the following command:

**RTRV-COND-T1:[tid]:aidt1:[ctag]::INHPMREPT;**

where: aidt1 = dgx-T1-pathno or ALL  
 dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)  
 pathno = 1...28 (T1 line number)

[31] The response will list the facilities that are inhibited from reporting scheduled performance monitoring:

**"dgx-T1-pathno,T1:ntfncde3,INHPMREPT,srveff,,,[locn],,;"**

where: dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)  
 pathno = 1...28 (T1 line no.)  
 ntfncde3 = CR, MJ, MN, NA, or NR (alarm notification code)  
 srveff = SA (Service Affecting) or  
 NSA (Nonservice Affecting)  
 locn = NEND (near end) or FEND (far end)

[33] Enter the following command to allow PM reporting:

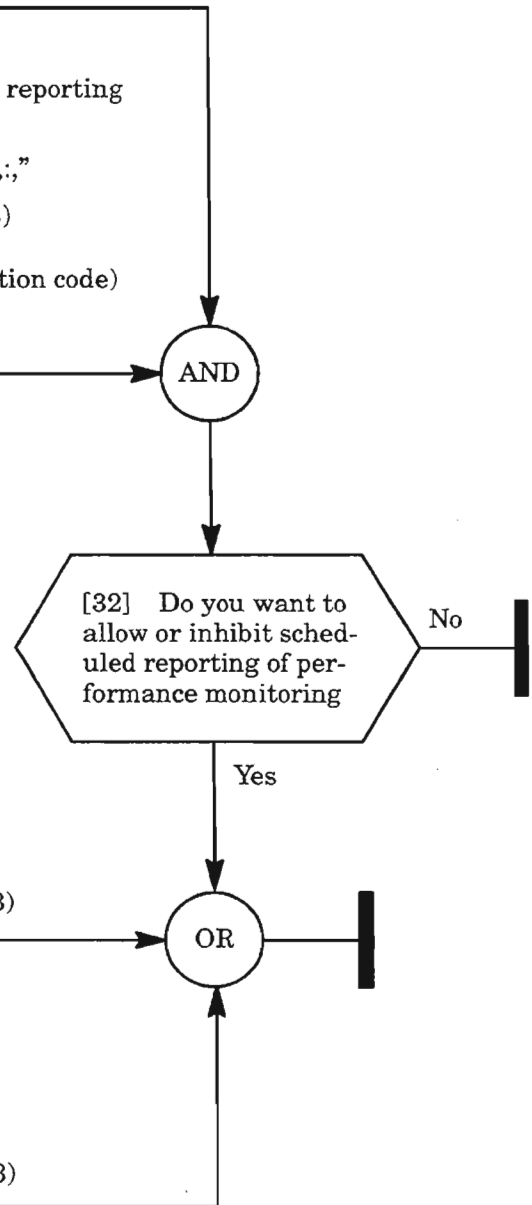
**ALW-PMREPT-T1:[tid]:aidt1:[ctag];**

where: aidt1 = dgx-T1-pathno or ALL  
 dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)  
 pathno = 1...28 (T1 line number)

[34] Enter the following command to inhibit PM reporting:

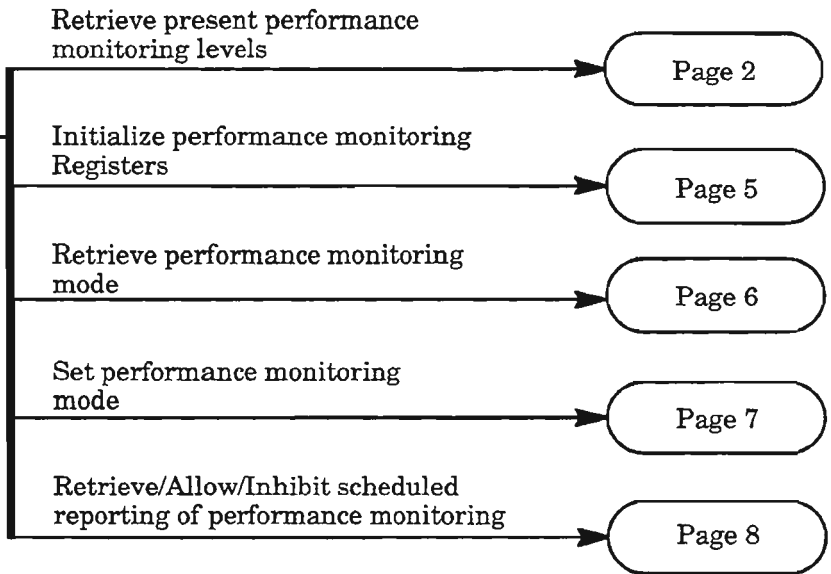
**INH-PMREPT-T1:[tid]:aidt1:[ctag];**

where: aidt1 = dgx-T1-pathno or ALL  
 dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)  
 pathno = 1...28 (T1 line number)



ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 10 of 10	004

[1] See NOTES 1 and 2. Select the function to be performed



**NOTES:** 1. *This routine procedure assumes the craftperson is logged on to a terminal (DLP-117) and is authorized to set thresholds.*

2. *For an explanation of the command and response, see Commands and Messages Manual (650205-823-022).*

## Retrieve Present Performance Monitoring Levels

[2] Select the monitor type from which data is retrieved (moneqpt)  
[Protection Switch Count (PSC) is only monitor type available]

[3] Select the level and direction above which data is retrieved  
(monlev) in the format lev-dirn

where: lev = 0...32768  
dirn = UP or DN (defaults to 1-UP)

[4] Select the time period, 1-DAY or 15-MIN (tmper), in which  
data is to be retrieved (defaults to both)

[5] Select the beginning date of performance monitoring period  
(mondat) specified in the tmper parameter, in the format  
mon-day or ALL (default)

where: mon = 1...12 or ALL  
day = 0...31 if mon ≠ ALL

[6] Select the beginning time of performance monitoring period  
(montm) specified in tmper (does not apply when tmper =  
1-DAY). The formats are: hh-mm or ALL (default = 00-00)

where: hh = 0...23 or ALL  
mm = 0...59 if hh ≠ ALL

AND

Page 3

ISSUE 2	JULY 1994
ALCL 363-203-502	RTP
PAGE 2 of 8	005

## Retrieve Present Performance Monitoring Levels (cont)

[7] Enter command with data from Steps 2-6:

**RTRV-PM-EQPT:[tid]:aideqptin:[ctag]::[moneqpt],[monlev],,,[tmper],[mondatt],[montm];**

where: aideqptin = (from Table A, Page 4)

[8] Analyze the response:

**"aideqptout,EQPT:moneqpt,monval,[vldty],[locn],,[tmper],[mondatt],[montm]"**

where: aideqptout = (See Table B, Page 4)

moneqpt = monitor type (PSC)

monval = measured value

vldty = validity indicator:

ADJ - data has been manually adjusted or initialized

COMPL - data accumulated over the entire time period

PRTL - data accumulated over some portion of the time period

NA - Not Alarmed, reported via REPORT EVENT

locn = FEND or NEND (location where the performance monitoring reports)

tmper = See Step 4

mondatt = See Step 5

montm = See Step 6



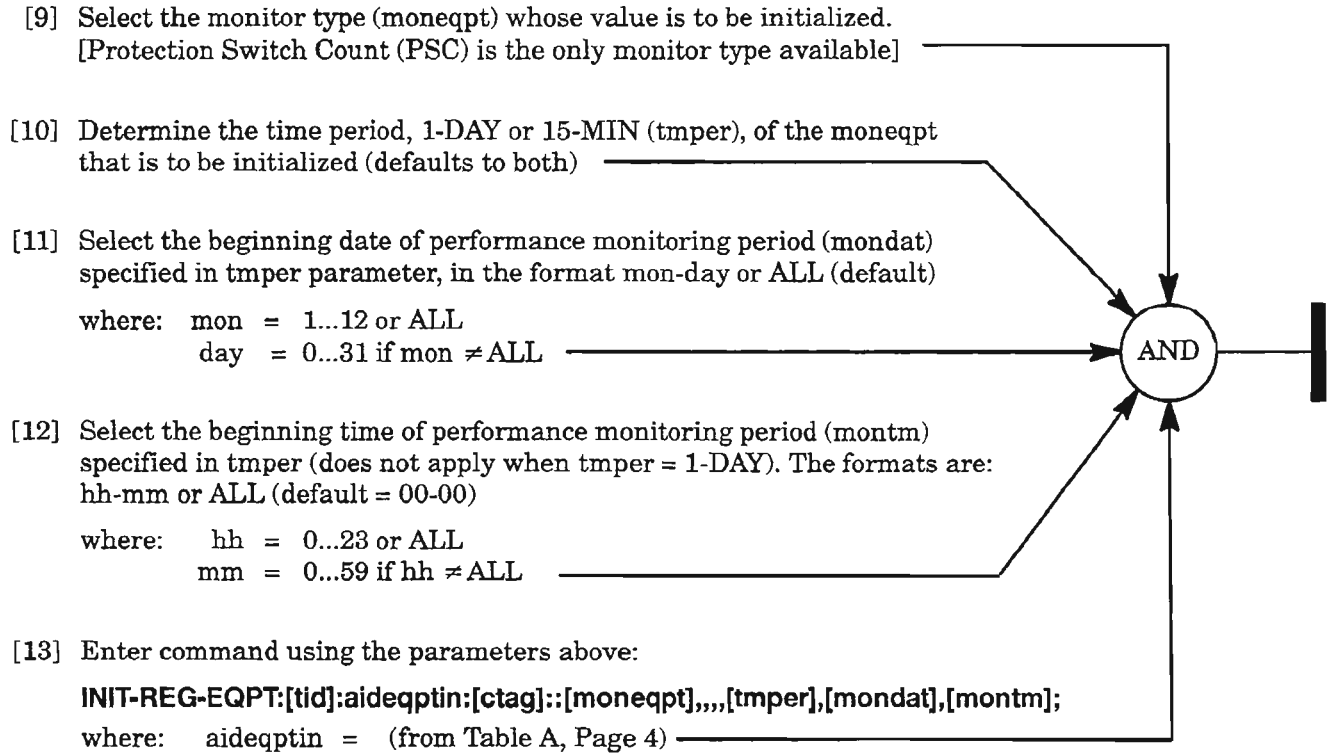
**Table A. Access Identification Codes (aids) for Command Input**

<b>aideqptin</b>	<b>Description</b>
NEP	NEP-A and NEP-B (future)
CLK	CLK-A and CLK-B
VSCC	VSCC-A and VSCC-B
dgx-DMI	DMI units: (DMI-A, and DMI-B) where: dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)
dgx-VTG-vtgport	VTG units (VTG-1...VTG-7) where: dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3) vtgport = 1...7 (VTG-1 through VTG-7)
dgx-VTG-P	VTG Protection unit (VTG-P) where: dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)
dgx-LIF	LIF units: (LIF-A, and LIF-B) where: dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)
ALL	All of the applicable equipment units

**Table B. Access Identification Codes (aids) for Command Response (Output)**

<b>aideqptout</b>	<b>Description</b>
NEPA, NEPB	NEP-A and NEP-B
CLKA, CLKB	CLK-A and CLK-B
VSCCA, VSCCB	VSCC-A and VSCC-B
dgx-dmiab	DMI units: (DMI-A, and DMI-B) where: dmiab = DMIA or DMIB dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)
dgx-VTG-vtgport	VTG units (VTG-1...VTG-7) where: dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3) vtgport= 1...7 (VTG-1 through VTG-7)
dgx-VTG-P	VTG Protection unit (VTG-P) where: dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)
dgx-lifab	LIF units: (LIF-A, and LIF-B) where: lifab = LIFA or LIFB dgx = DG1, DG2 or DG3 (Drop Group 1, 2 or 3)

## Initialize Performance Monitoring Registers



## Retrieve Performance Monitoring Mode

[14] Enter command:

**RTRV-PMODE-EQPT:[tid]:aideqptin:[ctag];**

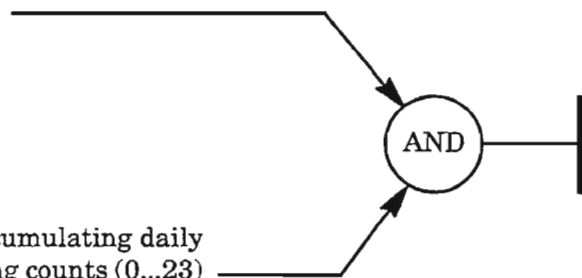
where: aideqptin = (from Table A, Page 4)

[15] Analyze the response:

“aideqptout:,,,[pmdaystart]”

where: aideqptout = (See Table B, Page 4)

pmdaystart = time of day to start accumulating daily performance monitoring counts (0...23)



ISSUE 2	JULY 1994
ALCL 363-203-502	RTP
PAGE 6 of 8	005



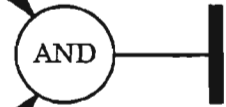
## Set Performance Monitoring Mode

[16] Select the time of day to start accumulating daily performance monitoring counts (pmdaystart). The range is 0 (default)...23

[17] Enter the command with the above selection:

**SET-PMODE-EQPT:[tid]:aideqptin:[ctag]::,,,[pmdaystart];**

where: aideqptin = from (Table A, Page 4)



# Retrieve/Allow/Inhibit Scheduled Reporting of Performance Monitoring

[18] Enter the following command:

**RTRV-COND-EQPT:[tid]:aideqptin:[ctag]::INHPMREPT;**

where: aideqptin = (from Table A, Page 4)

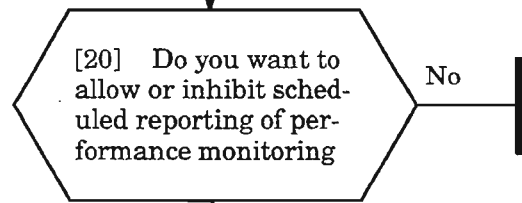
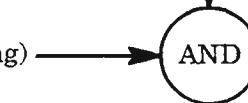
[19] The response will list the facilities that are inhibited from reporting scheduled performance monitoring:

“aideqptout,EQPT:ntfncde,INHPMREPT,srveff;”

where: aideqptout = (see Table B, Page 4)

ntfncde = CR, MJ, MN, NA, or NR  
(alarm notification code)

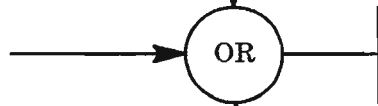
srveff = SA (Service Affecting) or  
NSA (Nonservice Affecting)



[21] Enter the following command to allow PM reporting:

**ALW-PMREPT-EQPT:[tid]:aideqptin:[ctag];**

where: aideqptin = (from Table A, Page 4)

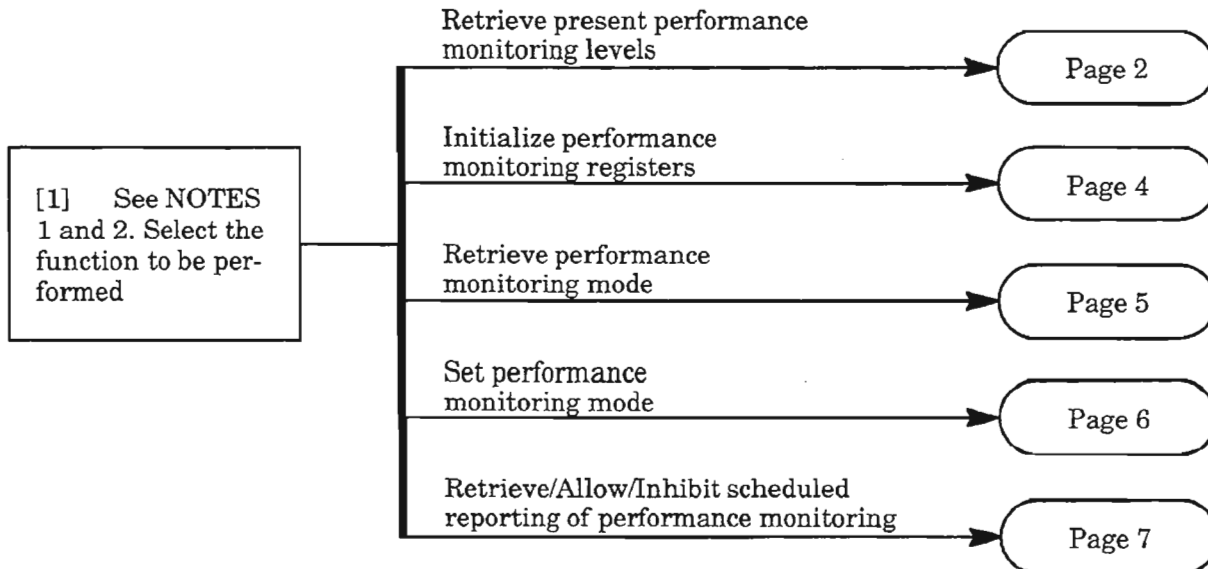


[22] Enter the following command to inhibit PM reporting:

**INH-PMREPT-EQPT:[tid]:aideqptout:[ctag];**

where: aideqptout = (from Table A, Page 4)

ISSUE 2	JULY 1994
ALCL 363-203-502	RTP
PAGE 8 of 8	005



- NOTES:** 1. *This routine procedure assumes the craftperson is logged onto a terminal (DLP-117) and is authorized to set thresholds.*
2. *For an explanation of the command and response, see Commands and Messages Manual (650205-823-022).*

## Retrieve Present Performance Monitoring Levels

[2] The monitor type from which data is retrieved (mon-syncl) is MAXPHASERR (maximum phase error)

[3] Select the level and direction above which data is retrieved (monlev) in the format "lev-dirn"

where: lev = 0...32768  
dirn = UP or DN (defaults to 1-UP)

[4] Select the time period, 1-DAY or 15-MIN (tmper), in which data is to be retrieved (defaults to both)

[5] Select the beginning date of performance monitoring period (mondat) specified in the "tmper" parameter, in the format "mon-day" or ALL (default)

where: mon = 1...12 or ALL  
day = 0...31 if mon ≠ ALL

[6] Select the beginning time of performance monitoring period (montm) specified in "tmper" (does not apply when tmper = 1-DAY). The formats are: "hh-mm" or "ALL" (default = 00-00)

where: hh = 0...23 or ALL  
mm = 0...59 if hh ≠ ALL

AND

Page 3

ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 2 of 7	006

## Retrieve Present Performance Monitoring Levels (cont)

[7] Enter command with data from Steps 2-6:

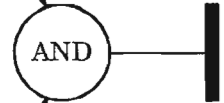
```
RTRV-PM-SYCN:[tid]:[NESYNC]:[ctag]::[monsyncn],[monlev],,,  
[tmper],[mondatt],[montm];
```

[8] Analyze the response:

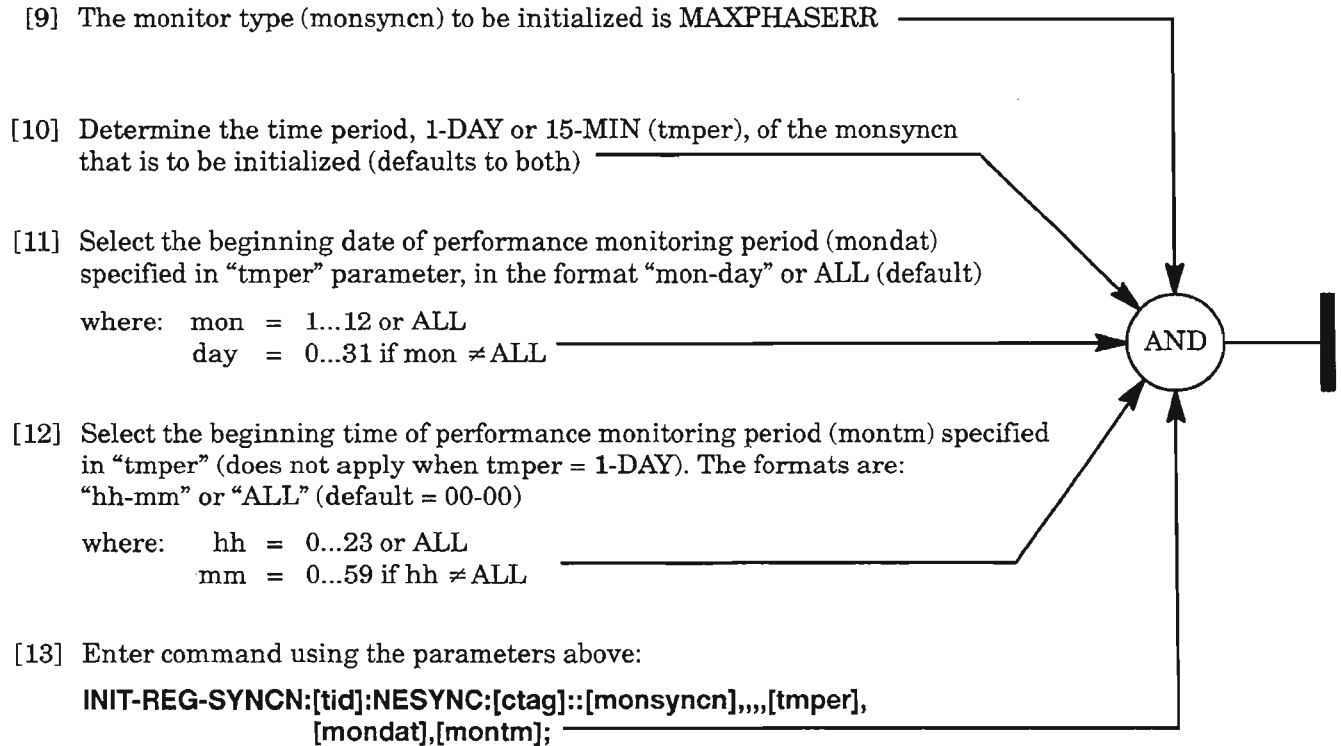
```
"aidsyncn,SYCN:monsyncn,monval,[vldty],[locn],[tmper],[mondatt],[montm]"
```

where:

- aidsync = NESYNC
- monsync = MAXPHASERR
- monval = measured value
- vldty = validity indicator:
  - ADJ - data has been manually adjusted or initialized
  - COMPL - data accumulated over the entire time period
  - PRTL - data accumulated over some portion of the time period
  - NA - Not Alarmed, reported via REPORT EVENT
- locn = FEND or NEND (location where the performance monitoring reports)
- tmper = See Step 4
- mondatt = See Step 5
- montm = See Step 6



## Initialize Performance Monitoring Registers



ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 4 of 7	006

## Retrieve Performance Monitoring Mode

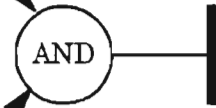
[14] Enter command:

**RTRV-PMMODE-SYNCN:[tid]:NESYNC:[ctag];**

[15] Analyze the response:

**"NESYNC:,,,[pmdaystart]"**

where: pmdaystart = time of day to start accumulating daily  
performance monitoring counts (0...23)

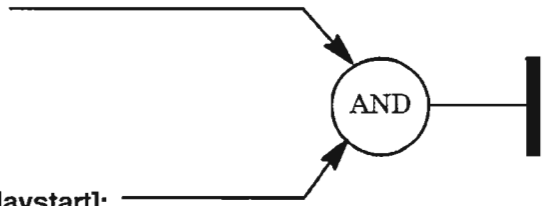


## Set Performance Monitoring Mode

[16] Select the time of day to start accumulating daily performance monitoring counts (pmdaystart). The range is 0...23

[17] Enter the command with the above selection:

**SET-PMODE-SYCN:[tid]:NESYNC:[ctag]:,,,[pmdaystart];**



ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 6 of 7	006



# Retrieve/Allow/Inhibit Scheduled Reporting of Performance Monitoring

[18] Enter the following command:

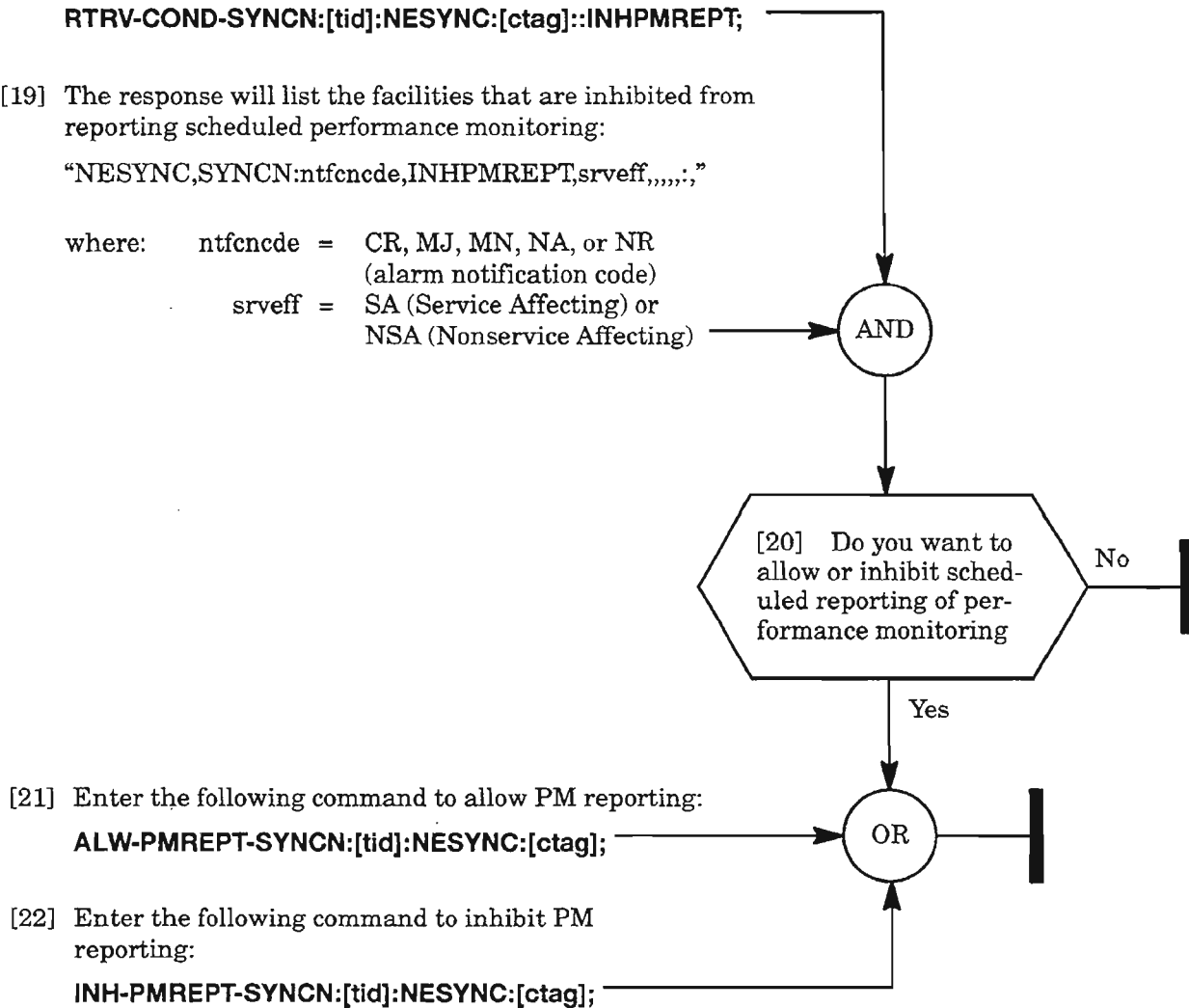
**RTRV-COND-SYCN:[tid]:NESYNC:[ctag]::INHPMREPT;**

[19] The response will list the facilities that are inhibited from reporting scheduled performance monitoring:

“NESYNC,SYCN:ntfncde,INHPMREPT,srveff,,,,;”

where: ntfncde = CR, MJ, MN, NA, or NR  
(alarm notification code)

srveff = SA (Service Affecting) or  
NSA (Nonservice Affecting)



[21] Enter the following command to allow PM reporting:

**ALW-PMREPT-SYCN:[tid]:NESYNC:[ctag];**

[22] Enter the following command to inhibit PM reporting:

**INH-PMREPT-SYCN:[tid]:NESYNC:[ctag];**

ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 7 of 7	006



[1] See NOTES 1, 2, and Figure 1, Page 2;  
determine fan assembly location(s)

[2] Refer to the fuse assignment chart  
on the FAP front panel for fan fuse  
identification

[3] Verify that the fan fuse is good;  
replace fuse if blown

[4] On the fan assemblies, set the  
NORMAL/DISABLE switch(es) to the  
NORMAL position

[5] If necessary apply heat to thermostat for  
a short time (see Figure 1). Allow a few  
seconds for fans to start and stabilize

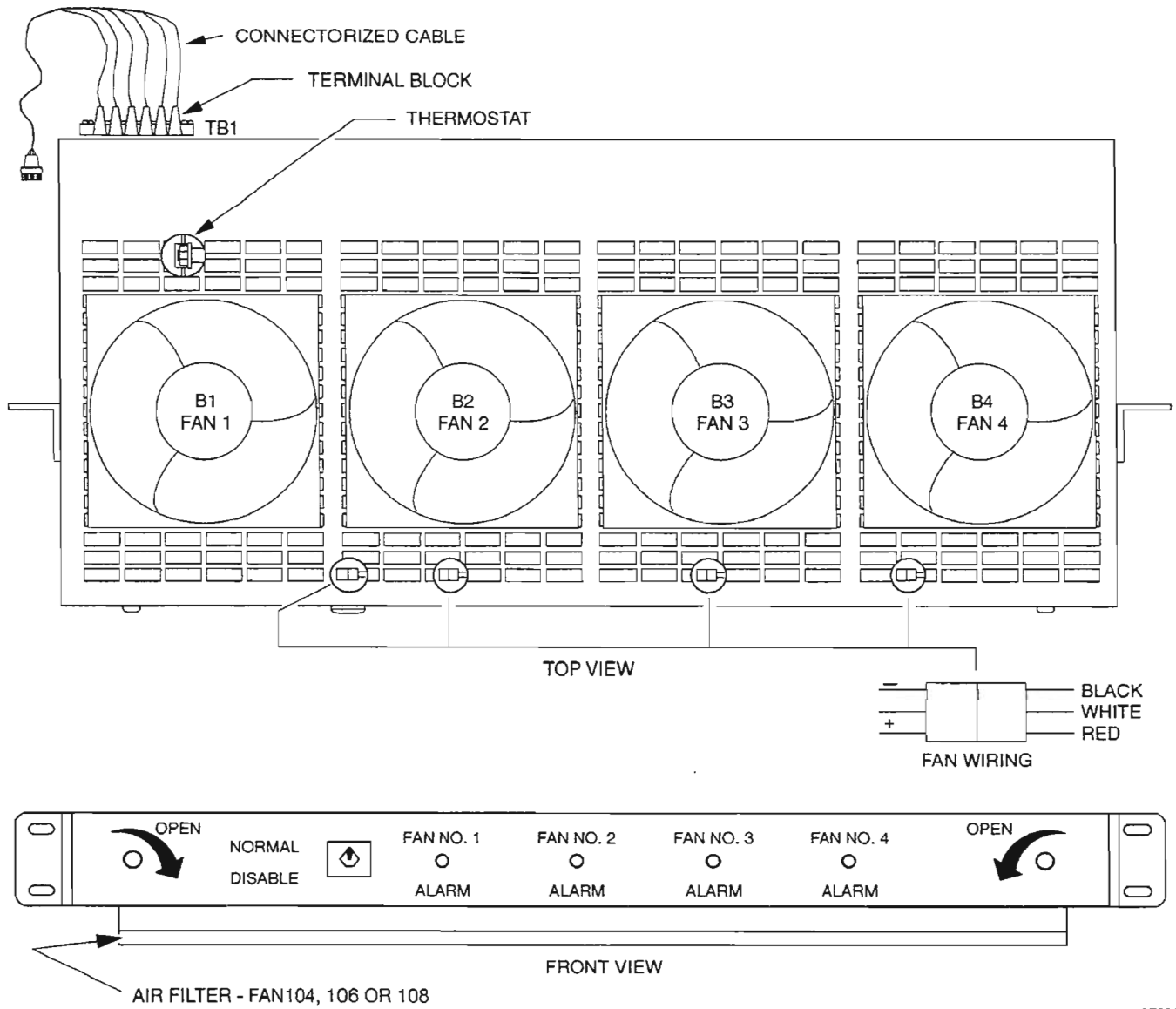
AND

Page 3

**NOTES:** 1. *Equipment required: Non-flammable heat source; Digital Volt Meter (DVM).*  
2. *Fans are optionally equipped as needed per site requirements.*

**CHECK FANS AND FILTERS**

ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 1 of 4	007

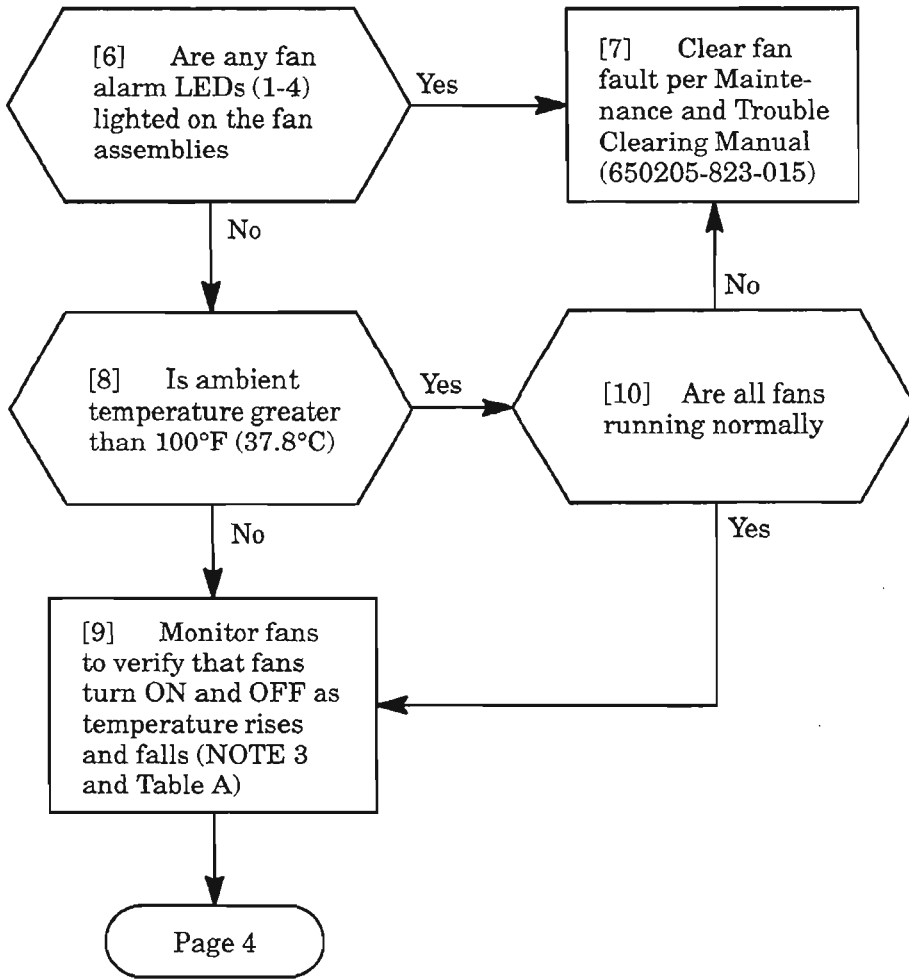


A7332

Figure 1. Fan Assembly Typical Layout

ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 2 of 4	007

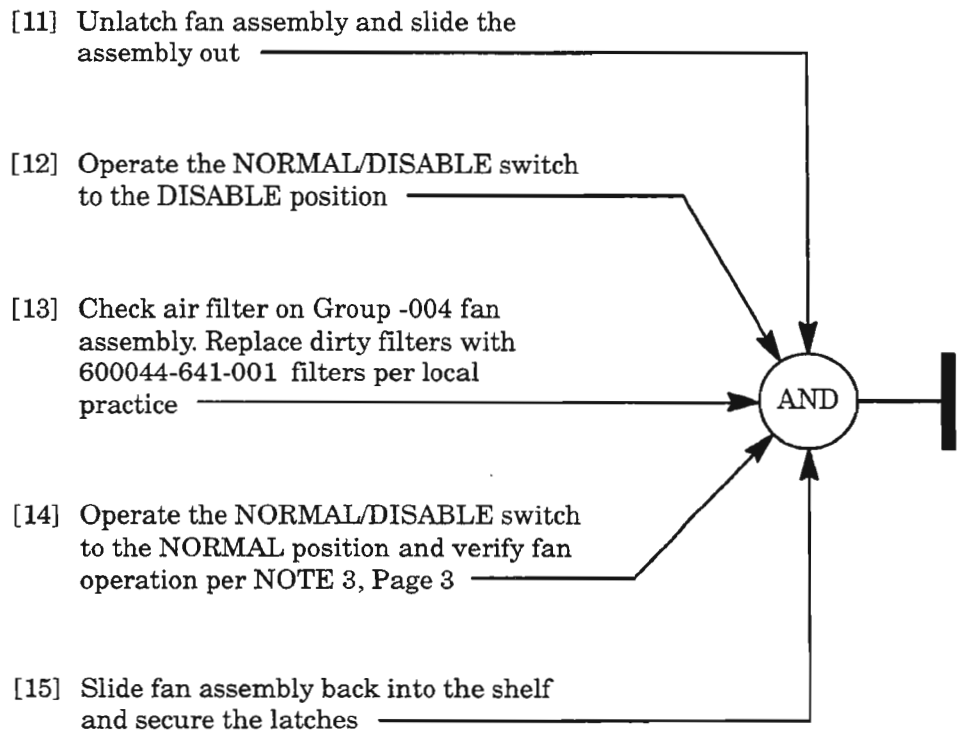
CHECK FANS AND FILTERS



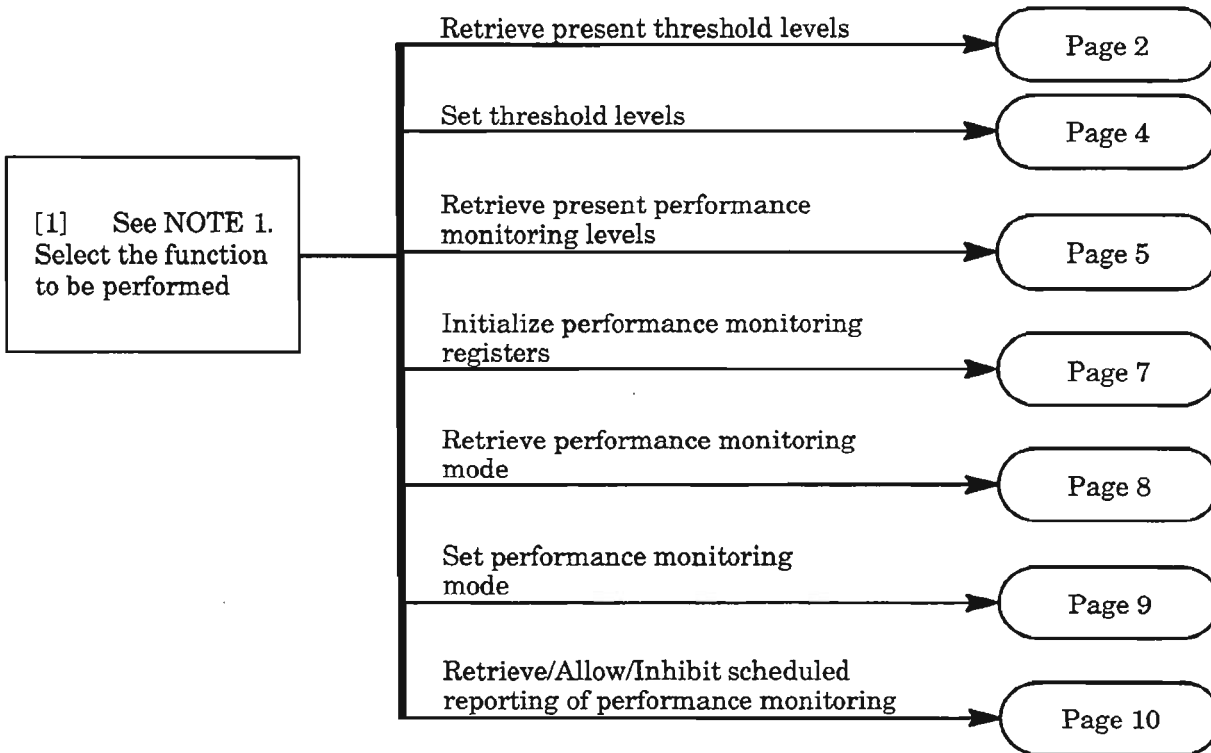
**Table A.**

MNEMONIC	GROUP	ON	OFF
FAN102	-002 without filter	38°C	29°C
FAN104	-004 with filter	38°C	29°C

**NOTE: 3.** Fans are thermostatically controlled to turn ON (see Table A). If two fan assemblies are equipped, power is supplied to both assemblies through the thermostat in the top assembly. The fans can be forced ON by applying heat to the top thermostat.



ISSUE 1	MAY 1994
ALCL 363-203-502	RTP
PAGE 4 of 4	007



**NOTE:** 1. *This procedure assumes the user is logged on the Network Element (DLP-117) and is authorized to set thresholds.*

## Retrieve Present Threshold Levels

[2] From Table A, Page 3, select the monitor parameter of interest (monec1th)

[3] Enter command:

**RTRV-TH-EC1:[tid]:aidec1:[ctag]::[monec1th],[tmper];**

where: aidec1 = dgx-EC1-stspath or ALL

dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

stspath = 1

monec1th = Step 2 (defaults to all parameters)

tmper = time period (1-DAY or 15-MIN, defaults to both)

(See NOTE 2)

[4] Analyze the response:

"dgx-EC1-1,EC1:monec1th,,thlev,[tmper]"

where: dgx = DG1, DG2, or DG3

monec1th = See Table A

thlev = present threshold level

tmper = time period

```
graph LR; S2[monec1th] --> AND((AND)); S3[Command] --> AND; S4[Response] --> AND; AND --- OUT[Bar]
```

**NOTE: 2.** For an explanation of the command and response, see *Commands and Messages Manual* (650205-823-022).

ISSUE 2	JULY 1994
ALCL 363-203-502	RTP
PAGE 2 of 10	008



**Table A. EC1 PM Threshold Levels**

Monitor Type (monec1th)	Default		Range	Description
	15-Min	1-Day		
BERL-HT	4	4	3...4	Bit Error Ratio Line – High Threshold
BERL-LT	7	7	5...9	Bit Error Ratio Line – Low Threshold
CVL	1328	13288	1...4,294,967,295	Coding Violation count – Line
CVS	1328	13288	1...4,294,967,295	Coding Violation count – Section
BPV	1328	13288	1...4,294,967,295	Bipolar violations
DSESL	2500	2500	1...65535	Number of coding violations to make one SESL
DSESS	2500	2500	1...65535	Number of coding violations to make one SESS
ESL	87	864	1...65535	Line Errored Seconds
ESS	87	864	1...65535	Section Errored Seconds
SEFS	2	17	1...65535	Severely Errored Framing Seconds – OOFs/COFAS
SESL	1	4	1...65535	Line Severely Errored Seconds
SESS	1	4	1...65535	Section Severely Errored Seconds
UASL	3	10	1...65535	Line Unavailable Seconds

## Set Threshold Levels

[5] See Table A, Page 3, for initial default threshold levels for reference

[6] Select the monitor type (monec1th) whose threshold level is to be set per Table A

[7] Determine the threshold level (thlev), from Range in Table A

[8] Determine the time period (tmper); i.e., duration the counts are to be made. Choices are: 1-DAY or 15-MIN (defaults to 15-MIN)

[9] Enter the command using the parameters above:

**SET-TH-EC1:[tid]:aidec1:[ctag]::monec1th,thlev,,,[tmper];**

where: aid3c1 = dgx-EC1-stspath or ALL

stspath = 1

dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

AND

ISSUE 2	JULY 1994
ALCL 363-203-502	RTP
PAGE 4 of 10	008

## Retrieve Present Performance Monitoring Levels

[10] From Table B, Page 6, select the monitor type from which data is retrieved (monec1) (defaults to all)

[11] Select the level and direction above which data is retrieved (monlev) in the format lev-dirn

where: lev = 0...32768  
dirn = UP or DN (defaults to 1-UP)

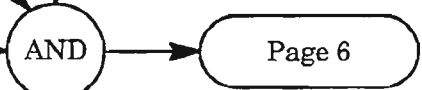
[12] Select the time period, 1-DAY or 15-MIN (tmper), in which data is to be retrieved (defaults to both)

[13] Select the beginning date of performance monitoring period (mondat) specified in tmper parameter, in the format mon-day or ALL (default)

where: mon = 1...12 or ALL  
day = 0...31 if mon ≠ ALL

[14] Select the beginning time of performance monitoring period (montm) specified in tmper (does not apply when tmper = 1-DAY). The formats are: hh-mm or ALL (default = 00-00)

where: hh = 0...23 or ALL  
mm = 0...59 if hh ≠ ALL



## Retrieve Present Performance Monitoring Levels (cont)

[15] Enter command with data from Steps 10-14 (see NOTE 2, Page 2)

**RTRV-PM-EC1:[tid]:aidec1:[ctag]::[monec1],[monlev],,,[tmper],[mondatt],[montm];**

where: aidec1 = dgx-EC1-stspath or ALL

dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

stspath = 1

[16] Analyze the response (reported only if PM is allowed):

"dgx-EC1-1,EC1:monec1,monval,[vldty],[locn],,[tmper],[mondatt],[montm]"

where: dgx = DG1, DG2, or DG3

monec1 = See Table B

monval = measured value (0x0...0xffffffff)

vldty = validity indicator:

ADJ - data has been manually adjusted or initialized

COMPL - data accumulated over the entire time period

PRTL - data accumulated over some portion of the time period

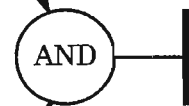
NA - Not Alarmed, reported via REPORT EVENT)

locn = FEND or NEND (far end or near end) location where the performance monitoring reports

tmper = See Step 12

mondatt = See Step 13

montm = See Step 14



**Table B. EC1 PM Types**

Monitor Type (monec1)	Description
CVL	Coding Violation count – Line
CVS	Coding Violation count – Section
BPV	Bipolar Violations
ESL	Line Errored Seconds
ESS	Section Errored Seconds
SEFS	Severely Errored Framing Seconds – OOFs/COFAS
SESL	Line Severely Errored Seconds
SESS	Section Severely Errored Seconds
UASL	Line Unavailable Seconds

## Initialize Performance Monitoring Registers

[17] Select the monitor type (monec1) whose value is to be initialized (see Table B, Page 6) (defaults to all)

[18] Determine the time period (tmper) of the monec1 that is to be initialized (1-DAY or 15-MIN) (defaults to all)

[19] Select the beginning date of performance monitoring period (mondat) specified in "tmper" parameter, in the format mon-day or ALL (default)

where: mon = 1...12 or ALL,  
day = 0...31 if mon ≠ ALL

[20] Select the beginning time of performance monitoring period (montm) specified in tmper (does not apply when tmper = 1-DAY). The formats are: hh-mm or ALL (default = 00-00)

where: hh = 0...23 or ALL  
mm = 0...59 if hh ≠ ALL

[21] Enter command using the parameters above:

**INIT-REG-EC1:[tid]:aidec1:[ctag]::[monec1],,,[tmper],[mondatt],[montm];**

where: aidec1 = dgx-EC1-stspath or ALL  
dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
stspath = 1

(See NOTE 2, Page 2)

AND

## Retrieve Performance Monitoring Mode

[22] Select the location (locn) where the performance monitoring reports:

FEND (far end)  
NEND (near end)

[23] Enter the command with the above data:

**RTRV-PMMODE-EC1:[tid]:aidec1:[ctag]::[locn];**

where: aidec1 = dgx-EC1-stspath or ALL  
dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
stspath = 1

[24] Analyze the response:

"dgx-EC1-1:[locn],pmtyp,pmstate,[pmdystrt]"

where: dgx = DG1, DG2, or DG3  
locn = as described above  
pmtyp = P (Path), L (Line) or S (Section)  
pmstate = ON or OFF  
pmdaystart = time of day to start accumulating daily performance monitoring counts (0...23) (0 is midnight)

```
graph LR; A1[ ] --> AND((AND)); A2[ ] --> AND; A3[ ] --> AND; AND --> B[|]
```

AND

ISSUE 2	JULY 1994
ALCL 363-203-502	RTP
PAGE 8 of 10	008

## Set Performance Monitoring Mode

[25] Select the location (locn) where the performance monitoring reports:

FEND (far end)  
 NEND (near end)

[26] Select the performance monitoring type (pmttype):

P = transport Path  
 L = transport Line  
 S = transport Section  
 ALL = all that are applicable (default)

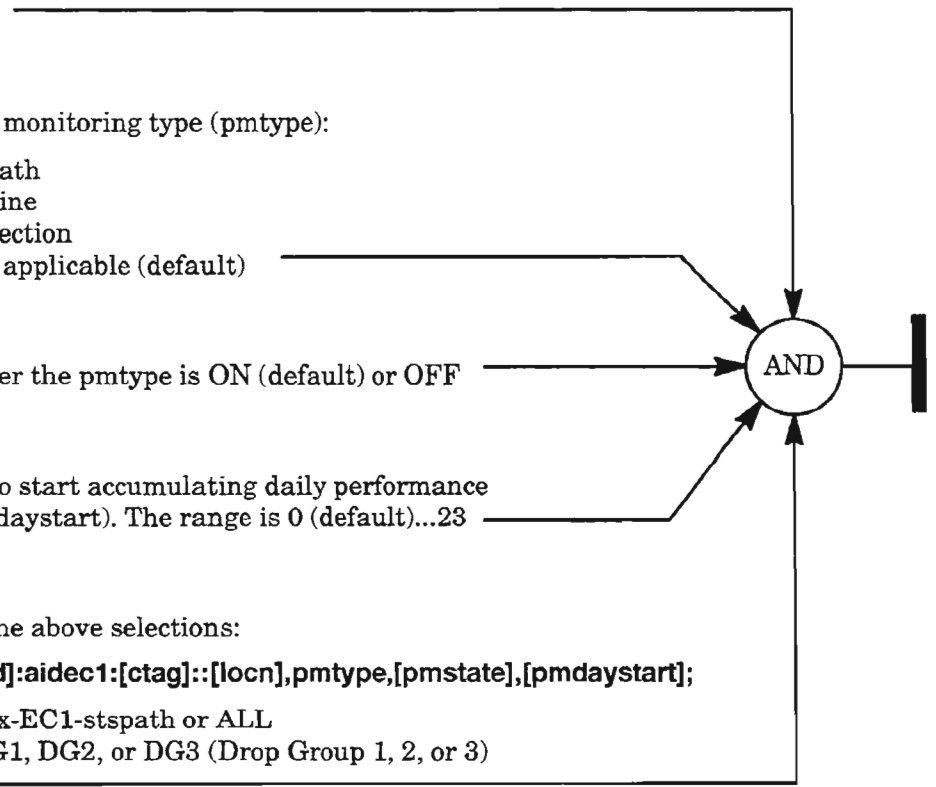
[27] Select (pmstate) whether the pmttype is ON (default) or OFF

[28] Select the time of day to start accumulating daily performance monitoring counts (pmdaystart). The range is 0 (default)...23

[29] Enter command with the above selections:

**SET-PMMODE-EC1:[tid]:aidec1:[ctag]::[locn],pmttype,[pmstate],[pmdaystart];**

where: aidec1 = dgx-EC1-stspath or ALL  
 dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
 stspath = 1



# Retrieve/Allow/Inhibit Scheduled Reporting of Performance Monitoring

[30] Enter the following command:

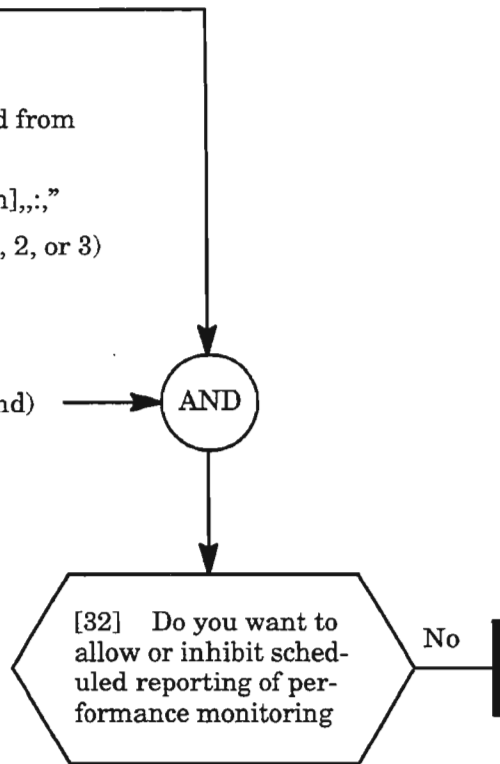
**RTRV-COND-EC1:[tid]:aidec1:[ctag]::INHPMREPT,[locn],[tmper];**

where: aidec1 = dgx-EC1-stspath or ALL  
 dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
 stspath = 1

[31] The response will list the facilities that are inhibited from reporting scheduled performance monitoring:

**"dgx-EC1-1,EC1:ntfncde,INHPMREPT,srveff,,,[locn],,,"**

where: dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
 ntfncde = CR, MJ, MN, NA, or NR  
 (alarm notification code)  
 srveff = SA (Service Affecting) or  
 NSA (Nonservice Affecting)  
 locn = NEND (near end) or FEND (far end)



[33] Enter the following command to allow PM reporting:

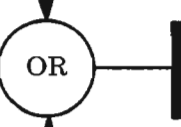
**ALW-PMREPT-EC1:[tid]:aidec1:[ctag];**

where: aidec1 = dgx-EC1-stspath or ALL  
 dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
 stspath = 1

[34] Enter the following command to inhibit PM reporting:

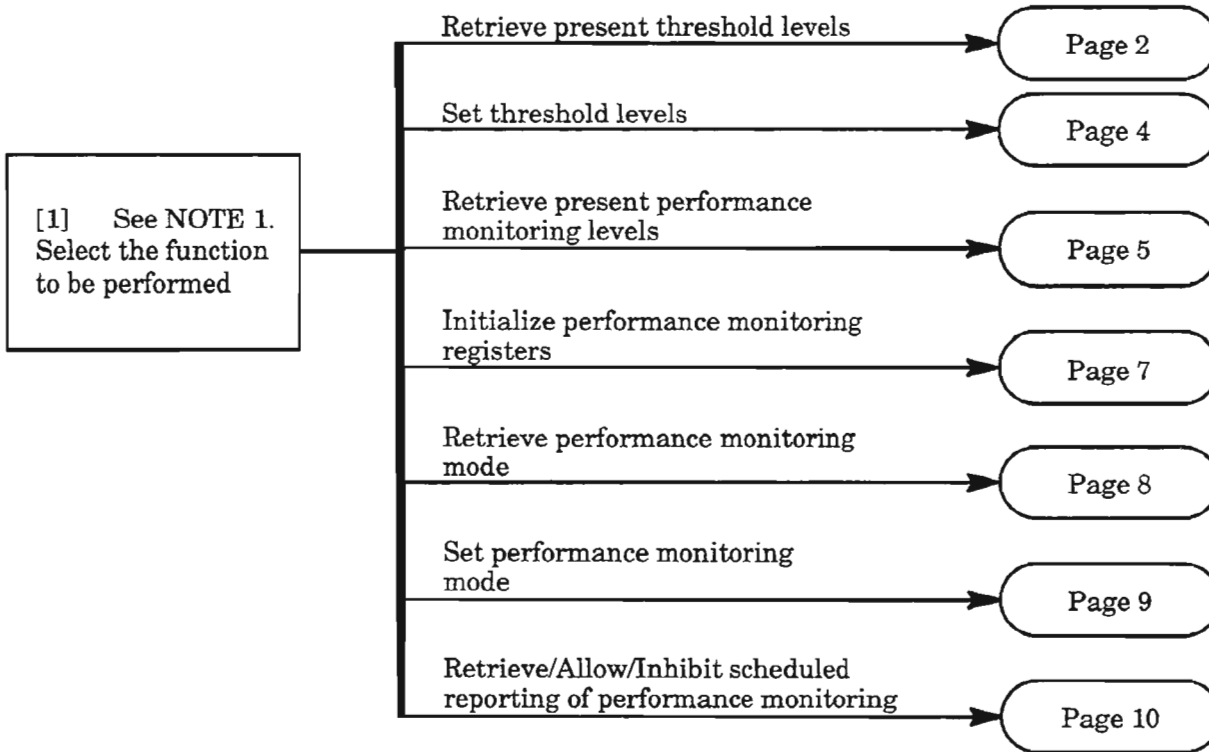
**INH-PMREPT-EC1:[tid]:aidec1:[ctag];**

where: aidec1 = dgx-EC1-stspath or ALL  
 dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
 stspath = 1



ISSUE 2	JULY 1994
ALCL 363-203-502	RTP
PAGE 10 of 10	008





**NOTE:** 1. *This procedure assumes the user is logged on the Network Element (DLP-117) and is authorized to set thresholds.*

## Retrieve Present Threshold Levels

[2] From Table A, Page 3, select the monitor parameter of interest (mont3th)

[3] Enter command:

**RTRV-TH-T3:[tid]:aidt3:[ctag]::[mont3th],[tmper];**

where: aidt3 = dgx-T3-t3port or ALL

dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

t3port = 1

mont3th = Step 2 (defaults to all parameters)

tmper = time period (1-DAY or 15-MIN, defaults to both)

(See NOTE 2)

[4] Analyze the response:

"dgx-T3-1,T3:mont3th,,thlev,[tmper]"

where: dgx = DG1, DG2, or DG3

mont3th = See Table A

thlev = present threshold level

tmper = time period

A flowchart diagram with three arrows pointing to a central circle labeled 'AND'. The top arrow originates from the text '[2] From Table A, Page 3, select the monitor parameter of interest (mont3th)'. The middle arrow originates from the text '(See NOTE 2)'. The bottom arrow originates from the text 'tmper = time period'. The 'AND' circle is connected to a thick vertical bar on the right.

**NOTE: 2.** For an explanation of the command and response, see *Commands and Messages Manual* (650205-823-022).

ISSUE 1	JULY 1994
ALCL 363-203-502	RTP
PAGE 2 of 10	009

**Table A. T3 PM Threshold Levels**

Monitor Type (mont3th)	Default		Range	Description
	15-Min	1-Day		
BERL-HT	4	4	4...9	Bit Error Ratio Line – High Threshold
BPV	387	3865	1...4,294,967,295	Bipolar violations
DSESL	44	44	1...65535	Number of coding violations to make one SESL
ESL	25	250	1...65535	Line Errored Seconds
SESL	4	40	1...65535	Line Severely Errored Seconds

## Set Threshold Levels

[5] See Table A, Page 3, for initial default threshold levels for reference

[6] Select the monitor type (mont3th) whose threshold level is to be set per Table A

[7] Determine the threshold level (thlev), from Range in Table A

[8] Determine the time period (tmper); i.e., duration the counts are to be made. Choices are: 1-DAY or 15-MIN (defaults to 15-MIN)

[9] Enter the command using the parameters above:

**SET-TH-T3:[tid]:aidt3:[ctag]::mont3th,thlev,,[tmper];**

where: aidt3 = dgx-T3-t3port or ALL

dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

t3port = 1

AND

ISSUE 1	JULY 1994
ALCL 363-203-502	RTP
PAGE 4 of 10	009

## Retrieve Present Performance Monitoring Levels

[10] From Table B, Page 6, select the monitor type from which data is retrieved (mont3) (defaults to all)

[11] Select the level and direction above which data is retrieved (monlev) in the format lev-dirn

where: lev = 0...32768

dirn = UP or DN (defaults to 1-UP)

[12] Select the time period, 1-DAY or 15-MIN (tmper), in which data is to be retrieved (defaults to both)

[13] Select the beginning date of performance monitoring period (mondat) specified in tmper parameter, in the format mon-day or ALL (default)

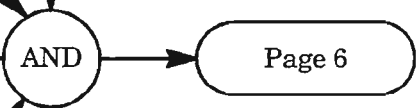
where: mon = 1...12 or ALL

day = 0...31 if mon ≠ ALL

[14] Select the beginning time of performance monitoring period (montm) specified in tmper (does not apply when tmper = 1-DAY). The formats are: hh-mm or ALL (default = 00-00)

where: hh = 0...23 or ALL

mm = 0...59 if hh ≠ ALL



## Retrieve Present Performance Monitoring Levels (cont)

[15] Enter command with data from Steps 10-14 (see NOTE 2, Page 2)

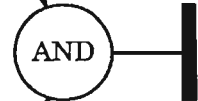
**RTRV-PM-T3:[tid]:aidt3:[ctag]::[mont3],[monlev],,,[tmper],[mondatt],[montm];**

where: aidt3 = dgx-T3-t3port or ALL  
 dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
 t3port = 1

[16] Analyze the response (reported only if PM is allowed):

“dgx-T3-1,T3:mont3,monval,[vldty],[locn],,[tmper],[mondatt],[montm]”

where: dgx = DG1, DG2, or DG3  
 mont3 = See Table B  
 monval = measured value (0x0...0xffffffff)  
 vldty = validity indicator:  
     ADJ - data has been manually adjusted or initialized  
     COMPL - data accumulated over the entire time period  
     PRTL - data accumulated over some portion of the time period  
     NA - Not Alarmed, reported via REPORT EVENT)  
 locn = FEND or NEND (far end or near end) location where the  
         performance monitoring reports  
 tmper = See Step 12  
 mondatt = See Step 13  
 montm = See Step 14



**Table B. T3 PM Types**

Monitor Type (mont3)	Description
BPV	Bipolar Violations
ESL	Line Errored Seconds
SESL	Line Severely Errored Seconds

## Initialize Performance Monitoring Registers

[17] Select the monitor type (mont3) whose value is to be initialized (see Table B, Page 6) (defaults to all)

[18] Determine the time period (tmper) of the mont3 that is to be initialized (1-DAY or 15-MIN) (defaults to all)

[19] Select the beginning date of performance monitoring period (mondat) specified in tmper parameter, in the format mon-day or ALL (default)

where: mon = 1...12 or ALL,  
day = 0...31 if mon ≠ ALL

[20] Select the beginning time of performance monitoring period (montm) specified in tmper (does not apply when tmper = 1-DAY). The formats are: hh-mm or ALL (default = 00-00)

where: hh = 0...23 or ALL  
mm = 0...59 if hh ≠ ALL

[21] Enter command using the parameters above:

**INIT-REG-T3:[tid]:aidt3:[ctag]::[mont3],,,[tmper],[mondat],[montm];**

where: aidt3 = dgx-T3-t3port or ALL  
dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
t3port = 1

(See NOTE 2, Page 2)

AND

ISSUE 1	JULY 1994
ALCL 363-203-502	RTP
PAGE 7 of 10	009

## Retrieve Performance Monitoring Mode

[22] Select the location (locn) where the performance monitoring reports:

FEND (far end)  
NEND (near end)

[23] Enter the command with the above data:

**RTRV-PMMODE-T3:[tid]:aidt3:[ctag]::[locn];**

where: aidt3 = dgx-T3-t3port or ALL  
dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
t3port = 1

[24] Analyze the response:

"dgx-T3-1:[locn],pmtype,pmstate,[pmdystrt]"

where: dgx = DG1, DG2, or DG3  
locn = as described above  
pmtype = P (Path), or L (Line)  
pmstate = ON or OFF  
pmdaystart = time of day to start accumulating daily performance monitoring counts (0...23) (0 is midnight)

```
graph LR; A1[ ] --> AND((AND)); A2[ ] --> AND; A3[ ] --> AND; AND --> B[ ]
```

AND

ISSUE 1	JULY 1994
ALCL 363-203-502	RTP
PAGE 8 of 10	009



# Set Performance Monitoring Mode

[25] Select the location (locn) where the performance monitoring reports:

FEND (far end)

NEND (near end)

[26] Select the performance monitoring type (pmttype):

P = transport Path

L = transport Line

ALL = all that are applicable (default)

[27] Select (pmstate) whether the pmttype is

ON (default) or OFF

[28] Select the time of day to start accumulating daily performance monitoring counts (pmdaystart). The range is 0 (default)...23

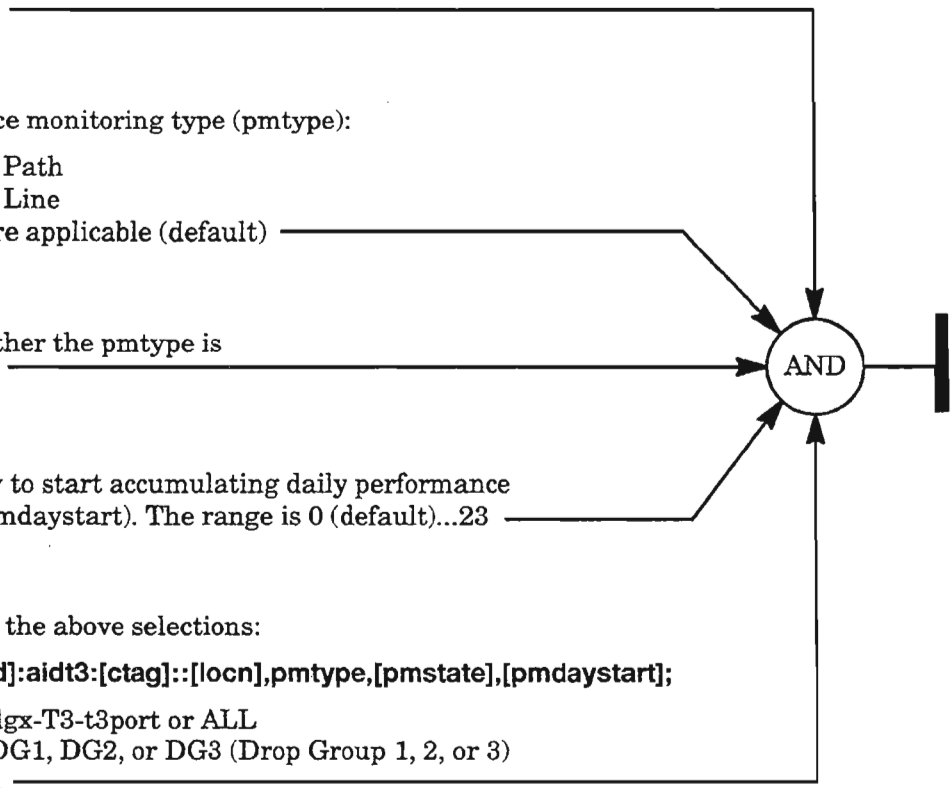
[29] Enter command with the above selections:

**SET-PMMODE-T3:[tid]:aidt3:[ctag]::[locn],pmttype,[pmstate],[pmdaystart];**

where: aidt3 = dgx-T3-t3port or ALL

dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)

t3port = 1



# Retrieve/Allow/Inhibit Scheduled Reporting of Performance Monitoring

[30] Enter the following command:

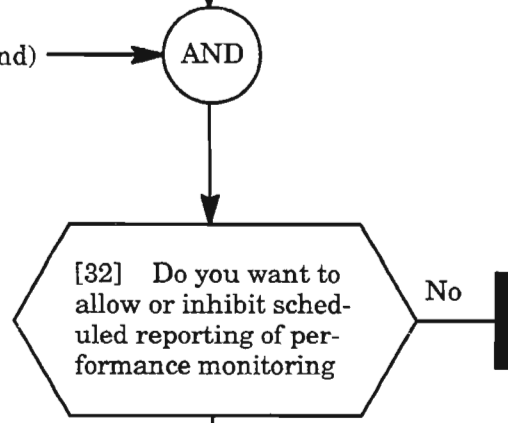
**RTRV-COND-T3:[tid]:aidt3:[ctag]::INHPMREPT,[locn],[tmper];**

where: aidt3 = dgx-T3-t3port or ALL  
 dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
 t3port = 1

[31] The response will list the facilities that are inhibited from reporting scheduled performance monitoring:

“dgx-T3-1,T3:ntfncde,INHPMREPT,srveff,,,[locn],,;”

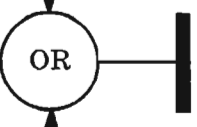
where: dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
 ntfncde = CR, MJ, MN, NA, or NR  
 (alarm notification code)  
 srveff = SA (Service Affecting) or  
 NSA (Nonservice Affecting)  
 locn = NEND (near end) or FEND (far end)



[33] Enter the following command to allow PM reporting:

**ALW-PMREPT-T3:[tid]:aidt3:[ctag];**

where: aidt3 = dgx-T3-t3port or ALL  
 dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
 t3port = 1



[34] Enter the following command to inhibit PM reporting:

**INH-PMREPT-T3:[tid]:aidt3:[ctag];**

where: aidt3 = dgx-T3-t3port or ALL  
 dgx = DG1, DG2, or DG3 (Drop Group 1, 2, or 3)  
 t3port = 1

