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DMS-100 Family

North American DMS-100

Alarm Clearing and Performance Monitoring Procedures

Volume 4 of 4

LEC0015 and up Standard 14.02 May 2001

NORTEL NETWORKS™

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Alarm Clearing and Performance Monitoring Procedures

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Contents

Alarm Clearing and Performance Monitoring Procedures Volume 4 of 4

NTP Summary Contents vii

1 Peripheral module alarm clearing procedures (continued) 1-1

Introduction 1-1
Alarm display 1-1
Indication 1-1
Meaning 1-1
Result 1-1
Common procedures 1-1
Action 1-2
PM MLIU critical 1-3
PM MLIU major 1-19
PM MLIU minor 1-33
PM MSB6, MSB7 critical, major, or minor 1-52
PM NIU critical 1-82
PM NIU major 1-101
PM NIU minor 1-116
PM PMLOAD minor 1-145
PM STC major or minor 1-156
PM SysB major 1-168
PM talk battery critical 1-182
PM talk battery minor 1-194
PM UEN critical 1-205
PM UEN major 1-220
PM UEN minor 1-233
PM VLCM critical 1-241
PM VLCM minor 1-247
PM VPU critical 1-251
PM VPU major 1-276
PM VPU minor 1-298
PM XLIU critical 1-324
PM XLIU major 1-338
PM XLIU minor 1-351

2 Trunks alarm clearing procedures 2-1

Introduction 2-1
Alarm display 2-1
Indication 2-1
Meaning 2-1
Result 2-1
Common procedures 2-1
Action 2-2
TRKS 62CG AIS SPM minor 2-3
TRKS 62G BERSF SPM minor 2-10
TRKS 62GC LOS SPM critical 2-16
TRKS 62TG BERSD SPM minor 2-22
TRKS 62TG LOP SPM minor 2-28
TRKS 62TG RAI SPM minor 2-35
TRKS 62TG RFI SPM minor 2-42
Trks C minor 2-49
Trks CB critical, major, or minor 2-55
Trks CC critical 2-61
Trks CE critical, major, or minor 2-69
Trks CG minor 2-74
Trks CM major 2-81
Trks CR C and CR M critical 2-88
Trks CS critical, major, or minor 2-96
Trks EX critical, major, or minor 2-102
Trks GC, GM, and G critical, major, or minor 2-106
Trks MB critical, major, or minor 2-115
Trks MJ C and MJ M critical or major 2-120
Trks MN C and MN M critical or major 2-128
Trks SB critical, major, or minor 2-137

3 XAC alarm clearing procedures 3-1

Introduction 3-1
Alarm display 3-1
Indication 3-1
Meaning 3-1
Result 3-1
Common procedures 3-1
Action 3-2
FWsoak minor 3-3
FWvers major 3-4

4 Alarm clearing common procedures 4-1

Introduction to alarm clearing common procedures 4-1
Application 4-1
Action 4-1
Accessing SPM alarms DMS-Spectrum Peripheral Module 4-2
Activating CCS7 links 4-16
Activity switch with memory match 4-26
Allocating a volume 4-34
Checking the electronic fuse unit in an LME or RLM frame 4-38

Clearing lines alarms 4-43
Clearing PM C-side faults 4-47
Clearing ringing generator faults LCM 4-63
Connecting temporary fiber cable between MS and SSLPP 4-69
Connecting temporary fiber cable from an ENET to a PM 4-80
Connecting temporary fiber cable from an ENET to an MS 4-91
Correcting a load mismatch 4-103
Deallocating a volume 4-118
Failure to switch clock mastership 4-122
Loading a PM 4-131
Monitoring system maintenance PM 4-139
Moving an XSG to a spare XLIU 4-144
Resetting a volume 4-150
Restoring LIM unit cross-links 4-154
Returning LIM-to-MS links to service 4-167
Returning LIM-to-MS links to service for an ELPP 4-189
Running a C7BERT 4-211
Running a C7BERT for high-speed links 4-244

NTP Summary Contents

Alarm Clearing and Performance Monitoring Procedures Volume 1 of 4

About this document xi

How to check the version and issue of this document xi
References in this document xi
What precautionary messages mean xii
How commands, parameters, and responses are represented xiii
Input prompt (>) xiii
Commands and fixed parameters xiii
Variables xiii
Responses xiv

1 Procedures to clear application alarms 1-1

Introduction 1-1
Alarm display 1-1
Indication 1-1
Meaning 1-1
Result 1-1
Common procedures 1-2
Action 1-2
APPL CallP major 1-3
APPL SDM critical 1-5
APPL SDM minor 1-6

2 Common channel signaling alarm clearing procedures 2-1

Introduction 2-1
Alarm display 2-1
Indication 2-1
Meaning 2-1
Result 2-1
Common procedures 2-2
Action 2-2
CCS 2RS LBC SPM critical 2-3
CCS 2RS OPR SPM critical 2-9
CCS 2RS OPT SPM critical 2-16
CCS LK minor 2-24
CCS LK minor in a DPNSS 2-43

CCS LKM major 2-52
CCS LSSC critical 2-70
CCS LSSM major 2-78
CCS PC minor 2-87
CCS PCC critical 2-91
CCS RS critical 2-95
CCS RS major 2-101
CCS RSSC critical 2-106
CCS RTRC critical 2-115
CCS RTRM major 2-124

3 Computing module alarm clearing procedures 3-1

Introduction 3-1
Alarm display 3-1
Indication 3-1
Meaning 3-1
Result 3-1
Common procedures 3-2
Action 3-2
CM AutoLd minor 3-3
CM CBsyMC major 3-6
CM ClkFlt major 3-14
CM CMFlt major 3-21
CM CMTrap major 3-34
CM E2A minor 3-37
CM EccOn minor 3-41
CM IMAGE critical 3-46
CM JInact minor 3-49
CM LowMem critical 3-52
CM LowSpr major 3-60
CM LowSpr minor 3-68
CM MBsyMC major 3-76
CM MC Tbl minor 3-84
CM MemCfg minor 3-96
CM MemCor major 3-109
CM MemCor minor 3-115
CM MemFlt minor 3-118
CM MemLim minor 3-123
CM MMnoSy major 3-126
CM MMsync major 3-136
CM NoBrst minor 3-139
CM NoOvr minor 3-146
CM NoSYNC major 3-153
CM NoTOD critical 3-159
CM PMCFlt major 3-166
CM PMCTbl minor 3-176
CM PrcOpt major 3-185
CM RExFlt major 3-188
CM RExSch minor 3-191
CM RExTst minor 3-197

CM SBsyMC major 3-202
CM SLMLIM major 3-213
CM SLMLim minor 3-216
CM SRAMFL major 3-219
CM SramFl minor 3-226
CM StrAlc critical 3-229

4 Procedures to clear an external alarm 4-1

Introduction 4-1
Alarm display 4-1
Indication 4-1
Meaning 4-1
Result 4-1
Common procedures 4-1
Action 4-2
Ext Crit critical 4-3
Ext Maj major 4-12
Ext Min minor 4-34
Ext CPPOOL critical 4-42
Ext CPPOOL major 4-47
Ext CPPOOL minor 4-52
Ext E911_ALI major 4-57
Ext E911_ALI minor 4-62
Ext E911_LDT critical 4-67
Ext E911_LDT major 4-71
Ext E911_LDT minor 4-75
Ext E911_OFBSR minor 4-79
Ext E911_OFBSR major 4-83
Ext E911_OFBSR critical 4-88
Ext E911_PSAP_OFFHK minor 4-93
Ext E911_RCER major 4-100
Ext E911_RCER minor 4-105
Ext E911_SRDB_MEMORY minor 4-110
Ext ESR minor 4-117
Ext ESR_TIME_ALARM minor 4-121
Ext FSP major 4-125
Ext FSP APC cabinet major 4-128
Ext FSP CCC frame major 4-137
Ext FSP CDSN cabinet with an MSP shelf major 4-146
Ext FSP CIOE cabinet with an MSP shelf major 4-153
Ext FSP CIPE cabinet with an MSP shelf major 4-160
Ext FSP CISM, CMTA, and CTME cabinet with an MSP shelf major 4-167
Ext FSP CPDC cabinet major 4-174
Ext FSP DCE frame major 4-182
Ext FSP DPCC cabinet major 4-191
Ext FSP DSNE frame or CDSN cabinet major 4-201
Ext FSP DTE or IDTE frame major 4-210
Ext FSP IOE frame and CIOE cabinet major 4-219
Ext FSP LME frame (with fuses only) major 4-228
Ext FSP LPP cabinet major 4-242

Ext FSP MEX frame major 4-250
Ext FSP MS7E frame major 4-265
Ext FSP NET0 or NET1 frame (circuit breakers and fuses) major 4-274
Ext FSP NET0 or NET1 frame (with fuses only) major 4-283
Ext FSP NETC frame major 4-292
Ext FSP PDC frame major 4-301
Ext FSP RLCE frame major 4-310
Ext FSP RLM frame (with fuses only) major 4-328
Ext FSP TME frame or CTME cabinet with FSP shelf major 4-341
Ext JESCALL minor 4-353
Ext JESUNANS minor 4-357
Ext MALO Major 4-361
Ext MALT Major 4-365

1 Peripheral module alarm clearing procedures (continued)

Introduction

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

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

Alarm display

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

Indication

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

Meaning

This section indicates the cause of the alarm.

Result

This section describes the results of the alarm condition.

Common procedures

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

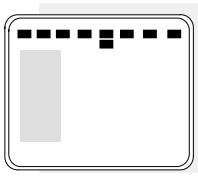
Do not use common procedures unless the stepaction procedure directs you.

Action

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

PM MLIU critical

Alarm display



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

Indication

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

Meaning

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

Impact

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

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

Common procedures

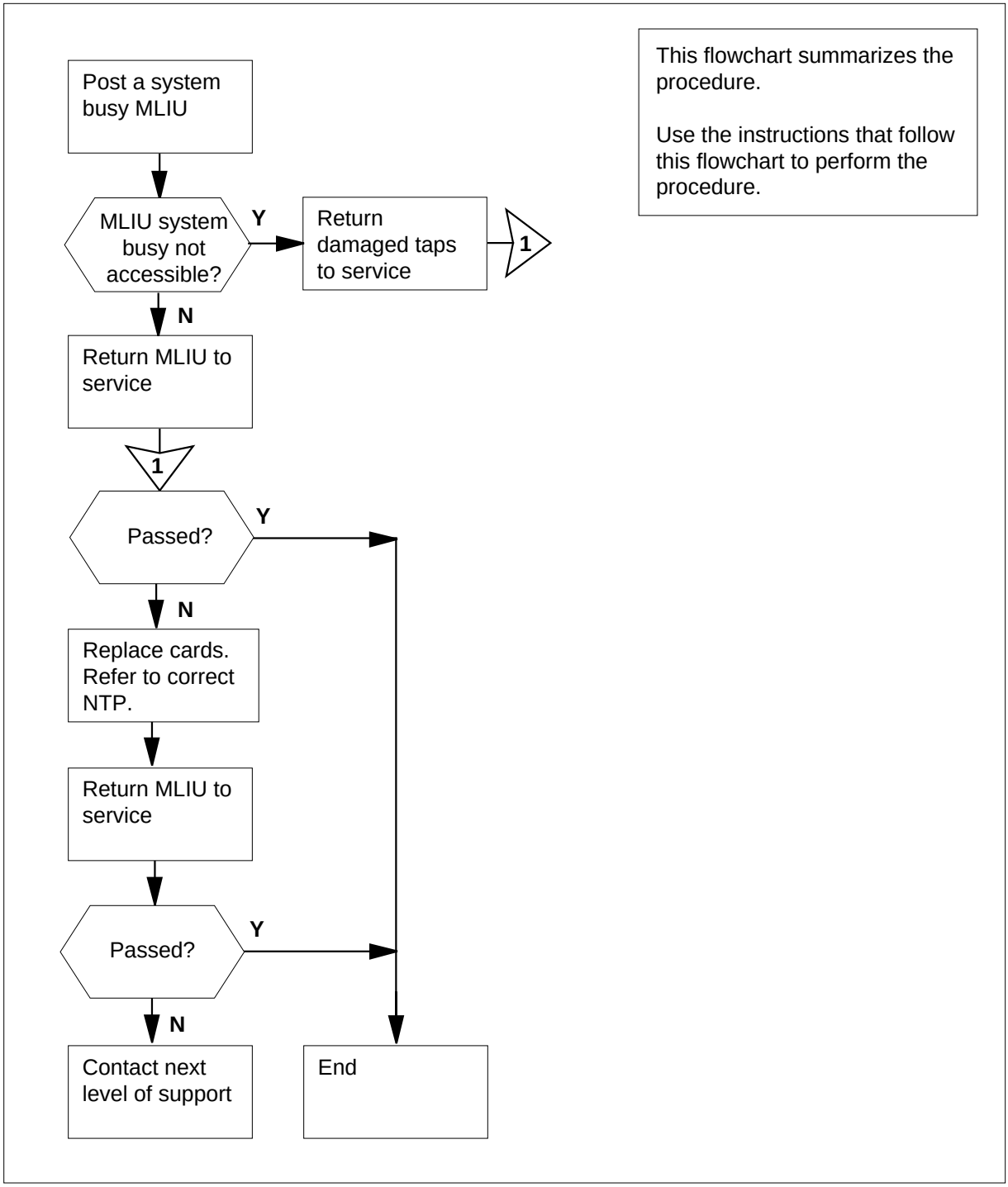
This procedure refers to *Activating CCS7 links*.

Action

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

PM MLIU
critical (continued)

Summary of clearing a PM MLIU alarm



PM MLIU
critical (continued)

Clearing a/an PM MLIU alarm

At your current location

1

WARNING
Possible action that affects service
Do not POST, RTS, and LOAD multiple sets of MLIUs. Finish work on one set of MLIUs before you work on another set.

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

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

If PM181 logs	Do
indicate an MLIU failed three autorecovery attempts and is in a forced autoload pending state	step 4
indicate the system busy MLIUs performed a correct automatic recovery	step 68

2 Determine if all the MS alarms cleared.

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

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

4 Determine if the MLIU critical alarm cleared.

If the MLIU alarm	Do
did clear	step 68
did not clear	step 5

PM MLIU
critical (continued)

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

>mapci;mtc;pm;post MLIU sysb

record which MLIU(s) is sysb, then type

>quit all

CI:

6 To access table LIUINV, type

>TABLE LIUINV

and press the Enter key

7 Position on the MLIU, type

>pos MLIU mliu_no

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

```
LIUNAME LOCATION LOAD PROCINFO CARDINFO
------------------------------------
MLIU 11 MS 12 0 2 28 MCA12BE NTEX22CA NTEX76AA NTEX26BA
64000 EBI
MLIU 402 MS 8 1 1 12 MCA12BE NTEX22CA NTEX76AA NTEX26BA
64000 EBI
```

8 Record the location information

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

9 Determine the MLIU location recorded in step 8. If the location is LIM, go to step 10. If the location is MS, go to step 67.

10 Quit from the table LIUINV, type

>QUIT

and press the Enter key

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

>MAPCI;MTC;PM

and press the Enter key.

12 To display all system busy MLIUs, type

>DISP STATE SYSB MLIU

and press the Enter key.

13 To post the first system busy MLIU on the list, type

>POST MLIU mliu_no

and press the Enter key.

where

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

PM MLIU
critical (continued)

14 Determine the state of the posted MLIU.

If the state of the posted MLIU	Do
`is SysB (NA)`	step 15
`is SysB`	step 49

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

If an FSP alarm	Do
is present	step 16
is not present	step 17

16 Perform the correct procedure in this document to clear the alarm. Complete the procedure and return to this point.

Go to step 51.

17 To determine if a condition that affects service for an NIU is present, type

`>QUERYPM`

and press the Enter key.

Note: In the following example, conditions that affect service appear under the heading Potential service affecting conditions .

Example of a MAP response:

PM MLIU
critical (continued)

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

Record the linkset names shown after Linkset.

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

Go to step 65.

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

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

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

`>POST  LIM  lim_no`

and press the Enter key.

where

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

Example of a MAP display:

```
LIM  1 ISTb
                    Links_OOS Taps_OOS
  Unit0: ISTb           2        .
  Unit1: ManB           2       18
```

PM MLIU
critical (continued)

21 Determine the state of the LIM.

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

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

23 Determine if the MLIU alarm cleared.

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

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

>FBUS

and press the Enter key.

Example of a MAP display:

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

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

25 Determine the state of the F-buses.

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

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

PM MLIU
critical (continued)

27 Determine if the MLIU alarm cleared.

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

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

>TRNSL fbus_no

and press the Enter key.

where

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

Example of a MAP response:

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

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

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

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

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

31 To return the F-bus tap to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

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

PM MLIU
critical (continued)

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

If the RTS command	Do
passed, and the other tap is M	step 29
passed, and the other tap is in service	step 32
failed	step 67

32 To quit from the F-bus level of the MAP display, type

```
>QUIT
```

and press the Enter key.

33 To post the system busy MLIU, type

```
>POST  MLIU mliu_no
```

and press the Enter key.

where

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

34 To return the MLIU to service, type

```
>RTS
```

and press the Enter key.

If the RTS command	Do
passed	step 59
failed	step 67

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

```
>BSY  FBUS  0  tap_no
```

and press the Enter key.

where

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

If the BSY command	Do
passed	step 37
failed	step 36

PM MLIU
critical (continued)

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

>BSY FBUS 0 tap_no FORCE

and press the Enter key.

where

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

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

>BSY FBUS 1 tap_no

and press the Enter key.

where

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

If the BSY command	Do
passed	step 39
failed	step 38

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

>BSY FBUS 1 tap_no FORCE

and press the Enter key.

where

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

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

>TABLE LIUINV

and press the Enter key.

MAP response:

```
TABLE: LIUINV
```

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

>POSITION MLIU mliu_no

and press the Enter key.

where

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

Example of a MAP response:

PM MLIU
critical (continued)

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

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

If the tuple	Do
contains NTEX22	step 41
contains NT9X13	step 43

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

42 Go to step 44.

43 Replace the NT9X13 card. To replace the card, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

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

`>RTS FBUS 0 tap_no`

and press the Enter key.

where

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

If the RTS command	Do
passed	step 45
failed	step 67

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

`>RTS FBUS 1 tap_no`

and press the Enter key.

where

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

If the RTS command	Do
passed	step 51
failed	step 67

PM MLIU
critical (continued)

46 To reset the MLIU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 58
failed	step 51

47 To manually busy the MLIU, type

>BSY

and press the Enter key.

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

48 To confirm the command, type

>YES

and press the Enter key.

Go to step

49 To force the MLIU to busy, type

>BSY FORCE

and press the Enter key.

If the response	Do
is `MLIU mliu_no BSY Passed`	step 51

PM MLIU
critical (continued)

If the response	Do
is `Busying MLIU mliu_no will take a CCS7 resource out of service Please confirm (“YES",“Y",“NO",or “N"):`	step 50
is other than listed here, including additional messages with the above response	step 67

50 To confirm the command, type

>YES

and press the Enter key.

Go to step 51

51 To load the MLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 58
failed	step 52

52 To test the MLIU, type

>TST

and press the Enter key.

If the TST command	Do
passed	step 58
fails, and the system generates a card list that contains cards that are not changed	step 53
is other than listed here	step 67

53 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the first card on the list.

54 To replace the card, perform the correct procedure in *Card Replacement Procedures* to replace the card. Complete the procedure and return to this point.

PM MLIU
critical (continued)

55 To load the MLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 56
failed	step 67

56 To test the MLIU, type

>TST

and press the Enter key.

If the TST command	Do
passed	step 58
fails, and you did not replace more cards on the list	step 57
is other than listed here	step 67

57 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the next card on the list.

Go to step 54.

58 To return the MLIU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 59
failed	step 67

59 To access the C7LKSET level of the MAP display to determine that the CCS7 link on the MLIU is in service, type

>CCS;CCS7;C7LKSET

and press the Enter key.

60 To post the linkset that associates with the MLIU, type

>POST C linkset_name

and press the Enter key.

where

PM MLIU
critical (continued)

linkset_name
is the linkset name determined in step 17.

Example of a MAP display:

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

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

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

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

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

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

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

64 Determine if the link activated.

If the link activation	Do
passed	step 65
failed	step 67

65 Determine if the MLIU alarm cleared.

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

PM MLIU
critical (end)

If the alarm	Do
did not clear	step 67

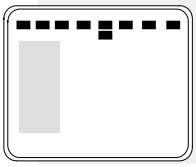
66 Repeat steps 60 to 64 for every linkset for that MLIU.

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

68 The procedure is complete.

PM MLIU major

Alarm display



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

Indication

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

Meaning

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

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

Result

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

Common procedures

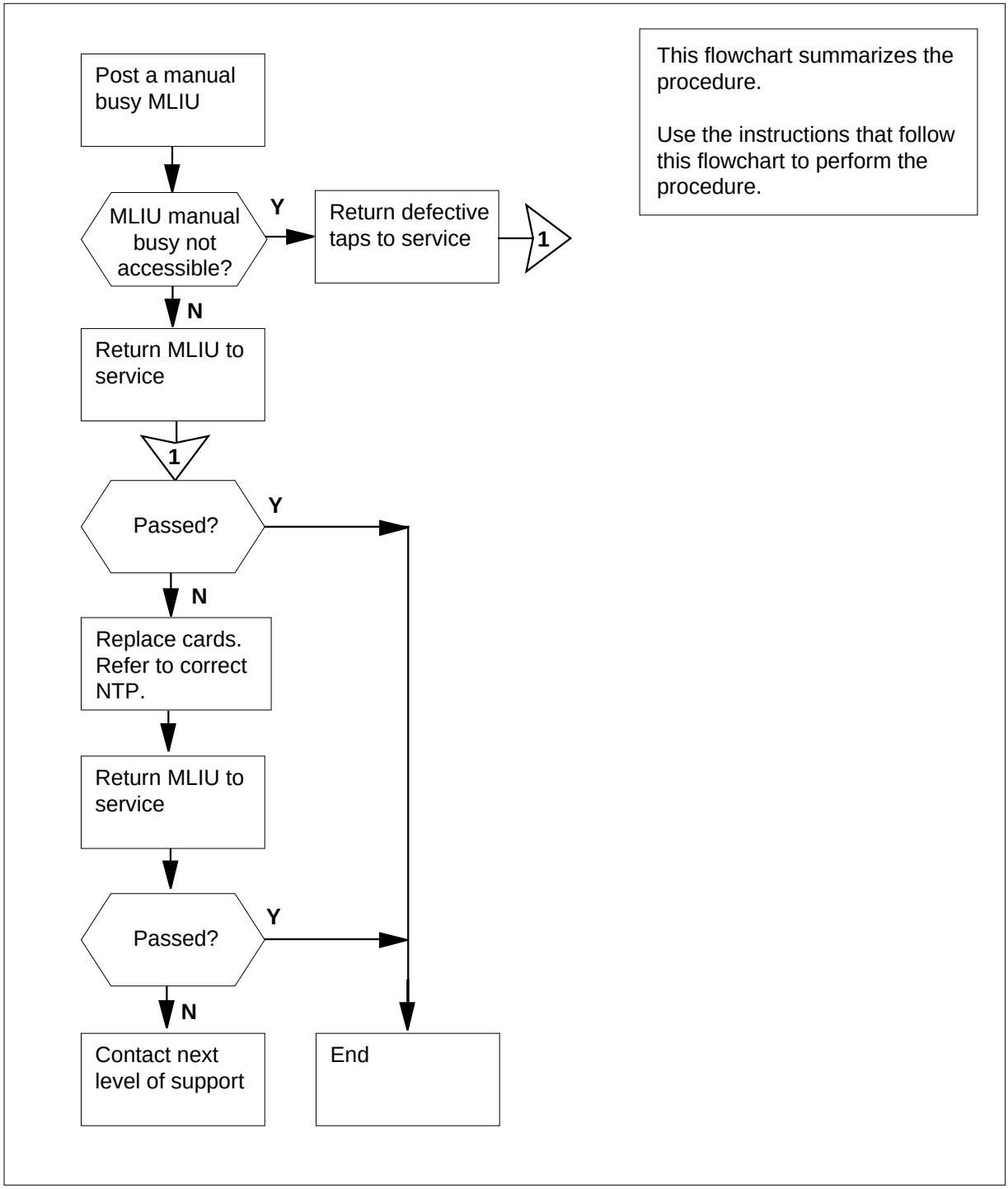
This procedure refers to *Activating CCS7 links.*

Action

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

PM MLIU
major (continued)

Summary of clearing a PM MLIU major alarm



PM MLIU
major (continued)

Clearing a PM MLIU major alarm

WARNING
Possible service-affecting action
Do not POST, RTS and LOAD multiple sets of MLIUs. Finish work on one set of MLIUs before you work on another set.

At the MAP terminal

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

2 Determine if all the MS alarms cleared.

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

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

4 Determine if the MLIU major alarm cleared.

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

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

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

record which MLIU(s) is sysb, then type

```
>quit all
CI:
```

6 To access table LIUINV, type

```
>TABLE LIUINV
```

and press the Enter key

7 Position on the MLIU, type

```
>pos MLIU mliu_no
```

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

PM MLIU
major (continued)

```
LIUNAME LOCATION LOAD PROCINFO CARDINFO
_____________________________________
MLIU 11 MS 12 0 2 28 MCA12BE NTEX22CA NTEX76AA NTEX26BA
64000 EBI
MLIU 402 MS 8 1 1 12 MCA12BE NTEX22CA NTEX76AA NTEX26BA
64000 EBI
```

8 Record the location information

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

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

10 Quit from the table LIUINV, type

>QUIT

and press the Enter key.

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

>MAPCI;MTC;PM

and press the Enter key.

12 To display all manual busy MLIUs, type

>DISP STATE MANB MLIU

and press the Enter key.

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

>POST MLIU mliu_no

and press the Enter key.

where

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

14 Determine the state of the posted MLIU.

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

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

If an FSP alarm	Do
is present	step 16

PM MLIU
major (continued)

If an FSP alarm	Do
is not present	step 17

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

Go to step 46.

17 To determine if a condition that affects service for an NIU is present, type

>QUERYPM

and press the Enter key.

Note: In the following example, conditions that affect service appear under the header Potential service affecting conditions.

Example of a MAP response:

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

Record the linkset names shown after Linkset.

If an NIU condition that affects service	Do
is present	step 18
is not present	step 19

18 To clear the alarm, perform the correct NIU procedure in this document. Complete the procedure and return to this point.

PM MLIU
major (continued)

Go to step 61.

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

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

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

>POST LIM lim_no

and press the Enter key.

where

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

Example of a MAP display:

```
LIM  1 ISTb
                    Links_OOS Taps_OOS
  Unit0: ISTb             2        .
  Unit1: ManB             2       18
```

21 Determine the state of the LIM.

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

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

23 Determine the state of the posted MLIU.

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

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

>FBUS

and press the Enter key.

Example of a MAP display:

PM MLIU
major (continued)

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

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

25 Determine the state of the F-buses.

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

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

27 Determine the state of the posted MLIU.

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

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

>TRNSL fbus_no

and press the Enter key.

where

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

Example of a MAP response:

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

PM MLIU
major (continued)

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

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

If the state of either F-bus tap	Do
fluctuates from I to S or is S	step 35
is M	step 30
is I	step 62

30 Determine from office records or from operating company personnel what caused the tap to be out of service. When you have permission, continue this procedure to return the tap to service.

31 To return the F-bus tap to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

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

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

If the RTS command	Do
passed, and the other tap is M	step 29
passed, and the other tap is in service	step 53
failed	step 62

32 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

33 To post the MLIU, type

>POST MLIU mliu_no

and press the Enter key.

where

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

PM MLIU
major (continued)

34 To return the MLIU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 54
failed	step 62

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

>BSY FBUS 0 tap_no

and press the Enter key.

where

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

If the BSY command	Do
passed	step 37
failed	step 36

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

>BSY FBUS 0 tap_no FORCE

and press the Enter key.

where

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

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

>BSY FBUS 1 tap_no

and press the Enter key.

where

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

If the BSY command	Do
passed	step 39
failed	step 38

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

>BSY FBUS 1 tap_no FORCE

PM MLIU
major (continued)

and press the Enter key.

where

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

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

>TABLE LIUINV

and press the Enter key.

MAP response:

```
TABLE: LIUINV
```

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

>POSITION MLIU mliu_no

and press the Enter key.

where

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

Example of a MAP response:

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

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

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

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

>RTS FBUS 0 tap_no

and press the Enter key.

where

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

If the RTS command	Do
passed	step 43
failed	step 62

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

>RTS FBUS 1 tap_no

and press the Enter key.

where

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

If the RTS command	Do
passed	step 46
failed	step 62

44 To post the manual busy MLIU, type

>POST MLIU mliu_no

and press the Enter key.

where

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

45 To reset the MLIU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 53
failed	step 46

46 To load the MLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 53
failed	step 47

47 To test the MLIU, type

>TST

and press the Enter key.

If the TST command	Do
passed	step 53

PM MLIU
major (continued)

If the TST command	Do
failed, and the system generates a card list that contains cards that you did not change	step 48
is other than listed here	step 62

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

49 To replace the card, perform the correct procedure in *Card Replacement Procedures.* Complete the procedure and return to this point.

50 To load the MLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 51
failed	step 62

51 To test the MLIU, type

>TST

and press the Enter key.

If the TST command	Do
passed	step 53
failed, and more cards on the list that are not replaced are present	step 52
is other than listed here	step 62

52 Record the location, description, slot number, product engineering code (PEC), and PEC suffix, of the next card on the list.

Go to step 49.

53 To return the MLIU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 54

PM MLIU
major (continued)

If the RTS command	Do
failed	step 62

54 To access the C7LKSET level of the MAP display to determine that the CCS7 link on the MLIU is in service, type

>CCS;CCS7;C7LKSET

and press the Enter key.

55 To post the linkset that associates with the MLIU

>POST C linkset_name

and press the Enter key.

where

linkset_name
is the linkset name determined in step 17.

Example of a MAP display:

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

56 Determine the traffic state of the CCS7 link for the MLIU you are working on.

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

If the state of the CCS7 link	Do
is InSv	step 63
is other than listed here	step 57

57 Wait eight minutes to determine if the CCS7 link terminated on the MLIU establishes again.

If the state of the link	Do
is InSv	step 63
is other than listed here	step 58

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

PM MLIU
major (end)

59 Determine if the link activated.

If the link activation	Do
passed	step 61
failed	step 62

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

61 Determine if the MLIU alarm cleared.

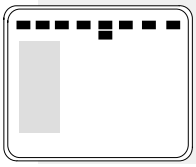
If the alarm	Do
cleared	step 63
decreased in number (for example, changed from 2MLIU to 1MLIU)	step 11
did not clear	step 62

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

63 The procedure is complete.

PM MLIU minor

Alarm display



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

Indication

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

Meaning

A minimum of one MLIU has in-service trouble.

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

Result

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

Common procedures

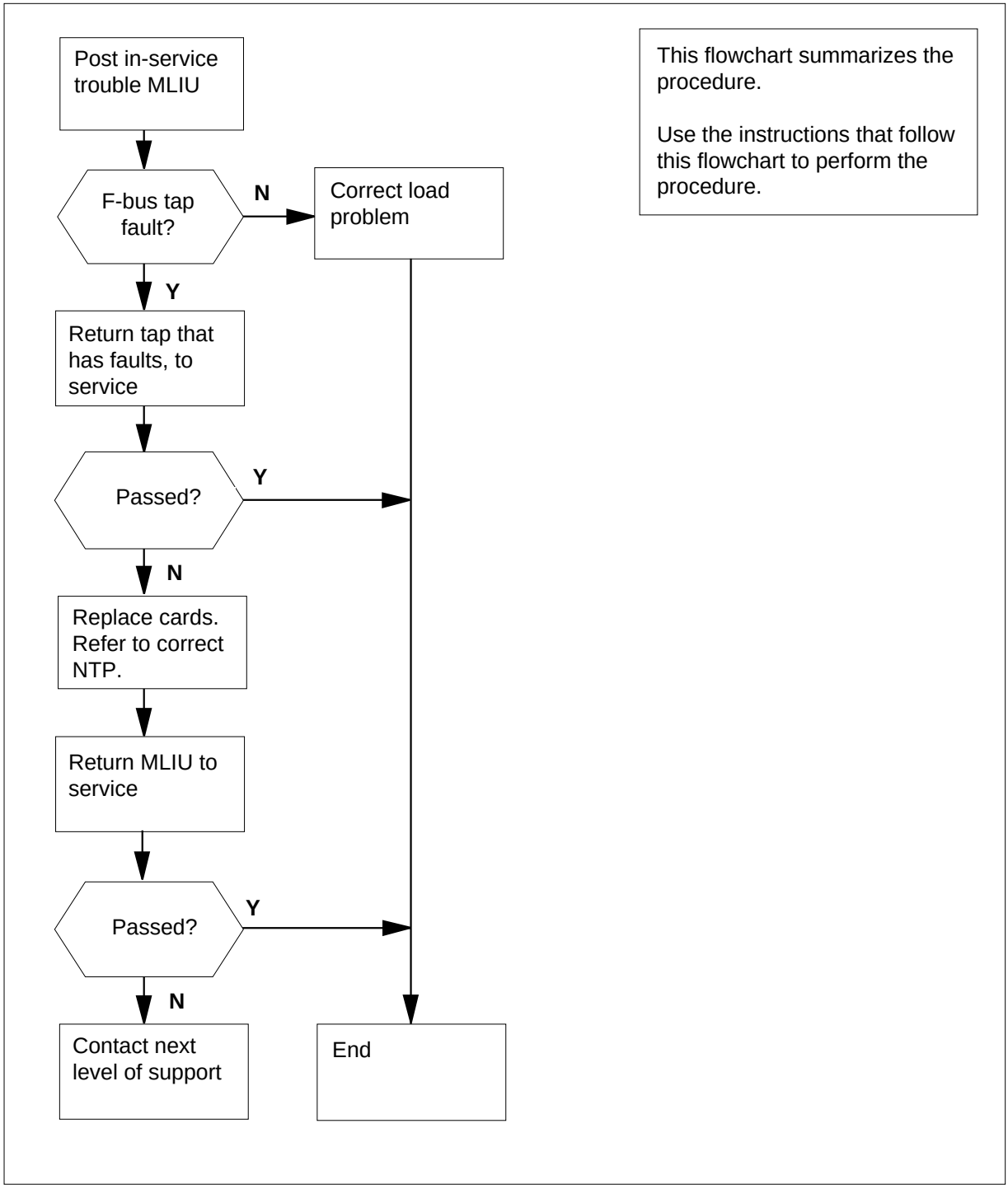
This procedure refers to *Activating CCS7 links*.

Action

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

PM MLIU
minor (continued)

Summary of clearing a PM MLIU minor alarm



PM MLIU
minor (continued)

Clearing a PM MLIU minor alarm

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

WARNING
Possible service-affecting action
Do not POST, RTS and LOAD multiple sets of MLIUs. Finish work on one set of MLIUs before you work on another set.

At the MAP terminal

1 Determine if all the MS alarms cleared.

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

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

3 Determine if the MLIU minor alarm cleared.

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

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

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

record which MLIU(s) is sysb, then type

```
>quit all
CI:
```

5 To access table LIUINV, type

```
>TABLE LIUINV
```

PM MLIU
minor (continued)

and press the Enter key

6 Position on the MLIU, type

>pos MLIU mliu_no

where, mliu_no is the number of the MLIU returned at step 4

```
LIUNAME LOCATION LOAD PROCINFO CARDINFO
_____________________________________
MLIU 11 MS 12 0 2 28 MCA12BE NTEX22CA NTEX76AA NTEX26BA
64000 EBI
MLIU 402 MS 8 1 1 12 MCA12BE NTEX22CA NTEX76AA NTEX26BA
64000 EBI
```

7 Record the location information

Note: The location is shown under the LOCATION header of the MAP display. The example in step 6 indicates that the location is MS.

8 Determine the MLIU location recorded in step 7. If the location is LIM, go to step 9. If the location is MS, go to step 83.

9 Quit from the table LIUINV, type

>QUIT

and press the Enter key.

10 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

11 To display all in-service trouble MLIUs, type

>DISP STATE ISTB MLIU

and press the Enter key.

12 To post the first in-service trouble MLIU on the list, type

>POST MLIU mliu_no

and press the Enter key.

where

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

13 To query the state of the MLIU , type

>QUERYPM

and press the Enter key.

Example of a MAP response:

PM MLIU
minor (continued)

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

Record the linkset names shown after Linkset.

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

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

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

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

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

PM MLIU
minor (continued)

16 Determine if a mismatch between the name of the default load and the running load is present.

Note: The names of the default and running loads appear in the third and fourth lines of the response. The system generates the response in step 13.

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

17 Determine the number of the LIM that associates with the MLIU.

Note: The number of the associated LIM appears in the second line of the response that the system generated in step 13.

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

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the LIM number (0 to 16)

Example of a MAP display:

```
LIM  1 ISTb
                    Links_OOS Taps_OOS
  Unit0: ISTb             2        .
  Unit1: ManB             2       18
```

19 Determine the state of the LIM.

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

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

21 Determine if the MLIU alarm cleared.

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

PM MLIU
minor (continued)

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

>FBUS

and press the Enter key.

Example of a MAP display:

```
LIM 1 Insv
                          Links_OOS   Taps_OOS
Unit0:  Insv              .           1
Unit1:  InSv              .           2
             Tap:   0   4   8   12  16  20  24  28  32
 FBus0: Insv        BBBB ..S. .... .... ----  ----  ----  ---.  ..--
 FBus1: InSv        ...M .I.. .S.. .... ----  ----  ----  ---.  ..--
```

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

23 Determine the state of the F-buses.

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

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

25 Determine if the MLIU alarm cleared.

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

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

>TRNSL fbus_no

and press the Enter key.

where

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

(determined in step 13)

PM MLIU
minor (continued)

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

Example of a MAP response:

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

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

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

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

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

`>BSY FBUS fbus_no tap_no`

and press the Enter key.

where

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

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

If the BSY command	Do
passed	step 31
failed	step 29

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

`>BSY FBUS fbus_no tap_no FORCE`

and press the Enter key.

where

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

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

Go to step 31.

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

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

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

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

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

If the RTS command	Do
passed, and the other tap is not in service	step 32
passed, and the other tap is in service	step 82
failed, and the system generates a card list	step 33
is other than listed here	step 83

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

If the state of the other F-bus tap	Do
is M	step 30
is S	step 28

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

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

>CCS;CCS7;C7LKSET

and press the Enter key.

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

>POST C linkset_name

and press the Enter key.

PM MLIU
minor (continued)

where

linkset_name
is the name of the linkset returned in step 13.

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

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

`>INH link_no`

and press the Enter key.

where

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

If the INH command	Do
passed	step 37
failed	step 83

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

`>BSY link_no`

and press the Enter key.

where

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

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

38 To confirm the command, type

`>YES`

and press the Enter key

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

Go to step 39

PM MLIU
minor (continued)

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

>PM

and press the Enter key.

40 To post the MLIU, type

>POST MLIU mliu_no

and press the Enter key.

where

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

41

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

To manually busy the MLIU, type

>BSY

and press the Enter key.

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

42 To confirm the command, type

>YES

and press the Enter key

43 Replace the first card on the list recorded in step 33. To replace the card, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

44 To set the MLIU again, type

>PMRESET

PM MLIU
minor (continued)

and press the Enter key.

If the PMRESET command	Do
passed	step 48
failed	step 45

45 To load the MLIU, type

>LOADPM

and press the Enter key.

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

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

47 Go to step 44.

48 To post the LIM that associates with the MLIU, type

>POST LIM lim_no

and press the Enter key.

where

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

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

>FBUS

and press the Enter key.

50 To return the F-bus tap to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

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

PM MLIU
minor (continued)

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

If the RTS command	Do
passed	step 51
failed	step 83

51 Determine the state of the other F-bus tap that associates with the MLIU.

If the other F-bus tap	Do
is M	step 30
is S	step 28
is in service	step 52

52 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

53 To post the MLIU, type

>POST MLIU mliu_no

and press the Enter key.

where

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

54 To return the MLIU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 75
failed	step 83

55 Determine from office records or from operating company personnel the name of the load that runs in the switch.

56 Determine if the default load name matches the correct load name determined in step 55.

If the default load name	Do
matches the correct load name	step 63

PM MLIU
minor (continued)

If the default load name	Do
does not match the correct load name	step 57

57 To access table LIUINV, type

>TABLE LIUINV

and press the Enter key.

58 To position on the key value of the tuple to change, type

>POSITION MLIU mliu_no

and press the Enter key.

where

mliu_no
is the number of the in-service trouble MLIU (0 to 511)

Example of a MAP response:

```
MLIU 102 LIM 1 1 12  LRC36CV      NTEX22BB
                                NT9X76AA NT9X78AA  FBUS
```

59 To specify the field in the tuple to change, type

>CHANGE LOAD

and press the Enter key.

60 To enter the new value of the field that you want to change, type

>new_value

and press the Enter key.

where

new_value
is the new value for the field

Example of a MAP response:

```
TUPLE TO BE CHANGED:
MLIU 102 LIM 1 1 12  LCC36BX    NTEX22BB
                           NT9X76AA NT9X78AA  FBUS

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

61 To confirm the new value of the changed field, type

>Y

and press the Enter key.

MAP response:

```
TUPLE CHANGED
```

PM MLIU
minor (continued)

62 To quit from the table, type

>QUIT

and press the Enter key.

63 Determine if the running load name matches the correct load name that you determined in step 55.

If the running load	Do
is correct	step 75
is not correct	step 64

64 To access the C7LKSET level of the MAP display, type

>CCS;CCS7;C7LKSET

and press the Enter key.

65 To post the linkset that associates with the MLIU, type

>POST C linkset_name

and press the Enter key.

where

linkset_name
is the name of the linkset

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

66 To inhibit the link, type

>INH link_no

and press the Enter key.

where

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

If the INH command	Do
passed	step 67
failed	step 83

67 To manually busy the link, type

>BSY link_no

and press the Enter key.

where

PM MLIU
minor (continued)

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

If the response	Do
is `Link link_no:Traffic is running on that link Please confirm (“YES",“Y",“NO", or “N"):`	step 68
is other than listed here, including additional messages with above response	step 83

68 To confirm the command, type

>YES

and press the Enter key

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

>PM

and press the Enter key.

70 To post the in-service trouble MLIU, type

>POST MLIU mliu_no

and press the Enter key.

where

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

71

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

To manually busy the MLIU, type

>BSY

and press the Enter key.

If the response	Do
is `Busying MLIU mliu_no will take a CCS7 resource out of servicePlease confirm (“YES",“Y",“NO",or “N"):`	step 72
is other than listed here, including additional messages with above response	step 83

72 To confirm the command, type

>YES

and press the Enter key.

73 To load the MLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 74
is other than listed here	step 83

74 To return the MLIU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 75
failed	step 83

75 To access the C7LKSET level of the MAP display, type

>CCS;CCS7;C7LKSET

and press the Enter key.

76 To post the linkset that associates with the MLIU, type

>POST C linkset_name

and press the Enter key.

where

PM MLIU
minor (continued)

linkset_name
is the linkset name

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

Example of a MAP display:

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

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

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

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

78 To return the link to service, type

>RTS link_no

and press the Enter key.

where

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

If the RTS command	Do
passed	step 79
failed	step 83

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

>UINH link_no

and press the Enter key.

where

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

If the UINH command	Do
passed	step 82
failed	step 83

80 Wait eight minutes to see if the CCS7 link terminated on the MLIU establishes again.

If, after eight minutes, the link	Do
is InSv	step 82
is other than listed here	step 81

81 Perform the procedure *How to activate CCS7 links* in this document. Complete the procedure and return to this point.

If the link activation	Do
passed	step 82
failed	step 83

82 Determine if the MLIU minor alarm cleared.

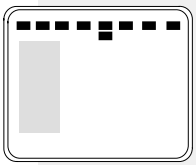
If the MLIU minor alarm	Do
cleared	step 84
reduced in number (for example, changed from 4MLIU to 3MLIU)	step 10
did not clear	step 83

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

84 The procedure is complete.

PM MSB6, MSB7 critical, major, or minor

Alarm display



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

Indication

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

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

Meaning

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

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

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

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

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

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

Result

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

Common procedures

This procedure refers to the following common procedures:

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

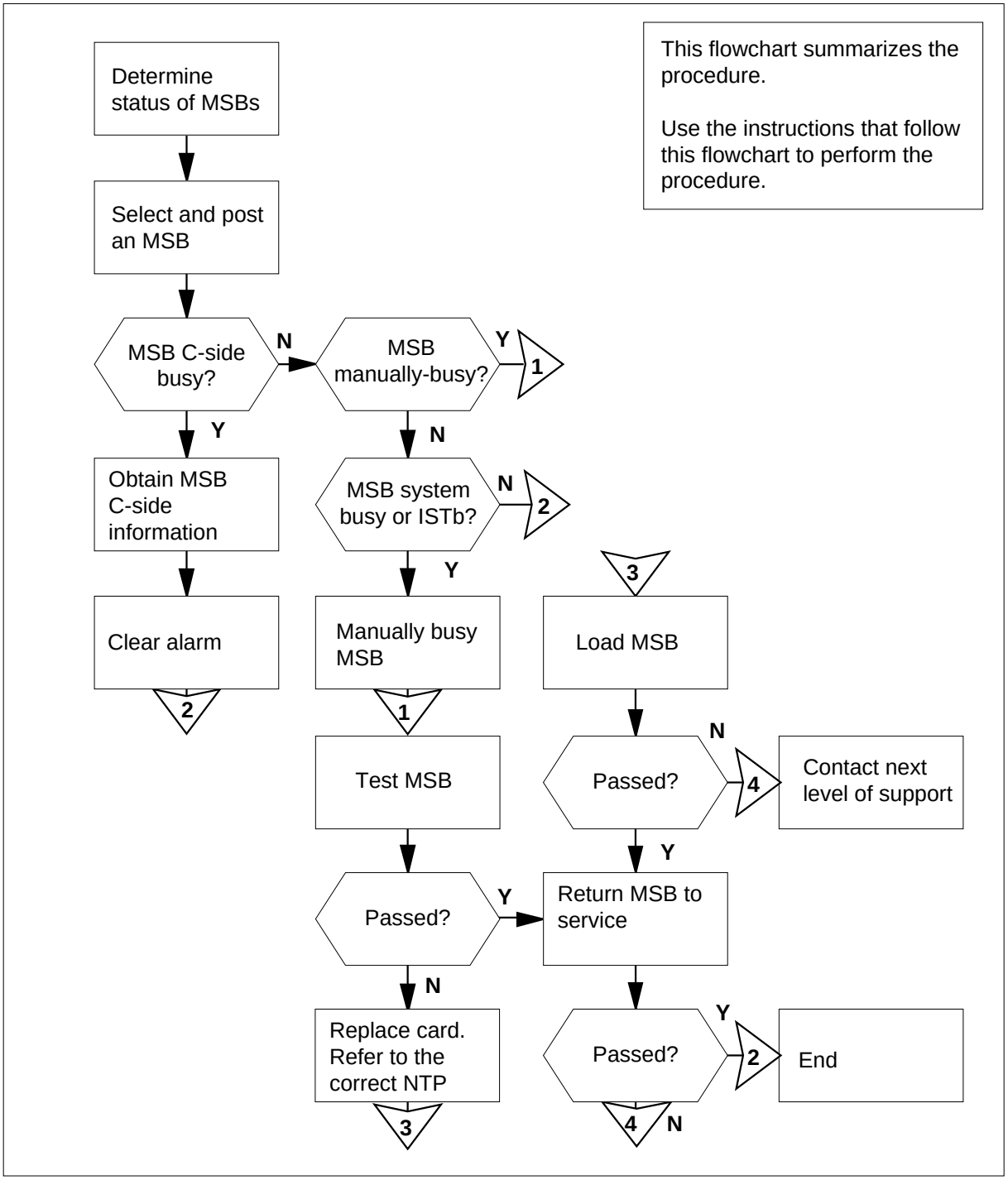
Do not go to the common procedures unless the step-action procedure directs you to go.

Action

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

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

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



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

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

At the MAP display

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

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP display:

```
          SysB    ManB    OffL    CBsy    ISTb    InSv
PM          15       1       0       1       3       5
```

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

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

3 Perform the correct procedure in this document.

4 Determine if an audible alarm rings.

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

5 To silence the alarm, type

>SIL

and press the Enter key.

6 To display the status of all PMs, type

>STATUS

and press the Enter key.

Example of a MAP response:

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

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

7 Determine the state of the MSBs.

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

8 To display all system busy MSBs, type

>DISP STATE SYSB MSBx

and press the Enter key.

where

x
is the type of MSB (6 or 7)

Example of a MAP response:
SysB MSB7 : 0,3,5

9 Record the number of each system busy MSB.

10 Choose a system busy MSB on which to work.

11 To post the MSB, type

>POST MSBx msb_no

and press the Enter key.

where

x
is the type of MSB (6 or 7)

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

Example of a MAP response:

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

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

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

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

13 To determine the location of the MSB, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

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

At the MSxE frame

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

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

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

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

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

At the MAP display

16 To manually busy the MSB unit, type

>BSY UNIT unit_no

and press the Enter key.

where

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

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

If the BSY command	Do
passes	step 18
other than listed here	step 17

17 To force the MSB unit to busy, type

>BSY UNIT unit_no FORCE

and press the Enter key.

where

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

18 To replace the NT2X70, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

19 To load the MSB unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or 1) that you busied in step 16

If the LOADPM command	Do
passes	step 21
is other than listed here	step 20

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

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

>RTS UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or 1) that you busied in step 16

If the RTS command	Do
passes, and the MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14

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

If the RTS command	Do
passes, the MSB unit is InSv, but the fail lamp was ON for the power converter on the other MSB unit	step 16
passes, and both MSB units are InSv, but you recorded other SysB MSBs in step 9	step 11
passes, both MSB units are InSv, and other MSBs are not SysB	step 110
fails, and you replaced the power converter that has faults	step 37

22 To manually busy the MSB, type

>BSY PM

and press the Enter key.

If the BSY command	Do
passes	step 24
fails	step 23

23 To force the MSB to busy, type

>BSY PM FORCE

and press the Enter key.

24 To replace the NT2X70 card, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

25 To load the MSB, type

>LOADPM PM

and press the Enter key.

If the LOADPM command	Do
passes	step 27
fails	step 26

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

27 To return the MSB to service, type

>RTS PM

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

and press the Enter key.

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

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

`>QUERYPM FLT`

and press the Enter key.

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

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

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

If the MAP response	Do
`is load failed`	step 51
`is Distributed Data loading failed`	step 51
is other than listed here	step 109

29 The system performs maintenance on the unit that changed to the inactive (Inact) unit. The Mtce flag appears next to the unit when system maintenance is in progress. When system maintenance is complete, repeat step 28.

30 To determine the status of the C-side link, type

`>TRNSL C`

and press the Enter key.

Example of a MAP response:

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

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

Note 1: Link 2 to link 29 do not appear in this example.

Note 2: C-side links with a status of OK are in service. Any other status indicates an out-of-service C-side link.

If the links	Do
are out-of-service	step 31
are in service	step 35

31 Record the network, plane, and link number of the links that do not have a status of OK.

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

33 To post the MSB that had out-of-service C-side links, type

`>PM;POST MSBx msb_no`

and press the Enter key.

where

x
is the type of MSB (6 or 7)

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

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

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

34 Determine if one or both MSB units are system busy.

If	Do
one MSB unit is SysB	step 35
both MSB units are SysB	step 48

35 To manually busy the MSB unit, type

>BSY UNIT unit_no

and press the Enter key.

where

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

If the BSY command	Do
passes	step 37
fails	step 36

36 To force the MSB unit to busy, type

>BSY UNIT unit_no FORCE

and press the Enter key.

where

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

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

37 To test the MSB unit, type

>TST UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

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

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

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

39 To reset the MSB unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

MSB7 0 Unit 1 PMReset Passed

If the PMRESET command	Do
passes	step 40
fails	step 43

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

>RTS UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:
MSB7 0 Unit 1 Rts Passed

If the RTS command	Do
passes, and both MSB units are InSv, but you recorded other SysB MSBs in step 9	step 11
passes, and one MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14
passes, and one MSB unit is InSv, while the other MSB unit is ManB	step 77
passes, and one MSB unit is InSv, while the other MSB unit is ISTb	step 92
passes, both MSB units are InSv, while the other MSB unit is SysB	step 110
passes, and both MSB units are ISTb	step 95
fails, and the system generated a card list	step 41
fails, and the system did not generate a card list	step 43

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

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

43 To load the MSB unit, type

>LOADPM UNIT unit_no

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

and press the Enter key.

where

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

If the LOADPM command	Do
passes	step 46
fails	step 44

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

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

```
>RTS  UNIT  unit_no
```

and press the Enter key.

where

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

Example of a MAP response:
MSB7 0 Unit 1 Rts Passed

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

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

If the RTS command	Do
fails, and the system did not generate a card list	step 109

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

47 Go to step 43.

48 To manually busy the MSB, type

>BSY PM

and press the Enter key.

Example of a MAP response:
MSB7 0 Bsy Passed

49 To test the MSB, type

>TST PM

and press the Enter key.

Example of a MAP response:

```
MSB70 Unit 0    Non-Destructive ROM test and
                OSvce tests will be run
MSB70 Unit 1    Non-Destructive ROM test and
                OSvce tests will be run
MSB70 Unit 0    Tst Passed
MSB70 Unit 1    Tst Passed
```

If the TST command	Do
passes on both units	step 50
fails on one or both units, and part of the response is `Try PMRESET`	step 39
fails on one or both units, and part of the response is `check for possible logs`	step 38
fails on one or both units, and part of the response is `PM failed to initialize, try reloading`	step 53
fails on one or both units, and the system generated a card list	step 41
fails on one or both units, and the system did not generate a card list	step 43

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

If the TST command	Do
other than listed here	step 109

50 To return the MSB to service, type

>RTS PM

and press the Enter key.

Example of a MAP response:
MSB7 0 Rts Passed

If the RTS command	Do
passes, and both MSB units are InSv, but you recorded other SysB MSBs in step 9	step 11
passes, and one MSB unit is InSv or ISTb, while the other MSB unit is SysB	step 14
passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
passes, both MSB units are InSv, and other MSBs are not SysB	step 110
passes, and both MSB units are ISTb	step 95
fails on one unit, and the system generated a card list	step 41
fails on one unit, and the system did not generate a card list	step 43

51 Determine if one or both MSB units are system busy.

If	Do
one MSB unit is SysB	step 52
both MSB units are SysB	step 56

52 To manually busy the system busy MSB unit, type

>BSY UNIT unit_no

and press the Enter key.

where

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

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

53 To load the MSB unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or1) that you busied in step 52

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

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

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

>RTS UNIT unit_no

and press the Enter key.

where

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

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

56 To manually busy the MSB, type

>BSY PM

and press the Enter key.

57 To load the MSB, type

>LOADPM PM

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

and press the Enter key.

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

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

59 To return the MSB to service, type

>RTS PM

and press the Enter key.

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

60 To display all C-side busy MSBs, type

>DISP STATE CBSY MSBx

and press the Enter key.

where

x
is the type of MSB (6 or 7)

Example of a MAP response:
CBsy MSB7 : 6,8

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

62 Choose an MSB on which to work.

63 To post the MSB, type

>POST MSBx msb_no

and press the Enter key.

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

where

x
is the type of MSB (6 or 7)

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

Example of a MAP response:

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

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

64 Work on the C-side busy unit first.

65 The fault is on the C-side of the MSB.

To obtain the network, plane, and link numbers of the links that the MSB communicates through, type

>TRNSL C

and press the Enter key.

Example of a MAP response:

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

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

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

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

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

>PM;POST MSBx msb_no

and press the Enter key.

where

x
is the type of MSB (6 or 7)

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

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

Example of a MAP response:

```
MSB7     6 CBsy  Links_OOS: CSide  0 , PSide  0
Unit0:   Act   InSv
Unit1:   Inact SysB
```

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

68 To display all manually-busy MSBs, type

>DISP STATE MANB MSBx

and press the Enter key.

where

x
is the type of MSB (6 or 7)

Example of a MAP response:
ManB MSB7 : 2,10

69 Record the number of each manually-busy MSB.

70 Choose an MSB on which to work.

71 To post the MSB, type

>POST MSBx msb_no

and press the Enter key.

where

x
is the type of MSB (6 or 7)

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

Example of a MAP response:

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

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

72 Choose a manually-busy unit to work on (0 or 1).

73 Determine from office records or operating company personnel why the unit is manually-busy.

When you have permission, continue the procedure.

74 To test the MSB unit, type

>TST UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

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

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

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

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

76 To reset the MSB unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or 1) that you tested in step 74

Example of a MAP response:
MSB7 2 Unit 1 PMReset Passed

If the PMRESET command	Do
passes	step 77
fails	step 80

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

>RTS UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or 1) that you tested in step 74

Example of a MAP response:
MSB7 2 Unit 1 Rts Passed

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

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

If the RTS command	Do
passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
passes, and both MSB units are ISTb	step 95
fails, and the system generated a card list	step 78
fails, and the system did not generate a card list	step 80
other than listed here	step 109

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

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

80 To load the MSB unit, type

```
>LOADPM  UNIT  unit_no
```

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or 1) that you tested in step 74

If the LOADPM command	Do
passes	step 82
fails	step 81

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

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

```
>RTS  UNIT  unit_no
```

and press the Enter key.

where

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

Example of a MAP response:
MSB7 2 Unit 1 Rts Passed

If the RTS command	Do
passes, and the MSB unit is InSv or ISTb, while the other MSB unit is ManB	step 73

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

If the RTS command	Do
passes, both MSB units are InSv, and other MSBs are not ManB	step 110
passes, and both MSB units are InSv, but you recorded other ManB MSBs in step 69	step 71
passes, and the MSB unit is InSv, while the other MSB unit is ISTb	step 92
passes, and both MSB units are ISTb	step 95
fails and you did not replace all cards in the list that you recorded in step 78	step 83
fails and you replaced all cards in the list that you recorded in step 78	step 109
other than listed here	step 109

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

84 Go to step 80.

85 To display all in-service trouble MSBs, type

```
>DISP  STATE  ISTB  MSBx
```

and press the Enter key.

where

x
is the type of MSB (6 or 7)

Example of a MAP response:
ISTb MSB7 : 12

86 Record the number of each in-service trouble MSB.

87 Choose an MSB on which to work.

88 To post the selected MSB, type

```
>POST  MSBx  msb_no
```

and press the Enter key.

where

x
is the type of MSB (6 or 7)

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

Example of a MAP response:

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

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

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

89 Go to step 28 to work on the system busy unit first.

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

91 Perform the procedure *Clearing a PM IPML major or minor alarm* in this document. Complete the procedure and return to this point.

92 Determine if the posted MSB unit is active or inactive.

Note: The activity status of the unit appears on the right of the MSB unit number in the MAP display that appears in step 88.

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

93 To switch the activity of the units, type

>SWACT

and press the Enter key.

Example of a MAP response:

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

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

94

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

To confirm the command, type

>YES

and press the Enter key.

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

95 Work on the inactive ISTb unit.

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

>QUERYPM FLT

and press the Enter key.

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

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

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

If the response	Do
is Fault with STI card	step 100
is C-side links out of service	step 105
is other than listed here	step 109

97 If other in-service trouble conditions are not present, the system automatically returns the MSB unit to service. The system returns the MSB unit to service after a dynamic data or superframe synchronization process.

Note: The system requires 5 min to change the status of the MSB unit after a dynamic data or superframe synchronization process.

If after 5 min	Do
the MSB unit is `InSv`, while the other MSB is `ISTb`	step 96
both MSB units are `InSv`, and other MSBs are not `ISTb`	step 110
both MSB units are `InSv`, but you recorded other `ISTb` MSBs in step 86	step 88
the MSB unit remains `ISTb`	step 96

98 Perform the procedure *Correcting and load mismatch* in this document. Complete the procedure and return to this point.

99 Determine the status of the MSB units from the MAP display of the posted MSB.

Note: A maintenance flag (Mtce) appears when maintenance tasks are in progress. Wait until the flag disappears before you proceed with the next maintenance action.

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

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

100

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

To busy the MSB unit, type

>BSY UNIT unit_no

and press the Enter key.

where

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

If the BSY command	Do
passes	step 101
fails	step 109

101 To return the MSB unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

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

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

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

102 To load the MSB unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

If the LOADPM command	Do
passes	step 104
fails	step 103

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

104 To return the MSB unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

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

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

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

>TRNSL C

and press the Enter key.

Example of a MAP response:

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

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

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

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

106 Record the network, plane, and link number of the links that do not have a status of OK.

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

108 To post the MSB that had out-of-service C-side links, type

`>PM;POST MSBx msb_no`

and press the Enter key.

where

x
is the type of MSB (6 or 7)

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

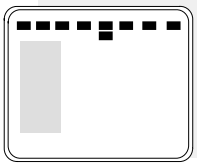
If the MSB	Do
is InSv, and other MSBs are not ISTb	step 110
is InSv, but you recorded other InSv MSBs in step 86	step 88
remains ISTb	step 96

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

110 The procedure is complete.

PM NIU critical

Alarm display



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

Indication

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

Meaning

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

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

Result

The indicated NIUs are out of service.

Common procedures

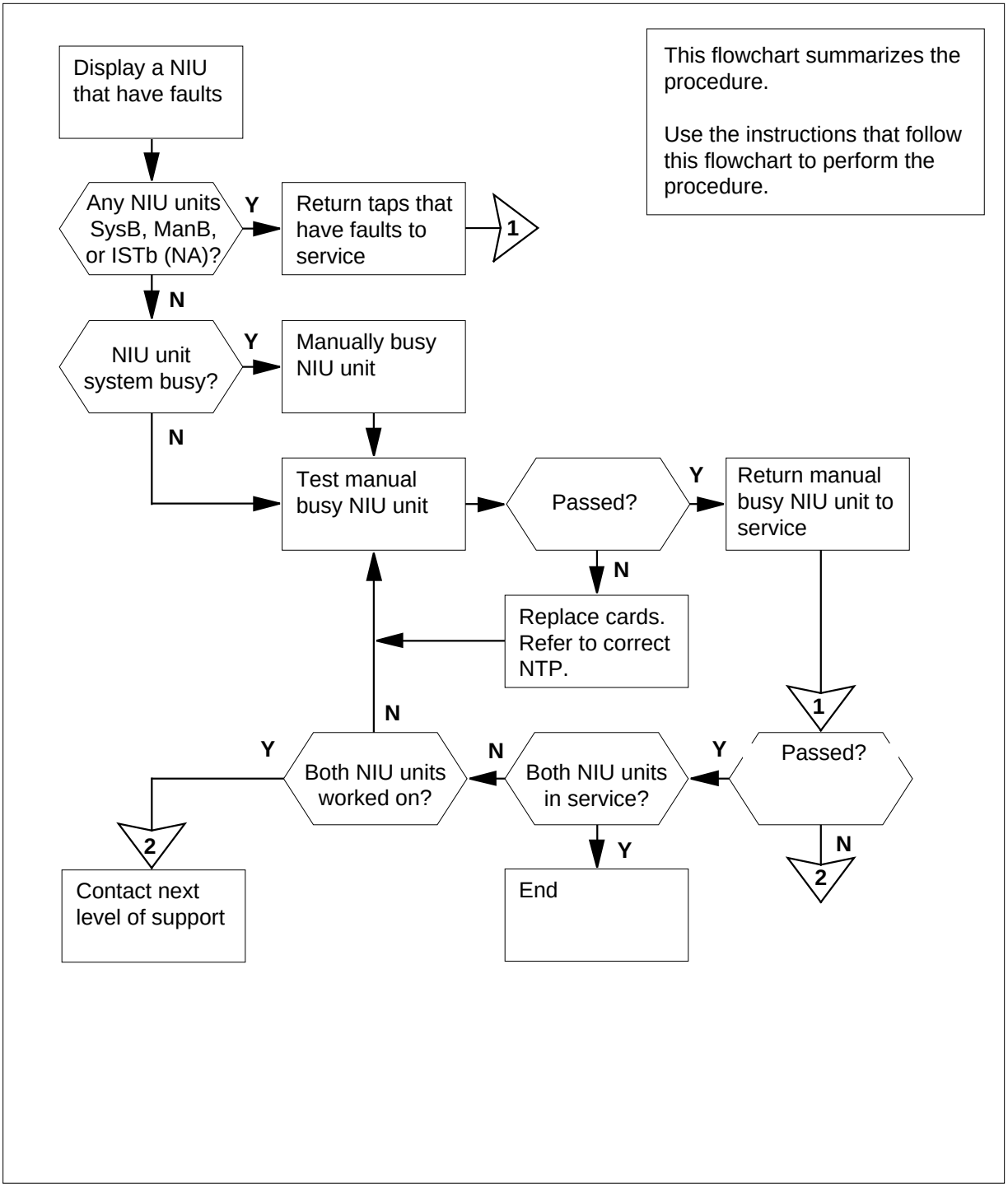
There are no common procedures.

Action

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

PM NIU
critical (continued)

Sumary of clearing a PM NIU critical alarm



PM NIU
critical (continued)

Clearing a PM NIU critical alarm

At the MAP terminal

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

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP display:

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

2 To display all system busy NIUs, type

>DISP STATE SYSB NIU

and press the Enter key.

Example of a MAP response:

```
SysB NIU: 0
```

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

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

>POST NIU ISTB

and press the Enter key.

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

>NEXT

and press the Enter key.

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

5 Choose a system busy NIU to work on.

6 To post the selected system busy NIU, type

>POST NIU niu_no

and press the Enter key.

where

PM NIU
critical (continued)

niu_no
is the number of the NIU (0 to 29)

Example of a MAP display:

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

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

Go to step 9.

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

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

`>POST NIU niu_no`

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

Example of a MAP display:

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

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

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

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

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

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

When you have permission, continue this procedure.

PM NIU
critical (continued)

11 To test the manual busy NIU unit, type

>TST UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

```
One or more problems are suspected with the following
cards. Please check them in the order listed.
Site Flr RPos Ray_id Shf Description Slot EqPEC
HOST  00  A00 NIU:001 02  IPF        22   EX22BB FRNT
HOST  00  A00 NIU:001 02  CBC        21   EX25BA FRNT
```

If the TST command	Do
passed	step 71
failed, and the system generates a card list	step 12
failed, and the system does not generate a card list	step 14

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

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

14 To reset the NIU unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

15 To confirm the command, type

>YES

PM NIU
critical (continued)

and press the Enter key.

If the PMRESET command	Do
passed	step 19
failed	step 16

16 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

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

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

18 Go to step 14.

19 To test the manual busy NIU unit, type

>TST UNIT unit_no

and press the Enter key.

where

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

If the TST command	Do
passed	step 71

PM NIU
critical (continued)

If the TST command	Do
failed, and you did not replace all cards in the list that you recorded in step 12	step 17
failed, and you replaced all cards in the list that you recorded in step 12	step 72

20 To manually busy the system busy NIU unit, type

>BSY UNIT unit_no

and press the Enter key.

where

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

Go to step 11.

21 To determine the number of the link interface module (LIM) which associates with the NIU, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

```
PM Type:  NIU   PM No:  2   Status:  SYSb (NA)
   Unit 0 Status:       {InAct, SysB(NA)}
   Unit 1 Status:       {Act  , SysB}
Site Flr RPos Bay_id Shf Pos Description Slot_Range
HOST    1  A         4   1      NIU   2      18 – 21
Location:   LIM 2 shelf 1
Unit 0 Software Load.Datafilled:NRS34CJ
                        Actual:NRS34CJ
UNIT 1 Software Load.Datafilled:NRS34CJ Actual:
```

22 Record the number of the LIM for the NIU you are working on. An example of a MAP response appears in step 21.

23 To post the LIM for the NIU, type

>POST LIM lim_no

and press the Enter key.

where

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

PM NIU
critical (continued)

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

>FBUS

and press the Enter key.

Example of a MAP display:

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

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

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

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

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

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

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

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

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

PM NIU
critical (continued)

Go to step 1.

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

Go to step 1.

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

Go to step 1.

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

Go to step 1.

31 To determine the F-bus taps for the NIU, type

>TRNSL n

and press the Enter key.

where

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

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

Example of a MAP response:

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

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

33 Determine the state of the F-bus taps for the NIU unit.

Note: The tap numbers that you recorded in step 32 apply to both F-buses. An example of the MAP appears in step 24.

If the state of	Do
both F-bus taps is M	step 34
both F-bus taps is S	step 44
one F-bus tap is M and the other F-bus tap is S	step 34

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

PM NIU
critical (continued)

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

When you have permission, continue this procedure.

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

`>RTS FBUS fbus_no tap_no`

and press the Enter key.

where

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

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

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

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

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

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

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

`>PM`

and press the Enter key.

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

`>POST NIU niu_no`

PM NIU
critical (continued)

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

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

41

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

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

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

`>BSY UNIT unit_no`

and press the Enter key.

where

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

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

43 Go to step 51.

PM NIU
critical (continued)

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

>PM

and press the Enter key.

45 To post the NIU, type

>POST NIU niu_no

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

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

46

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

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

To manually busy the NIU unit, type

>BSY UNIT unit_no

and press the Enter key.

where

PM NIU
critical (continued)

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

47 To test the manual busy NIU unit , type

>TST UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

```
One or more problems are suspected with the following
cards. Please check them in the order listed.
Site Flr RPos Ray_id Shf Description Slot EqPEC
HOST  00  A00 NIU:001 02  IPF        22   EX22BB FRNT
HOST  00  A00 NIU:001 02  CBC        21   EX25BA FRNT
```

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

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

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

50 Go to step 56.

51 To reset the NIU unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

PM NIU
critical (continued)

52 To confirm the command, type

>YES

and press the Enter key.

If the PMRESET command	Do
passed	step 61
failed	step 53

53 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

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

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

55 Go to step 51.

56 To reset the NIU unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

PM NIU
critical (continued)

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

57 To confirm the command, type

>YES

and press the Enter key.

If the PMRESET command	Do
passed	step 61
failed	step 58

58 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

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

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

60 Go to step 56.

61 To post the LIM for the NIU, type

>POST LIM lim_no

and press the Enter key.

where

PM NIU
critical (continued)

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

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

>FBUS

and press the Enter key.

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

63 To manually busy the F-bus tap, type

>BSY FBUS fbus_no tap_no

and press the Enter key.

where

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

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

64 To return the F-bus tap to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

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

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

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

PM NIU
critical (continued)

65 To post the LIM for the NIU, type

>POST LIM lim_no

and press the Enter key.

where

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

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

>FBUS

and press the Enter key.

67 Determine if you worked on both F-bus taps.

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

68 To access the PM level of the MAP display, type

>PM

and press the Enter key.

69 To post the NIU for the F-bus tap, type

>POST NIU niu_no

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

Example of a MAP response:

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

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

PM NIU
critical (continued)

70

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

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

To manually busy the NIU unit, type

>BSY UNIT unit_no

and press the Enter key.

where

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

71 To return the NIU unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

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

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

PM NIU
critical (end)

If the RTS command	Do
failed, and the mate NIU unit is `ManB` and was not worked on	step 10
failed, and the mate NIU unit was worked on	step 73

72 Determine if you used this procedure to work on the mate NIU unit.

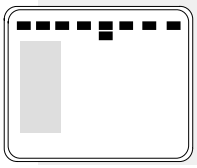
If the mate NIU unit	Do
`is SysB`, and was not worked on	step 20
`is ManB`, and was not worked on	step 10
`is Sysb (NA)`, `ManB (NA)`, or `ISTb (NA)`, and was not worked on	step 21
`is SysB`, `ManB`, `SysB (NA)`, `ManB (NA)`, or `ISTb (NA)`, and was worked on	step 73
`is InSv`	step 74

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

74 The procedure is complete.

PM NIU major

Alarm display



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

Indication

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

Meaning

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

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

Result

The indicated number of NIUs are out of service.

Common procedures

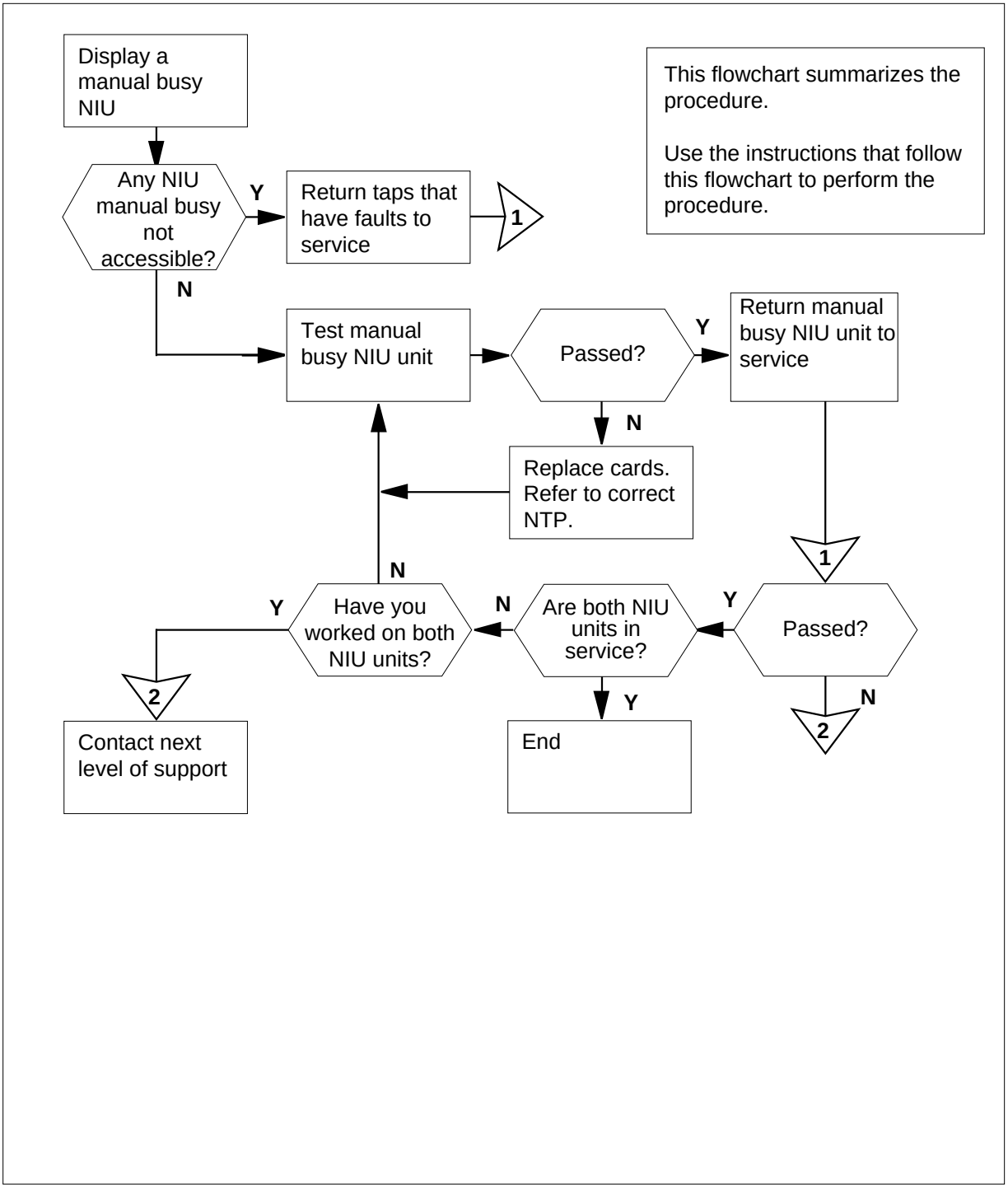
There are no common procedures.

Action

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

PM NIU
major (continued)

Summary of clearing a PM NIU major alarm



PM NIU
major (continued)

Clearing a PM NIU major alarm

At the MAP

1 To access the PM level of the MAP, type

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP display:

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

2 To display all the manual busy NIUs, type

>DISP STATE MANB NIU

and press the Enter key.

Example of a MAP response:

```
ManB NIU: 0
```

3 Choose an NIU to work on.

4 To post the selected NIU, type

>POST NIU niu_no

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

Example of a MAP display:

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

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

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

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

When you have permission, continue this procedure.

PM NIU
major (continued)

6 To test the manual busy NIU unit, type

>TST UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

```
One or more problems are suspected with the following
cards. Please check them in the order listed.
Site Flr RPos Ray_id Shf Description Slot EqPEC
HOST  00  A00 NIU:001 02  IPF        22   EX22BB FRNT
HOST  00  A00 NIU:001 02  CBC        21   EX25BA FRNT
```

If the TST command	Do
passed	step 62
failed, and the system generated a card list	step 7
fails, and the system did not generate a card list	step 9

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

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

9 To reset the NIU unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

10 To confirm the command, type

>YES

PM NIU
major (continued)

and press the Enter key.

If the PMRESET command	Do
passed	step 14
failed	step 11

11 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

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

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

13 Go to step 9.

14 To test the manual busy NIU unit, type

>TST UNIT unit_no

and press the Enter key.

where

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

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

PM NIU
major (continued)

If the TST command	Do
failed, and you replaced all cards on the list that you recorded in step 7	step 63

15 To determine the number of the link interface module (LIM) for the NIU, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

```
PM Type:  NIU   PM No:    2   Status:   ManB
   Unit 0 Status:       {InAct, ManB(NA)}
   Unit 1 Status:       {Act  , ManB}
Site Flr RPos Bay_id Shf Pos Description Slot_Range
HOST   1  A        4   1      NIU   2      18 – 21
Location:   LIM 2 shelf 1
Unit 0 Software Load.Datafilled:NRS34CJ
                                       Actual:NRS34CJ
UNIT 1 Software Load.Datafilled:NRS34CJ Actual:
```

16 Record the number of the LIM for the NIU. An example of a MAP response appears in step 15.

17 To post the LIM for the NIU, type

>POST LIM lim_no

and press the Enter key.

where

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

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

>FBUS

and press the Enter key.

Example of a MAP display:

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

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

PM NIU
major (continued)

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

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

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

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

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

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

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

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

Go to step 1.

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

Go to step 1.

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

Go to step 1.

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

Go to step 1.

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

>TRNSL n

and press the Enter key.

where

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

PM NIU
major (continued)

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

Example of a MAP response:

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

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

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

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

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

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

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

When you have permission, continue this procedure.

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

`>RTS FBUS fbus_no tap_no`

and press the Enter key.

where

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

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

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

PM NIU
major (continued)

If the RTS command	Do
passed, without the response local maintenance not accessible	step 59
failed, and the system generated a card list	step 32
failed, and the system did not generate a card list	step 59

31 Wait one minute for the F-bus tap to be in service.

If, after one minute, the F-bus tap	Do
is in service	step 59
`is I`, S, or does not stabilize	step 37

32 Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.

33 To access the PM level of the MAP display, type

```
>PM
```

and press the Enter key.

34 To post the NIU for the F-bus tap, type

```
>POST  NIU  niu_no
```

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

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

36 Go to step 43.

37 To access the PM level of the MAP display, type

```
>PM
```

and press the Enter key.

38 To post the NIU, type

```
>POST  NIU  niu_no
```

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

PM NIU
major (continued)

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

>TST UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

```
One or more problems are suspected with the following
cards. Please check them in the order listed.
Site Flr RPos Ray_id Shf Description Slot EqPEC
HOST  00  A00 NIU:001 02  IPF        22   EX22BB FRNT
HOST  00  A00 NIU:001 02  CBC        21   EX25BA FRNT
```

If the TST command	Do
passed	step 62
fails, and the system generates a card list	step 40
fails, and the system does not generate a card list	step 43

40 Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.

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

42 Go to step 48.

43 To reset the NIU unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

44 To confirm the command, type

>YES

PM NIU
major (continued)

and press the Enter key.

If the PMRESET command	Do
passed	step 53
failed	step 45

45 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

If the LOADPM command	Do
passed	step 53
fails, and you did not replace all cards on the list that you recorded in step 32	step 46
failed, and you replaced all cards on the list that you recorded in step32	step 57
fails, and the system did not generate a card list in step 30	step 64

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

47 Go to step 43.

48 To reset the NIU unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

49 To confirm the command, type

>YES

PM NIU
major (continued)

and press the Enter key.

If the PMRESET command	Do
passed	step 53
failed	step 50

50 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

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

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

52 Go to step 48.

53 To post the LIM for the NIU, type

>POST LIM lim_no

and press the Enter key.

where

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

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

>FBUS

and press the Enter key.

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

PM NIU
major (continued)

If the state of the F-bus tap in use	Do
is I or S	step 55

55 To manually force the F-bus tap to busy, type

>BSY FBUS fbus_no tap_no FORCE

and press the Enter key.

where

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

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

56 To return the F-bus tap to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

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

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

If the RTS command	Do
passed	step 59
failed, and the same tap on the other F-bus is S and was not worked on	step 37
failed, and the same tap on the other F-bus is M and was not worked on	step 29
failed, and both F-bus taps were worked on	step 64

57 To post the LIM for the NIU, type

>POST LIM lim_no

and press the Enter key.

where

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

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

>FBUS

PM NIU
major (continued)

and press the Enter key.

59 Determine that you worked on both F-bus taps.

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

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

>PM

and press the Enter key.

61 To post the NIU, type

>POST NIU niu_no

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 2)

Example of a MAP display:

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

62 To return the NIU unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

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

If the RTS command	Do
passed	step 63
failed, and the mate NIU unit is ManB and was not worked on	step 5
failed, and the mate NIU unit was worked on	step 64

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

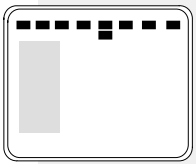
If the mate NIU unit	Do
is ManB, and was not worked on	step 5
is ManB (NA), and was not worked on	step 15
is ManB or ManB (NA), and was worked on	step 64
is InSv	step 65

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

65 The procedure is complete.

PM NIU
minor

Alarm display



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

Indication

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

Meaning

A minimum of one NIU is in-service trouble.

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

Result

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

Common procedures

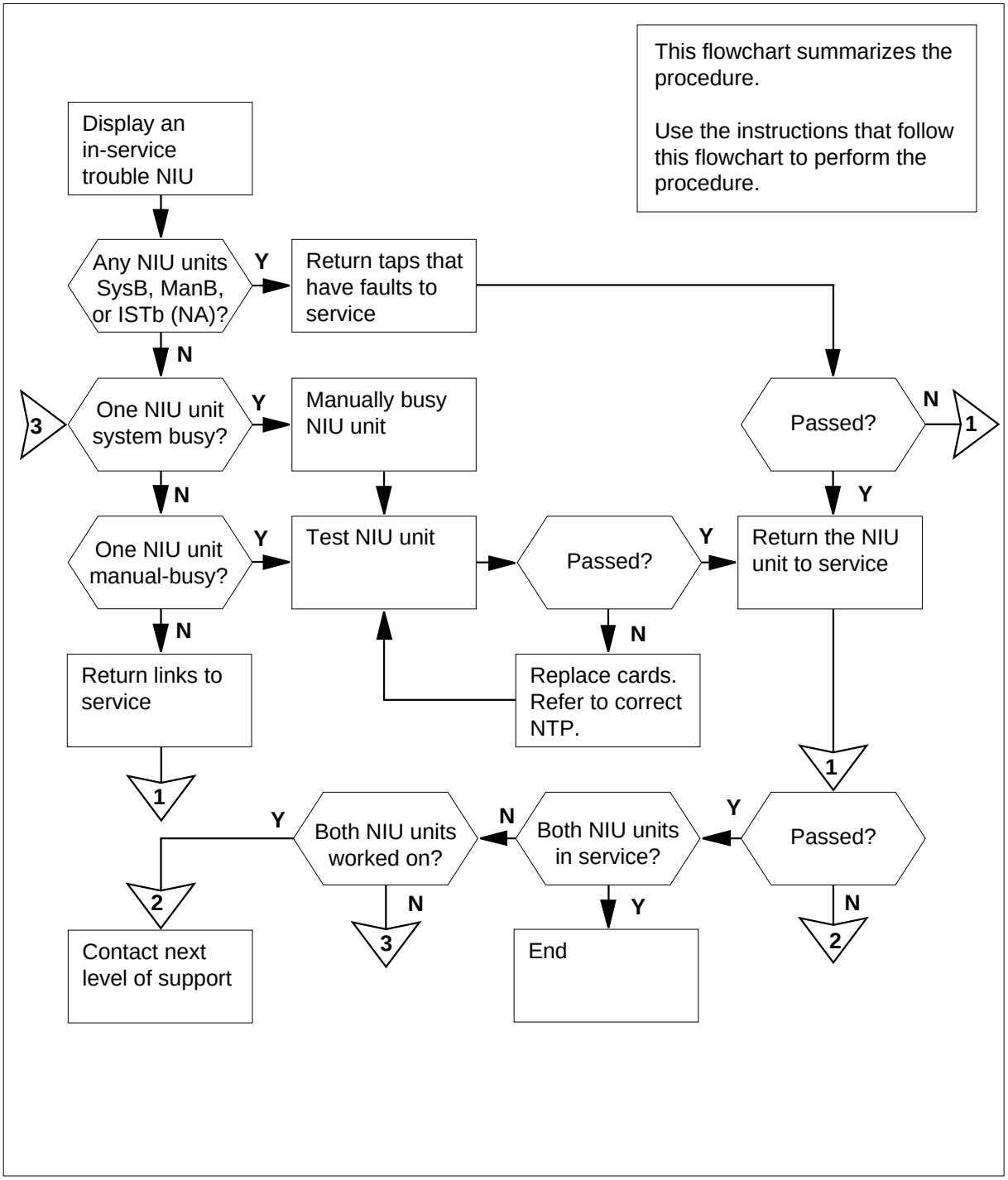
There are no common procedures.

Action

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

PM NIU
minor (continued)

Summary of clearing a PM NIU minor alarm



PM NIU
minor (continued)

Clearing a PM NIU minor alarm

At the MAP terminal

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

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP display:

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

2 To display all in-service trouble NIUs, type

>DISP STATE ISTB NIU

and press the Enter key.

Example of a MAP response:

```
ISTb NIU: 0
```

3 Choose an NIU to work on.

4 To post the selected NIU, type

>POST NIU niu_no

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

Example of a MAP display:

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

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

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

PM NIU
minor (continued)

If the state of one unit is	Do
ManB (NA)	step 61
SysB (NA)	step 61
ISTb (NA)	step 61

5 Consult office records or operating company personnel. Determine why the NIU unit is manually-busy.

When you have permission, continue the procedure.

6 To test the manual-busy NIU unit, type

`>TST UNIT unit_no`

and press the Enter key.

where

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

Example of a MAP response:

```
One or more problems are suspected with the following
cards. Please check them in the order listed.
Site Flr RPos Ray_id Shf Description Slot EqPEC
HOST  00  A00 NIU:001 02  IPF         22   EX22BB FRNT
HOST  00  A00 NIU:001 02  CBC         21   EX25BA FRNT
```

If the TST command	Do
passed	step 117
failed, and the system generated a card list	step 7
failed, and the system did not generate a card list	step 9

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

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

9 To reset the NIU unit, type

`>PMRESET UNIT unit_no`

and press the Enter key.

where

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

Example of a MAP response:

PM NIU
minor (continued)

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

10 To confirm the command, type

>YES

and press the Enter key.

If the PMRESET command	Do
passed	step 117
failed	step 11

11 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

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

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

13 Go to step 9.

14 To manually busy the system busy NIU unit, type

>BSY UNIT unit_no

and press the Enter key.

where

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

Go to step 6.

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

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

>QUERYPM FLT

PM NIU
minor (continued)

and press the Enter key.

Example of a MAP response:

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

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

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

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

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

>DEVICES

and press the Enter key.

Example of a MAP display:

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

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

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

>TRNSL NETLK

and press the Enter key.

Example of a MAP response for a junctored network:

PM NIU
minor (continued)

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

Example of a MAP response for an enhanced network:

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

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

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

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

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

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

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

`>NET;LINKS  pair_no`

and press the Enter key.

where

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

Example of a MAP display:

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

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

23 To confirm that the network link displays a busy state for the NIU unit, type

`>TRNSL link_no`

and press the Enter key.

where

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

Example of a MAP display:

```
Net 3 Link 39 = NIU 1 Port 3
```

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

24 Determine the state of each link for the NIU.

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

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

26 To manually busy the link that is not manually-busy for the NIU unit, type

`>BSY plane_no link_no`

and press the Enter key.

where

PM NIU
minor (continued)

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

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

If you	Do
busied all links	step 28
did not busy all links	step 27

27 Repeat step 26 for each link that associates with the NIU unit that is not manual-busy.

28 Choose a manual-busy link to work on.

29 To test the manual-busy link, type

```
>TST  plane_no  link_no
```

and press the Enter key.

where

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

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

Example of a MAP response:

```
One or more problems are suspected with the following
cards. Please check them in the order listed.
Site Flr RPos Ray_id Shf Description Slot EqPEC
HOST  00  A00 NIU:001 02  IPF         22   EX22BB FRNT
HOST  00  A00 NIU:001 02  CBC         21   EX25BA FRNT
```

If the TST command	Do
passed	step 50
failed, and the system generated a card list	step 44
fails, and the system did not generate a card list	step 50

30 Record the ENET network plane, shelf, card, and link numbers for the NIU unit.

31 To access the CARD level of the MAP display, type

```
>SHELF  shelf_no;CARD  card_no
```

and press the Enter key.

where

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

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

Example of a MAP display:

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

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

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

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

>DELOAD plane_no QUERY

and press the Enter key.

where

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

step 30

Example of a MAP response:

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

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

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

>DELOAD plane_no QUERY

and press the Enter key.

where

PM NIU
minor (continued)

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

Example of a MAP response:

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

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

35 To clear the deload condition on the card of the corresponding plane, type

>DELOAD plane_no CLEAR

and press the Enter key.

where

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

Example of a MAP response:

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

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

>DELOAD plane_no SET

and press the Enter key.

where

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

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

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

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

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

40 To manually busy a link, type

>BSY plane_no LINK link_no

and press the Enter key.

where

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

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

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

42 Choose a manual-busy link to work on.

43 To test the manual-busy link, type

>TST plane_no LINK link_no

and press the Enter key.

where

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

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

Example of a MAP response:

```
One or more problems are suspected with the following
cards. Please check them in the order listed.
Site Flr RPos Ray_id Shf Description Slot EqPEC
HOST  00  A00 NIU:001 02  IPF         22   EX22BB FRNT
HOST  00  A00 NIU:001 02  CBC         21   EX25BA FRNT
```

If the TST command	Do
passed	step 54
failed, and the system generated a card list	step 44
failed, and the system did not generate a card list	step 54

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

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

45 To manually busy the NIU unit, type

>BSY UNIT unit_no

and press the Enter key.

where

PM NIU
minor (continued)

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

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

Example of a MAP response:

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

46 To confirm the switch of activity, type

>YES

and press the Enter key.

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

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

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

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

>TST plane_no link_no

and press the Enter key.

where

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

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

If the TST command	Do
passed	step 50
failed	step 118

50 To return the link to service, type

>RTS plane_no link_no

and press the Enter key.

where

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

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

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

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

52 Go to step 50.

53 To test one of the links for the NIU, type

```
>TST  plane_no  LINK  link_no
```

and press the Enter key.

where

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

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

If the TST command	Do
passed	step 54
failed	step 118

54 To return the link to service, type

```
>RTS  plane_no  LINK  link_no
```

and press the Enter key.

PM NIU
minor (continued)

where

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

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

Example of a MAP response:

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

If the RTS command	Do
passed, and all links for the NIU unit are in service	step 57
passed, and all links for the NIU unit are not in service	step 53
fails, and you did not replace all cards on the list that you recorded in step 44	step 55
failed, and you replaced all cards on the list that you recorded in step 44	step 118
fails, and system did not generate a list in step 43	step 118
failed, and another link is M and has not been worked on	step 42
failed, and all links have been worked on	step 118

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

56 Go to step 54.

57 To clear the deload condition on the crosspoint card that relates to the link for the NIU unit, type

`>DELOAD plane_no CLEAR`

and press the Enter key.

where

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

Example of a MAP response:

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

58 To set the NIU unit again, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

59 To confirm the command, type

>YES

and press the Enter key.

If the PMRESET command	Do
passed	step 117
failed	step 60

60 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

If the LOADPM command	Do
passed	step 117
failed	step 118

61 To determine the number of the link interface module (LIM) for the NIU, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

PM NIU
minor (continued)

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

62 Record the number of the associated LIM.

63 To post the LIM that associates with the NIU, type

>POST LIM lim_no

and press the Enter key.

where

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

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

>FBUS

and press the Enter key.

Example of a MAP display:

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

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

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

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

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

PM NIU
minor (continued)

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

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

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

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

Go to step 1.

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

Go to step 1.

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

Go to step 1.

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

Go to step 1.

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

```
>TRNSL   n
```

and press the Enter key.

where

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

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

Example of a MAP response:

PM NIU
minor (continued)

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

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

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

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

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

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

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

When you have permission, continue the procedure.

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

`>RTS FBUS fbus_no tap_no`

and press the Enter key.

where

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

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

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

PM NIU
minor (continued)

If the RTS command	Do
failed, and the system did not generate a card list	step 112

77 Wait 1 min for the F-bus tap to be in service.

If the state of the F-bus tap	Do
is in service	step 112
is I, S, or does not stabilize	step 85

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

79 To access the PM level of the MAP display, type

```
>PM
```

and press the Enter key.

80 To post the NIU, type

```
>POST  NIU  niu_no
```

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

If the state of the NIU unit	Do
is ManB	step 83
is Tb or SysB	step 81

81

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

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

```
>BSY  UNIT  unit_no  FORCE
```

and press the Enter key.

PM NIU
minor (continued)

where

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

Example of a MAP response:

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

82 To confirm the command, type

>YES

and press the Enter key.

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

84 Determine the card that you changed in step 83.

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

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

>PM

and press the Enter key.

86 To post the NIU, type

>POST NIU niu_no

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

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

87

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

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

>BSY UNIT unit_no FORCE

and press the Enter key.

where

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

Example of a MAP response:

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

88 To confirm the command, type

>YES

and press the Enter key.

89 To test the manual-busy NIU unit, type

>TST UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

```
One or more problems are suspected with the following
cards. Please check them in the order listed.
Site Flr RPos Ray_id Shf Description Slot EqPEC
HOST  00  A00 NIU:001 02  IPF        22   EX22BB FRNT
HOST  00  A00 NIU:001 02  CBC        21   EX25BA FRNT
```

If the TST command	Do
passed	step 117

PM NIU
minor (continued)

If the TST command	Do
failed, and the system generated a card list	step 92
failed, and the system did not generate a card list	step 90

90 To set the NIU unit again, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

91 To confirm the command, type

>YES

and press the Enter key.

If the PMRESET command	Do
passed	step 117
failed	step 118

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

93 Replace the first card on the list that you recorded in step 92. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

94 Determine the card that you changed in step 93.

If the card that you changed	Do
is an NTEX22	step 102
is other than listed here	step 100

95 To set the NIU unit again, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

96 To confirm the command, type

>YES

and press the Enter key.

If the PMRESET command	Do
passed	step 102
failed	step 97

97 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

If the LOADPM command	Do
passed	step 105
failed, and you have not replaced allcards on the list that you recorded in step 78	step 98
failed, and you replaced all cards on the list that you recorded in step 78	step 110

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

99 Go to step 95.

100 To set the NIU unit again, type

>PMRESET UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

PM NIU
minor (continued)

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

101 To confirm the command, type

>YES

and press the Enter key.

If the PMRESET command	Do
passed	step 105
failed	step 102

102 To load the NIU unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

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

If the LOADPM command	Do
passed	step 105
failed, and you have not replaced all cards on the list that you recorded in step 92	step 103
failed, and you replaced all cards on the list that you recorded in step 92	step 110

103 Replace the next card on the list that you recorded in step 92. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

104 Go to step 100.

105 To post the LIM for the NIU, type

>POST LIM lim_no

and press the Enter key.

where

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

106 To access the F-bus level of the MAP, type

>FBUS

and press the Enter key.

If the state of F-bus tap	Do
is M	step 109
is I	step 107
is S	step 108
is in service	step 113

107 To manually busy the F-bus tap, type

>BSY FBUS fbus_no tap_no FORCE

and press the Enter key.

where

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

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

Go to step 109.

108 To force the F-bus tap to busy, type

>BSY FBUS fbus_no tap_no FORCE

and press the Enter key.

where

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

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

109 To return the F-bus tap to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

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

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

If the RTS command	Do
passed	step 112
failed, and the same tap on the other F-bus is S and you have not worked on S	step 85

PM NIU
minor (continued)

If the RTS command	Do
failed, and the same tap on the other F-bus is M and you have not worked on M	step 75
failed, and you worked on both F-bus taps	step 118

110 To post the LIM for the NIU, type

>POST LIM lim_no

and press the Enter key.

where

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

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

>FBUS

and press the Enter key.

112 Determine if you worked on both F-bus taps.

If the same tap on the other F-bus	Do
is S, and you have not worked on S	step 85
is M, and you have not worked on M	step 75
is S or M, and you worked on S or M	step 118
is in service	step 113

113 To access the PM level of the MAP display, type

>PM

and press the Enter key.

114 To post the NIU, type

>POST NIU niu_no

and press the Enter key.

where

niu_no
is the number of the NIU (0 to 29)

Example of a MAP display:

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

If the state of the NIU unit	Do
is ManB	step 117
is ISTb or SysB	step 115

115

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

To manually busy the NIU for the F-bus, type

>BSY UNIT unit_no

and press the Enter key.

where

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

Example of a MAP response:

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

116 To confirm the command, type

>YES

and press the Enter key.

117 To return the NIU unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

PM NIU
minor (end)

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

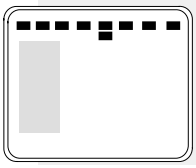
If the RTS command	Do
passed and the NIU unit is InSv	step 119
passed, but the NIU unit remains ISTb	step 118
failed, and the mate NIU unit is ISTb and you have not worked on the mate NIU unit	step 16

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

119 The procedure is complete.

PM PMLOAD minor

Alarm display



CM	MS	IOD	Net	**PM**	CCS	Lns	Trks	Ext	APPL
.	.	.	.	**PMLOAD**	.	.	.	.	.

Indication

At the MTC level of the MAP display, PMLOAD under the PM header indicates a wrong entries in table PMLOADS.

Meaning

The system generates a minor alarm when a mismatch occurs between the entered peripheral module loads in table PMLOADS and the software loads. The current software loads are on disk. In table PMLOADS, the system cannot find the named loadfile on the assigned disk. Another possibility is that the device name assigned to the loadfile name in table PMLOADS does not have the load.

Result

There are no results.

Common procedures

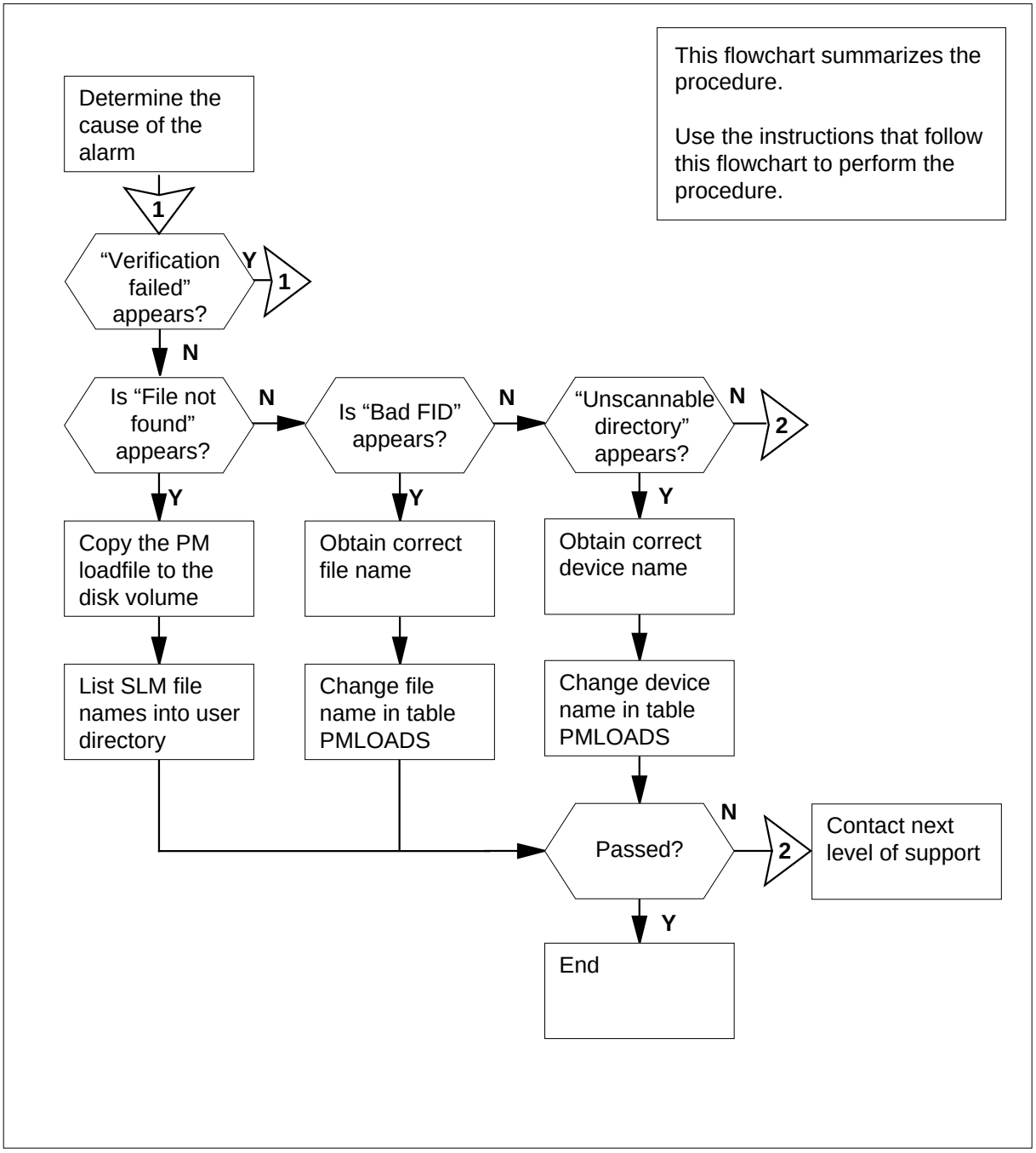
There are no common procedures.

Action

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

PM PMLOAD
minor (continued)

Summary of clearing a PM PMLOAD minor alarm



Clearing a PM PMLOAD minor alarm

At the MAP display

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

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP response:

```
         SysB    ManB    OffL    CBsy    ISTb    InSv
PM         5       0       0       1       3       5
```

2 To determine the cause of the alarm, type

>PMLOADER QUERY ALARM

and press the Enter key.

Example of a MAP response:

```
A MINOR alarm is being raised by table PMLOADS

LOAD
Filename            Reason
-----------------------------------------
ACC36CJ
ACC36CJ             Unscannable directory

ARC36CJ
ARC36CJ             Bad FID or File not found

CFI34CR
CFI34CR             Unscannable directory

CJL35MS
CJL35MS             Verification failed
```

3 Record the loadfile name and reason for each PMLOAD alarm.

4 Determine from office records the correct loadfile name and directory.

5 Choose a loadfile name on which to work.

6 Determine the PMLOAD alarm reason.

If the alarm reason	Do
is Verification failed	step 7

PM PMLOAD
minor (continued)

If the alarm reason	Do
is File not found	step 9
is Bad FID	step 18
is Unscannable directory	step 38

7 A file attempted to load when you ran the PMLOADER audit. Wait 5 min before you proceed.

8 Go to step 2.

9 Locate the tape that contains the PM load files.

At the IOE frame

10 Mount the tape on a magnetic tape drive.

At the MAP display

11 To download the tape, type

`>MOUNT tape_no`

and press the Enter key.

where

tape_no
is the number of the tape drive that contains the PM load files

12 To list the contents of the tape in your user directory, type

`>LIST T tape_no`

and press the Enter key.

where

tape_no
is the number of the tape drive that contains the PM load files

13 To copy the PM loadfile to the disk volume, type

`>COPY <pm_loadfile_name> <SLM_disk_volume_name>`

and press the Enter key.

where

pm_loadfile_name
is the name of the load file

SLM_disk_volume_name
is the name of the disk volume

14 To access the disk utility level of the MAP display, type

`>DISKUT`

and press the Enter key.

15 To list the SLM disk volume names, type

>LV CM

and press the Enter key.

16 To list the SLM file names into your user directory, type

>LF volume_name

and press the Enter key.

where

volume_name
is the name of the volume that contains the PM load files

17 To exit the disk utility, type

>QUIT

and press the Enter key.

If the PM header	Do
displays PMLOAD	step 49
does not display PMLOAD	step 51

18 To access table PMLOADS, type

>TABLE PMLOADS

and press the Enter key.

19 To position on the loadfile, type

>POS file_name

and press the Enter key.

where

file_name
is the loadfile name from step 5

Example input:

>POS ARC36CJ

Example of a MAP response:

```
ARC36CJ
ARC36CJ            S00DVOL1
ARC36CJ            S00DVOL1          Y
```

20 Record the device name that contains the loadfile.

21 To exit table PMLOADS, type

>QUIT

and press the Enter key.

PM PMLOAD
minor (continued)

22 To access the disk utility, type

>DISKUT

and press the Enter key.

Note: The command DISKUT applies to a SuperNode front end. For an NT40 front end, the command is DSKUT.

23 To name the loadfile again, type

>RNF file_name new_file_name

and press the Enter key.

where

file_name
is the loadfile name from step 5

new_file_name
is the new loadfile name

Note: The loadfile name must begin with a letter.

Example input:

>RNF ARC36CJ ARC37CJ

24 To exit the disk utility, type

>QUIT

and press the Enter key.

25 To access table PMLOADS, type

>TABLE PMLOADS

and press the Enter key.

26 To add the new loadfile name to table PMLOADS, type

>ADD new_file_name

and press the Enter key.

where

new_file_name
is the loadfile name from step 23

Example input:

>ADD ARC37CJ

Example of a MAP prompt:
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT

27 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP prompt:
ACTFILE:

28 To enter the name of the loadfile, type

`>actfile`

and press the Enter key.

where

actfile
is the new name of the loadfile from step 23

Example input:

`>ARC37CJ`

Example of a MAP prompt:
ACTVOL:

29 To enter the name of the storage device that contains the loadfile, type

`>actvol`

and press the Enter key.

where

actvol
is the name of the storage device from step 20

Example input:

`>S00DVOL1`

Example of a MAP prompt:
BKPFILE:

30 To enter the name of the backup loadfile, type

`>bkpfile`

and press the Enter key.

where

bkpfile
is the name of the backup loadfile and must be identical to the name entered in step 26

Example input:

`>ARC37CJ`

Example of a MAP prompt:
BKPVOL:

31 To enter the name of the storage device that contains the backup loadfile, type

`>bkpvol`

and press the Enter key.

where

bkpvol
is the name of the storage device from step 20

PM PMLOAD
minor (continued)

Example input:

>S00DVOL1

Example of a MAP prompt:
UPDACT:

32 To enter the update confirmation for the automatic loadfile name update confirmation, type

>updact

and press the Enter key.

where

updact
is if the system must update the loadfile name automatically (Y or N)

Example input:

>Y

Example of a MAP response:

```
TUPLE TO BE ADDED:
           ARC37CJ
           ARC37CJ            S00DVOL1
           ARC37CJ            S00DVOL1         Y

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

33 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:
TUPLE ADDED

34 To position on the original loadfile name, type

>POS file_name

and press the Enter key.

where

file_name
is the original loadfile name from step 5

35 To delete the old loadfile name, type

>DEL

and press the Enter key.

Example of a MAP prompt:
ENTER Y TO CONFIRM, N TO REJECT, OR E TO EDIT

36 To confirm the command, type

>Y

and press the Enter key.

37 To exit table PMLOADS, type

>QUIT

and press the Enter key.

If the PM header	Do
displays PMLOAD	step 49
does not display PMLOAD	step 51

38 To access the disk utility, type

>DISKUT

and press the Enter key.

Note: The command DISKUT applies to a SuperNode front end. For an NT40 front end, the command is DSKUT.

39 To confirm that the device contains the loadfile, type

>LISTFL dev_name

and press the Enter key.

where

dev_name
is the name of the device from step 5

Example input:

>LISTFL S00DVOL1

Note: The command LISTFL file_name applies to a SuperNode front end. For an NT40 front end, the command is LISTVOL vol_name.

Example of a MAP response:

```
File information for volume S00DVOL1:
{NOTE:  1 BLOCK = 512 BYTES }
------------------------------------------------------------
  LAST FILE O R I O       FILE     NUM OF   MAX    FILE NAME
MODIFY CODE R E T P       SIZE    RECORDS   REC
  DATE      G C O E         IN         IN   LEN
              C N     BLOCKS       FILE
------------------------------------------------------------
920101    0 I F           9754       4877  1020 ORIG001MS
920101    0 I F         189350      94675  1020 ORIG001CM
931012    0 I F Y         9754       4877  1020 TEMP002MS
931012    0 I F Y       168810      84405  1020 TEMP002CM
930910    0 O F           4156       2078  1024 ARC36CJ
930910    0 O F           5288       2644  1024 CFI34CR
930910    0 O F           5304       2935  1024 ACC36CJ
```

PM PMLOAD
minor (continued)

40 To exit the disk utility, type

>QUIT

and press the Enter key.

41 Determine if the device specified for the loadfile matches the office records.

If the device name	Do
does not match the office records	step 42
matches the office records	step 50

42 To access table PMLOADS, type

>TABLE PMLOADS

and press the Enter key.

43 To position on the loadfile name, type

>POS file_name

and press the Enter key.

where

file_name
is the loadfile name from step 5

Example of a MAP response:

```
CFI34CR
CFI34CR          S00DVOL2
CFI34CR          S00DVOL2          Y
```

44 To change the device indicated for the loadfile, type

>CHA ACTVOL

and press the Enter key.

Example of a MAP prompt:
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT

45 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP prompt:
ACTVOL: S00DVOL2

46 To enter the name of the device that contains the load, type

>vol_name

and press the Enter key.

where

vol_name
is the name of the storage device

Example input:

>S00DVOL1

Example of a MAP response:

```
TUPLE TO BE CHANGED:
                CFI34CR
                CFI34CR          S00DVOL1
                CFI34CR          S00DVOL2         Y

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
```

47 To confirm the command, type

>Y

and press the Enter key.

48 To exit table PMLOADS, type

>QUIT

and press the Enter key.

If the PM header	Do
shows PMLOAD	step 49
does not show PMLOAD	step 51

49 To initiate a system audit to locate all loadnames and the associated devices of the loadnames, type

>PMLOADER AUDIT ALL

and press the Enter key.

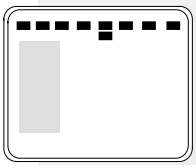
If the PM header	Do
show PMLOAD	step 50
does not show PMLOAD	step 51

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

51 The procedure is complete.

PM STC
major or minor

Alarm display



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

Indication

At the MTC level of the MAP display, STC (preceded by a number) appears under the PM header of the alarm banner. The STC indicates a major or minor alarm for the signaling terminal controller (STC).

Meaning

For a major alarm, an M appears under the alarm indicator. The system generates a major alarm when an STC is system busy or C-side busy.

For a minor alarm, information does not appear under the alarm indicator. The system generates a minor alarm when an STC is manually busy or in service trouble.

The number that precedes STC under the PM header in the alarm banner indicates the number of affected STCs.

Result

Common channel signaling (CCS) stops when an STC is system busy, C-side busy, or manually busy. An STC that is in service trouble continues to provide CCS service.

Common procedures

This procedure refers to *Loading a PM*.

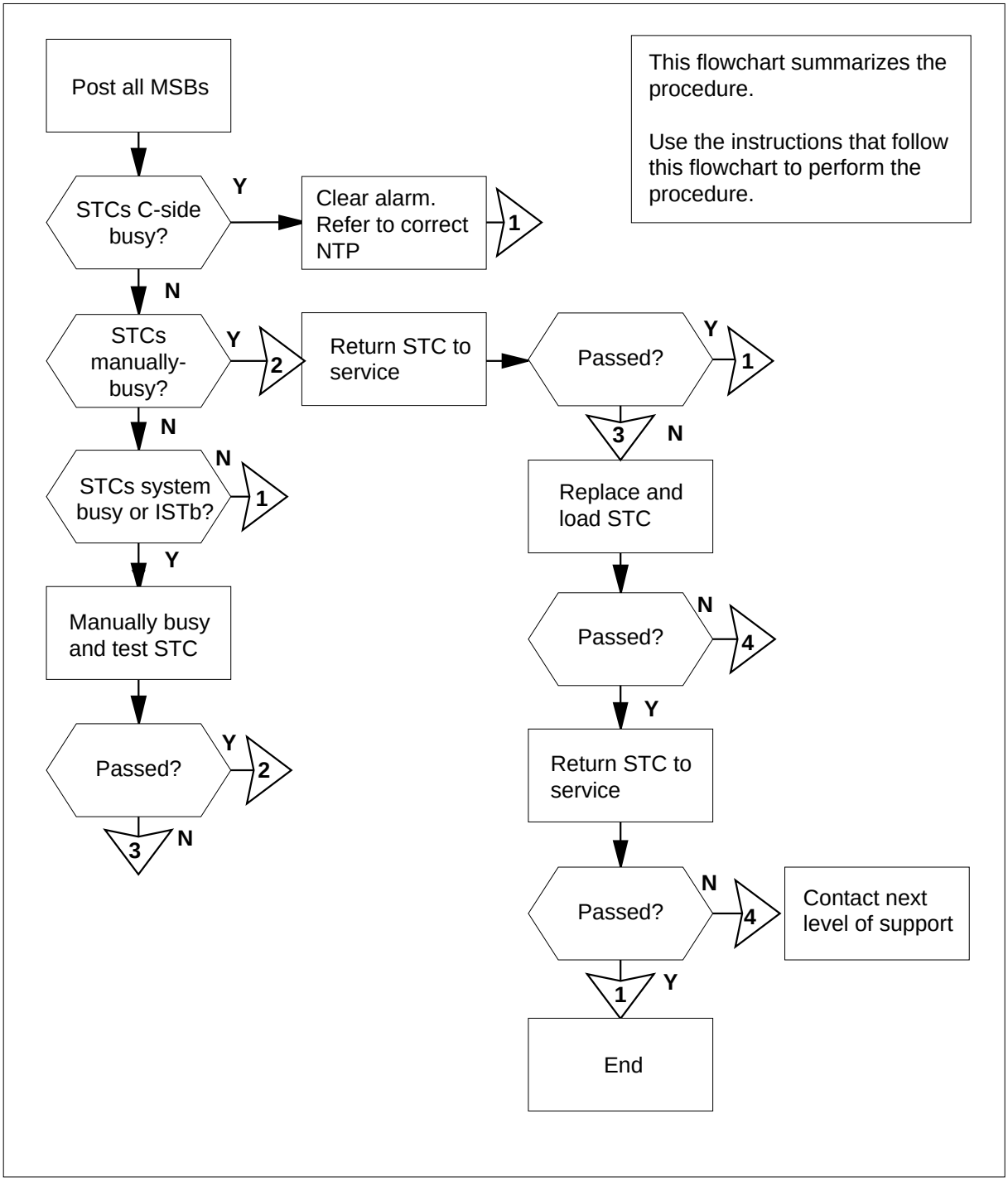
Do not go to the common procedure unless the step-action procedure directs you to go.

Action

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

PM STC
major or minor (continued)

Summary of clearing a PM STC major or minor alarm



PM STC
major or minor (continued)

Clearing a PM STC major or minor alarm

At the MAP display

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

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP response:

```
     SysB     ManB     OffL  CBsy      ISTb    InSv
PM        1        3        5        7        6      12
```

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

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

3 Perform the correct procedure in this document.

4 Determine if an audible alarm rings.

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

5 To silence the alarm, type

>SIL

and press the Enter key.

6 To post all the MSBs, type

>POST MSBx ALL

and press the Enter key.

where

x
is the type of MSB (6 or 7)

Example of a MAP response:

```
MSB7    0 ISTb  Links_OOS: CSide  0 , PSide  0
Unit0:   Act   ISTb
Unit1:   Inact ISTb
```

PM STC
major or minor (continued)

7 Determine which MSB associates with the STCs that have faults.

8 To access the STC level of the MAP display, type

>STC

and press the Enter key.

9 From the MAP display, determine the status of the STCs.

If the status	Do
is InSv	step 10
is SysB	step 13
is CBsy	step 33
is ManB	step 34
is ISTb	step 53

10 To exit the STC level of the MAP display, type

>QUIT

and press the Enter key.

11 To display the next MSB in the posted set, type

>NEXT

and press the Enter key.

12 Go to step 8 to determine the status of the STCs.

13 To post all system busy STCs, type

>POST SYSB

and press the Enter key.

14 Work on the first STC in the posted set.

15 To manually busy the STC, type

>BSY

and press the Enter key.

16 To test the STC, type

>TST

and press the Enter key.

If the TST command	Do
passed	step 17
failed, and the system generated a card list	step18

PM STC
major or minor (continued)

If the TST command	Do
failed, and the system did not generate a card list	step 20

17 To return the STC to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed, and all STCs are `InSv`	step 74
passed, the STC is `InSv`, but other `SysB` STCs are present	step 31
failed, and the system generated a card list	step 18
failed, and the system did not generate a card list	step 20

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

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

20 To load the STC, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passes	step 28
fails, and MAP response includes: `STC Load stc_loadname not in MSB7`	step 21
fails	step 24

21 To exit the STC level of the MAP display, type

>QUIT

and press the Enter key.

22 From office records, determine the correct STC loadname.

23 To add the STC load to each of the MSB units, type

>STCLOAD UNIT unit_no A stc_loadname

and press the Enter key.

where

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

stc_loadname
is the name of the STC load that you determined in step 22

If the STCLOAD command	Do
passed	step 25
failed	step 24

24 Perform the procedure *Loading a PM*. Complete the procedure and return to this point.

25 To access the STC level of the MAP display, type

>STC

and press the Enter key.

26 To post the original STC that you worked on, type

>POST STC stc_no

and press the Enter key.

where

stc_no
is the number of the STC

27 To load the STC, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passes	step 28
fails	step 73

28 To return the STC to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passes, and all STCs are InSv	step 74
passes, but other SysB STCs are present	step 31

PM STC
major or minor (continued)

If the RTS command	Do
fails, and you did not replace all cards in the list that you recorded in step 18	step 29
fails, and you replaced all cards in the list that you recorded in step 18	step 73

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

30 Go to step 20.

31 To display the next system busy STC in the posted set, type

>NEXT

and press the Enter key.

32 Repeat steps 15 and 16 for each system busy STC. Complete these steps and go to step 33.

33 The fault exists in the MSB that contains the STCs.

Go to the procedure *Clearing a PM MSB6, MSB7 critical, major, or minor alarm.*

34 To post all manually-busy STCs, type

>POST MANB

and press the Enter key.

35 Work on the first STC in the posted set.

36 Determine from office records or operating company personnel why the STC is manually busy. When you have permission, continue this procedure.

37 To return the STC to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passes, and all STCs are `InSv`	step 74
passes, the STC is InSv, but other ManB STCs are present	step 51
fails, and the system generated a card list	step 38
fails, and the system did not generate a card list	step 40

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

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

PM STC
major or minor (continued)

40 To load the STC, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passes	step 48
fails, and MAP response includes: `STC Load stc_loadname not in MSB7`	step 41
fails	step 44

41 To exit the STC level of the MAP display, type

>QUIT

and press the Enter key.

42 Determine from office records the correct STC loadname.

43 To add the STC load to each of the MSB units, type

>STCLOAD UNIT unit_no A stc_loadname

and press the Enter key.

where

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

stc_loadname
is the name of the STC load that you determined in step 22

If the STCLOAD command	Do
passes	step 45
fails	step 44

44 Perform the procedure "Loading a PM". Complete the procedure and return to this point.

45 To access the STC level of the MAP display, type

>STC

and press the Enter key.

46 To post the original STC that you worked on, type

>POST STC stc_no

and press the Enter key.

where

stc_no
is the number of the STC

PM STC
major or minor (continued)

47 To load the STC, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passes	step 48
fails	step 73

48 To return the STC to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passes, and all STCs are `InSv`	step 74
passes, the STC is `InSv`, but other `ManB` STCs are present	step 52
fails, and you did not replace all cards on the list that you recorded in step 38	step 49
fails, and you replaced all cards in the list that you recorded in step 38	step 73

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

50 Go to step 47.

51 To display the next manually-busy STC in the posted set, type

>NEXT

and press the Enter key.

52 Repeat steps 36 and 37 for each manually-busy STC. Complete these steps and go to step 53.

53 To post all the in-service trouble STCs, type

>POST ISTB

and press the Enter key.

54 Work on the first STC in the posted set.

55 To busy the STC, type

>BSY

and press the Enter key.

PM STC
major or minor (continued)

56 To load the STC, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passes	step 64
fails, and MAP response includes: `STC Load stc_loadname not in MSB7`	step 57
fails	step 60

57 To exit the STC level of the MAP display, type

>QUIT

and press the Enter key.

58 Determine from office records the correct STC loadname.

59 To add the STC load to each of the MSB units, type

>STCLOAD UNIT unit_no A stc_loadname

and press the Enter key.

where

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

stc_loadname
is the name of the STC load that you determined in step 22

If the STCLOAD command	Do
passes	step 61
fails	step 60

60 Perform the procedure "Loading a PM". Complete the procedure and return to this point.

61 To access the STC level of the MAP display, type

>STC

and press the Enter key.

62 To post the first STC that you worked on, type

>POST STC stc_no

and press the Enter key.

where

stc_no
is the number of the STC

PM STC
major or minor (continued)

63 To load the STC, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passes	step 64
fails	step 73

64 To return the STC to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passes, and all STCs are `InSv`	step 74
passes, the STC is `InSv`, but other `ISTb` STCs are present	step 71
fails, and the system generated a card list	step 65
fails, and the system did not generate a card list	step 73

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

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

67 To load the STC, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passes	step 68
fails	step 73

68 To return the STC to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passes, and all STCs are `InSv`	step 74

PM STC
major or minor (end)

If the RTS command	Do
passes, the STC is `InSv`, but other `ISTb` STCs are present	step 71
fails, and you did not replace all cards in the list that you recorded in step 65	step 69
fails, and you replaced all cards in the list that you recorded in step 65	step 73

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

70 Go to step 67.

71 To display the next manually-busy STC in the posted set, type

```
>NEXT
```

and press the Enter key.

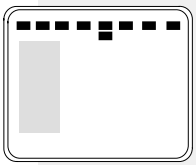
72 Repeat steps 55 and 56 for each manually-busy STC. Complete these steps and return to this point.

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

74 The procedure is complete.

PM SysB major

Alarm display



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

Indication

At the MTC level of the MAP display, SysB (preceded by a number and followed by an M) appears under the PM header of the alarm banner. The SysB indicates a system busy (SysB) major alarm. The number that precedes the SysB indicates the number of affected PMs. The previous figure shows an alarm banner with a SysB major alarm.

This alarm applies only to the following PMs:

- maintenance trunk module (MTM)
- service trunk module (STM)
- trunk module 8 (TM8)

Meaning

The indicated number of PMs are system busy.

Result

Service stops when a PM is system busy.

Common procedures

This procedure refers to *Monitoring system maintenance*.

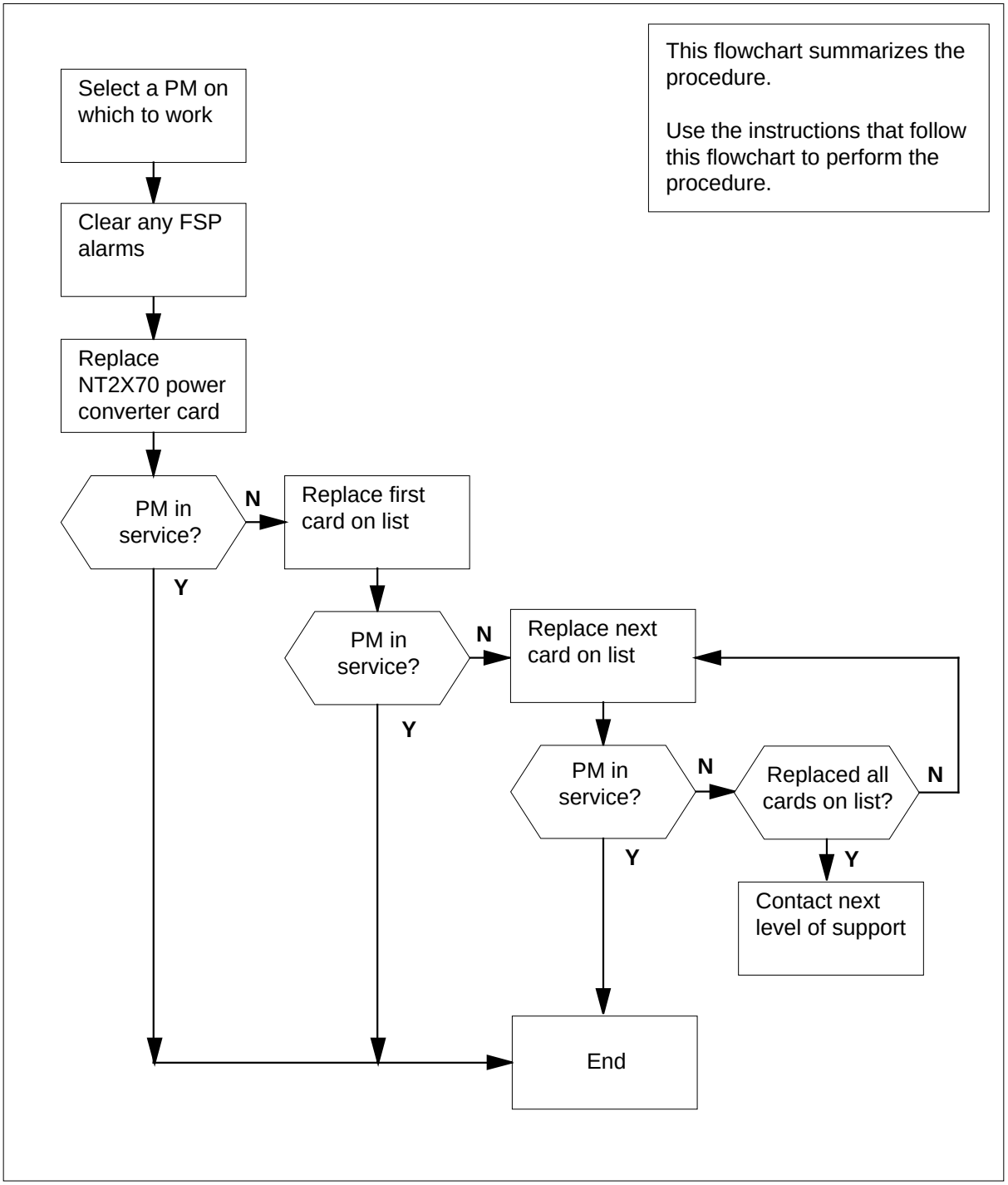
Do not go to the common procedure unless the step-action procedure directs you to go.

Action

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

PM SysB
major (continued)

Summary of clearing a PM SysB major alarm



PM SysB
major (continued)

Design of a TM shelf

		21
NT2X09	Power converter card	20
	Trunk interface circuit	19
	Trunk interface circuit	18
	Trunk interface circuit	17
	Trunk interface circuit	16
	Trunk interface circuit	15
	Trunk interface circuit	14
	Trunk interface circuit	13
	Trunk interface circuit	12
	Trunk interface circuit	11
	Trunk interface circuit	10
	Trunk interface circuit	09
	Trunk interface circuit	08
	Trunk interface circuit	07
	Trunk interface circuit	06
	Trunk interface circuit	05
NT2X59	Codec and tone card	04
NT2X53	Control card	03
NT0X70	Processor card	02
NT2X45	Network interface card	01

Design of an MTM shelf

NT2X06	Power converter card	21
	–OR–	
NT2X70	Power converter card	20
NT0X50	Filler card	19
		18
NT2X09	Power converter card	17
	Trunk interface circuit	16
	Trunk interface circuit	15
	Trunk interface circuit	14
	Trunk interface circuit	13
	Trunk interface circuit	12
	Trunk interface circuit	11
	Trunk interface circuit	10
	Trunk interface circuit	09
	Trunk interface circuit	08
	Trunk interface circuit	07
	Trunk interface circuit	06
	Trunk interface circuit	05
NT2X59	Codec and tone card	04
NT2X53	Control card	03
NT0X70	Processor card	02
NT2X45	Network interface card	01

Clearing a PM SysB major alarm

At the MAP display

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

```
>MAPCI;MTC;PM
```

and press the Enter key.

Example of a MAP response:

PM SysB
major (continued)

```
     SysB     ManB     OffL     CBsy     ISTb     InSv
PM     1        3        5        7        6       12
```

If	Do
an audible alarm rings	step 2
the M indicator at the alarm banner flashes	step 2
other than listed here	step 3

2 To silence the alarm, type

>SIL

and press the Enter key.

3 To display all SysB PMs, type

>DISP STATE SYSB

and press the Enter key.

Example of a MAP response:
SysB TM8 : 0

Note: If multiple types of PMs are SysB, work on MTMs first. If multiple PMs of the same type are SysB, select one on which to work.

Record the number of the PM.

4 Check the EXT header of the alarm banner.

If an FSP alarm	Do
is present	step 5
is not present	step 23

5 To locate the FSP alarm, type

>EXT; LIST FSP

and press the Enter key.

Example of a MAP response:
FSPAISD

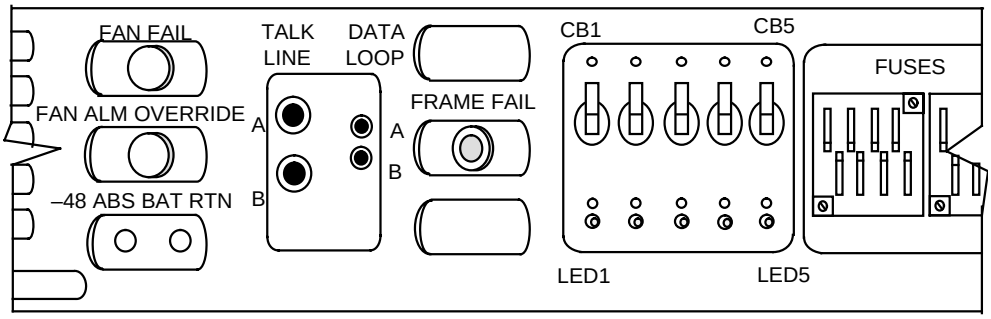
In this example, the alarm is an FSP alarm on Aisle D.

At the equipment aisle

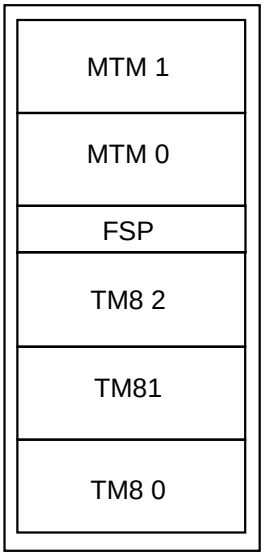
6 Go to the aisle that you identified in step 5. The end aisle alarm is lit.

At the equipment frame

7 Identify the frame with the FSP alarm. Examine the frame fail lamp on the frame supervisory panel (FSP) of each frame. The frame with the FSP alarm has a lit frame fail lamp. The following figure shows an FSP with a lit fail lamp.

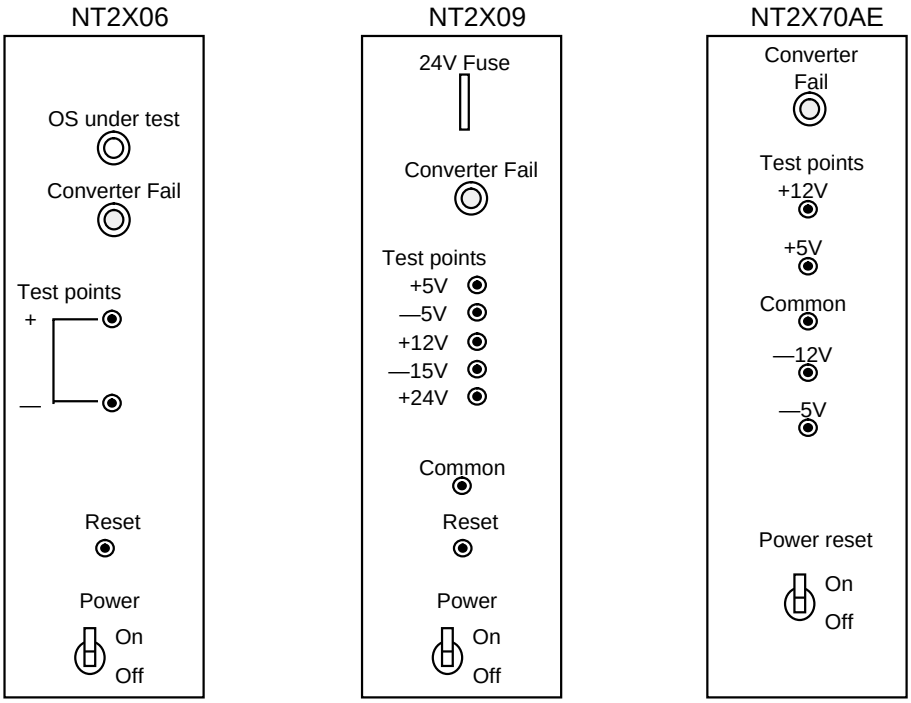


8 Identify the PMs in the frame. Refer to the following figures of trunk module equipment (TME) frames for help.



9 Examine the Converter Fail LED on each NT2X06, NT2X09, and NT2X70 power converter card in the frame. Refer to the figures “Design of a TM shelf" and “Design of an MTM shelf" for help to locate these cards. Refer to the following figures for help to check the Converter Fail LED on each card.

PM SysB
major (continued)



If any LEDs	Do
are lit	step 10
are not lit	step 14

10 Note the PM with the LED light on.

At the MAP display

11 To post the PM and identify the location of the PM, type

`>PM; POST pm pm_no;QUERYPM`

and press the Enter key.

where

pm
is the type of PM (MTM, STM, or TM8)

pm_no
is the number (0 to 2047) of the PM

Example of a MAP response:

PM SysB
major (continued)

```
TM8    0         SysB
QUERYPM
    PM Type: TM8  PM No.: 0  Node_No.: 10
PM_STATUS: InSv  NODE_STATUS: OK,FALSE,  CHKSUM: #023E
PP LOAD: VALID  PP EXECS: VALID  FNAME: BTMKA02
PMS EQUIPPED: 13  PM INT. #: 1
 Site Flr  RPos  Bay_id  Shf  Description  Slot  EqPEC
 HOST  01   D04  TME 00  04   TM8 : 000          2X52AG
TM Entries:  0 to 4
```

If a maintenance (Mtce) flag	Do
appears next to the PM	step 12
does not appear	step 13

12 Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this point.

If the major alarm	Do
remains	step 13
changes	step 40
clears	step 42

13 Determine if the PM is the same as the PM that you identified in step 10.

If the PM	Do
is different	step 15
is the same	step 14

14 Clear the FSP alarm. Perform the correct alarm clearing procedure in this document. Complete the procedure and return to this step.

15 To busy the PM, type

>BSY

and press the Enter key.

At the equipment frame

16 Change the NT2X06, NT2X09, or NT2X70 power converter card. Refer to the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

PM SysB
major (continued)

At the MAP display

17 To load the PM, type

>LOADPM

and press the Enter key.

where

pm
is the type of PM (MTM, STM, or TM8)

pm_no
is the number (0 to 2047) of the PM

If the LOADPM	Do
fails, and the system generated a card list	step 27
fails, and the system did not generate a card list	step 41
fails, and the response is `loadfile not found in directory`	step 18
passes	step 26

18 Examine office records to determine the device and volume of your PM load files.

If your device	Do
is an SLM	step 19
is a DDU	step 21

19 To access the DISKUTIL level, type

>DISKUT

and press the Enter key.

20 To list the PM load file to the user directory, type

>LF device_volume_name

and press the Enter key.

where

device_volume_name
is the location and name of the PM load file

Example of input: LF S00DPMLOADS

Go to step 17.

PM SysB
major (continued)

21 To access the DSKUT level, type

>DSKUT

and press the Enter key.

22 To list the PM load file to the user directory, type

>LIV device_volume_name

and press the Enter key.

where

device_volume_name
is the location and name of the PM load file

Example of input: LIV D01PMLOADS

Go to step 17.

23 To post the PM, type

>POST pm pm_no

and press the Enter key.

where

pm
is the type of PM (MTM, STM, or TM8)

pm_no
is the number (0 to 2047) of the PM

Example of a MAP response:

```
TM8        0        SysB
```

If a maintenance flag	Do
appears next to the PM	step 24
does not appear	step 25

24 Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this point.

If the major alarm	Do
remains	step 25
changes	step 40
clears	step 42

25 To busy the PM, type

>BSY

and press the Enter key.

PM SysB
major (continued)

26 Return the PM to service, type

>RTS

and press the Enter key.

If the PM	Do
does not return to service, and the system generated a card list	step 27
does not return to service, and the system did not generate a card list	step 41
returns to service	step 35

At the equipment frame

27 Replace the first or next card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Refer to the figures *Design of a TM shelf* and *Design of an MTM shelf* for help to locate the card.

If you replace	Do
an NT0X70, NT2X06, NT2X09, NT2X45, NT2X53, or NT2X70 card	step 28
other than listed here	step 34

At the MAP display

28 To load the PM, type

>LOADPM

and press the Enter key.

where

pm
is the type of PM (MTM, STM, or TM8)

pm_no
is the number (0 to 2047) of the PM

If the LOADPM	Do
fails, and the system generated a card list, and you did not replace all cards on the list of cards that have faults	step 27

If the LOADPM	Do
fails, and the system generated a card list, and you replaced all cards on the list of cards that have faults	step 41
fails, and the system did not generate a card list	step 41
fails, and the response is loadfile not found in directory	step 29
passes	step 34

29 Check office records to determine the device and volume of your PM load files.

If your device	Do
is an SLM	step 30
is a DDU	step 32

30 To access the DISKUTIL level, type

>DISKUT

and press the Enter key.

31 To list the PM load file to the user directory, type

>LF device_volume_name

and press the Enter key.

where

device_volume_name
is the location and name of the PM load file

Example of input: LF S00DPMLOADS

Go to step 28.

32 To access the DSKUT level, type

>DSKUT

and press the Enter key.

33 To list the PM load file to the user directory, type

>LIV device_volume_name

and press the Enter key.

where

PM SysB
major (continued)

device_volume_name
is the location and name of the PM load file

Example of input: LIV D01PMLOADS

Go to step 28.

34 To return the PM to service, type

>RTS

and press the Enter key.

If the PM	Do
does not return to service, the system generated a card list, and you did not replace all cards on the list of cards that have faults	step 27
does not return to service, the system generated a card list, and you replaced all cards on the list of cards that have faults	step 41
does not return to service, and the system did not generate a card list	step 41
returns to service	step 35

35 To access the TTP level, type

>TRKS;TTP

and press the Enter key.

36 To post the PM, type

>POST P pm pm_no

and press the Enter key.

where

pm
is the type of PM (MTM, STM, or TM8)

pm_no
is the number (0 to 2047) of the PM

37 To busy all trunk circuits, type

>BSY ALL

and press the Enter key.

38 To post the PM again, type

>POST P pm pm_no

and press the Enter key.

where

pm
is the type of PM (MTM, STM, or TM8)

pm_no
is the number (0 to 2047) of the PM

39 To return all trunk circuits to service, type

>RTS ALL

and press the Enter key.

Go to step 42.

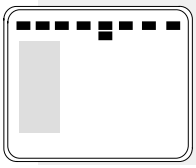
40 The SysB major alarm changed to another type of alarm. Refer to the correct alarm clearing procedure in this document. Go to step 42.

41 You will require additional maintenance action to clear this alarm. Contact the next level of support. Describe in detail the steps you performed to clear this alarm.

42 The procedure is complete.

PM talk battery critical

Alarm display



CM	MS	IOD	Net	**PM**	CCS	Lns	Trks	Ext	Appl
.	.	.	.	**nTBAT**	.	.	.	.	.
				C					

Indication

An nTBAT under the PM subsystem header indicates a critical alarm. The alarm involves the talk battery (TBAT) of an extended line concentrating module (XLCM) or enchanced LCM (LCME). A *C* appears underneath the nTBAT at the MTC level of the MAP.

Meaning

The alarm condition indicates, one or both units of the XLCM/LCME do not have talk batteries.

Note: References to LCM apply to XLCM and LCME peripheral module types.

Result

A loss of call processing and an indication of a critical alarm occur when a talk battery failure is present.

Common procedures

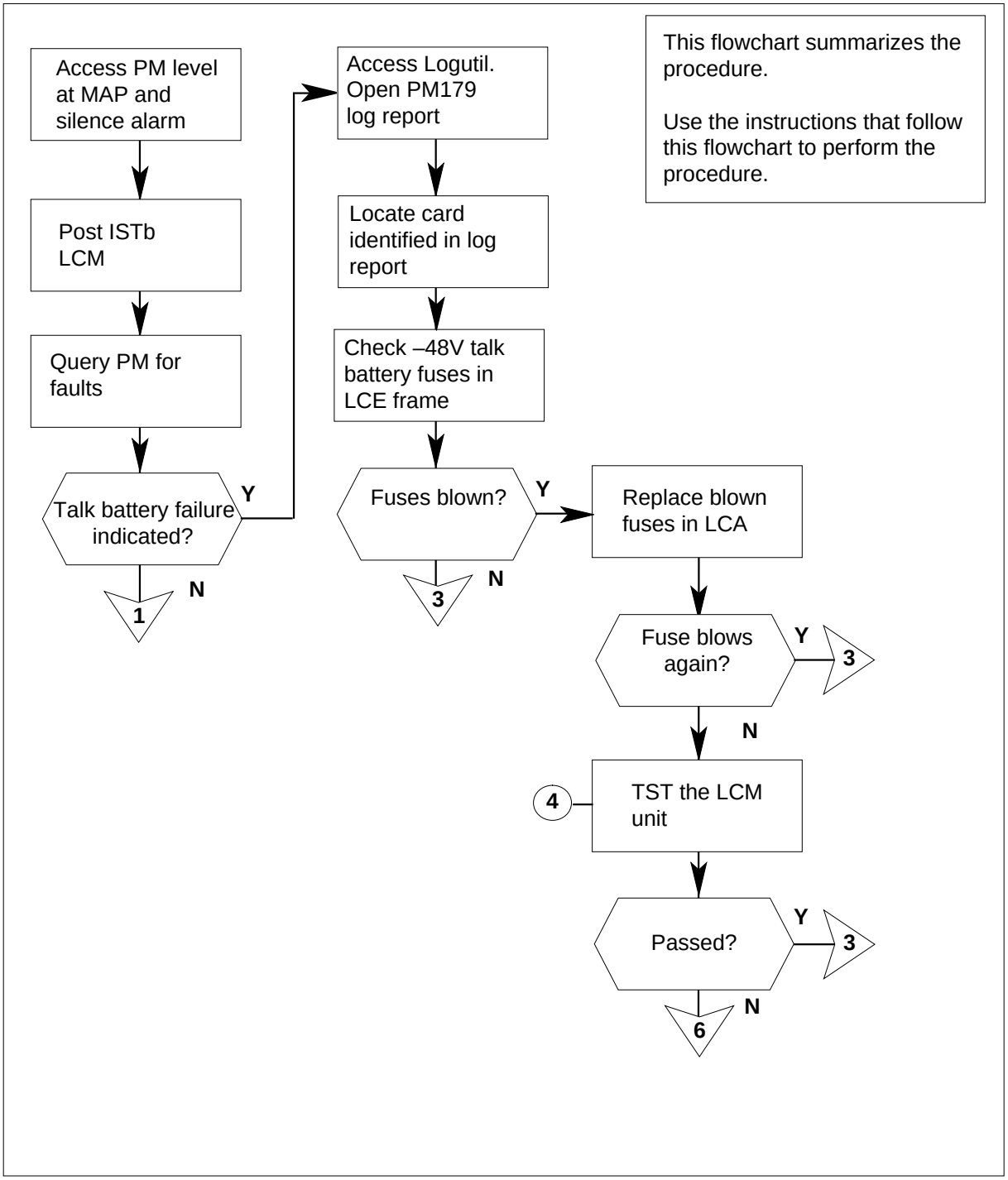
There are no common procedures.

Action

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

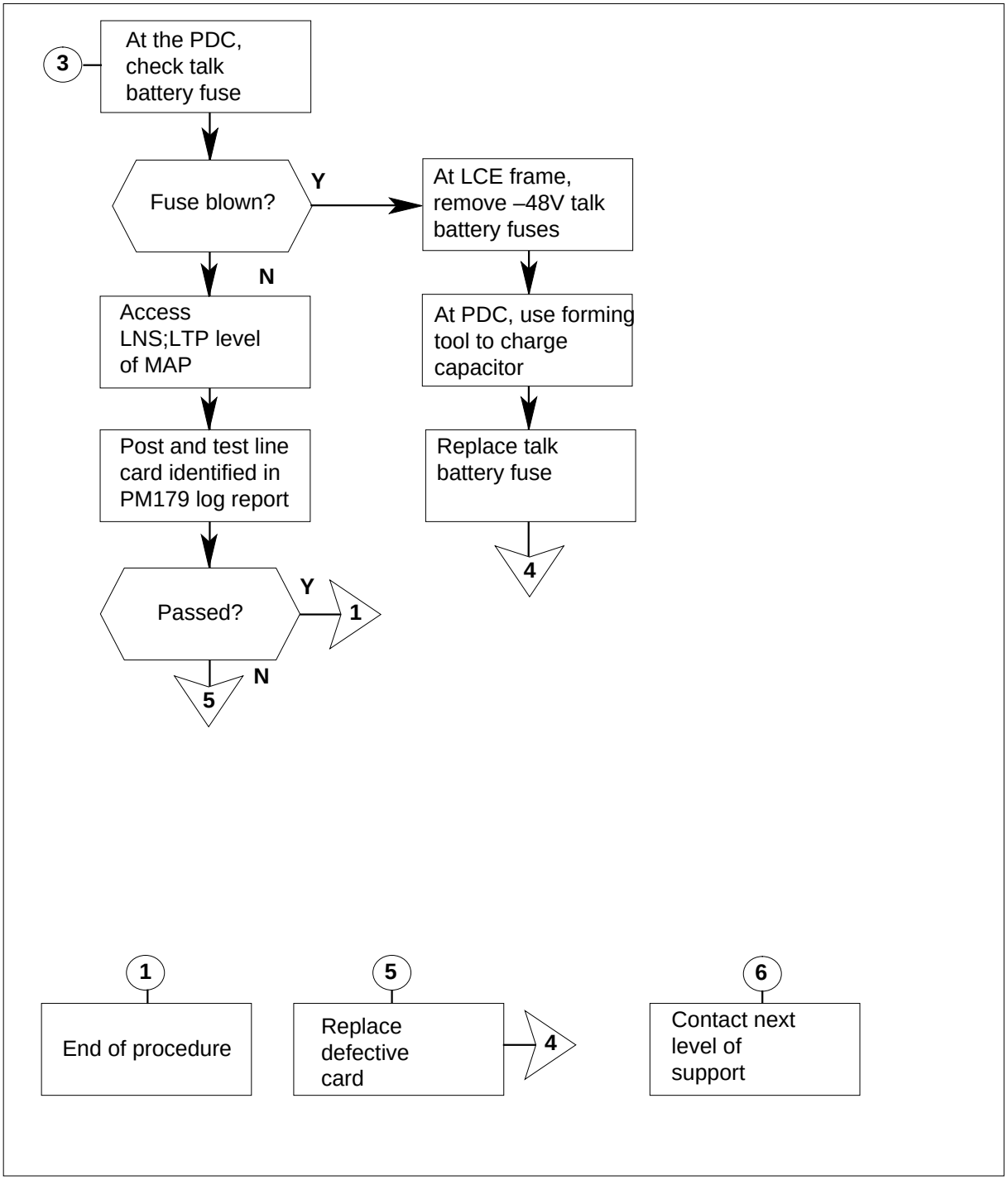
PM talk battery critical (continued)

Summary of Clearing a PM talk battery critical alarm



PM talk battery critical (continued)

Summary of Clearing a PM talk battery critical alarm (continued)



PM talk battery critical (continued)

Clearing a PM talk battery critical alarm

ATTENTION

Enter this procedure from a step in a procedure at the PM system level to clear alarms. Enter from the step that identified a PM alarm for the failure of an LCM or LCME talk battery.

At the MAP terminal

1 To silence an audible alarm, type

```
>MAPCI;MTC;SIL
```

and press the Enter key.

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

```
>PM
```

and press the Enter key.

3 To identify the LCM(E) that has faults, type

```
>DISP STATE ISTB LCM
```

and press the Enter key.

or

```
>DISP STATE ISTB LCME
```

and press the Enter key.

4 To post the LCM(E) with the lost talk battery, type

```
>POST LCM(E) site frame lcm(e)
```

and press the Enter key.

where

site
is the site name of the LCM (alphanumeric)

frame
is the frame number of the LCE (0-511)

lcm(e)
is the number of the LCM or LCME (0 or 1) in the frame

Example of an LCM MAP display:

PM talk battery critical (continued)

```
 CM    MS     IOD     Net     PM     CCS     Lns     Trks     Ext  APPL
  .     .      .       .     1LCM     .       .        .       .     .
                             *C*
LCM             SysB     ManB     OffL     CBsy     ISTb      InSv
 0 Quit     PM    0         0        2        0        2         42
 2 Post_    LCM   0         0        0        0        2          9
 3 ListSet
 4 SwRG     LCM   HOST 00 0   ISTb     Links_OOS:  CSide  0   PSide   0
 5 Trnsl_   Unit0:   ISTb                /RG: 1
 6 Tst_     Unit1:   ISTb                /RG: 1
 7 Bsy_                                 11  11  11  11  11  RG:Pref 1 InsV
 8 RTS_     Drwr:  01  23  45  67  89  01  23  45  67  89     Stby 0 Insv
 9 OffL            ..  ..  ..  ..  ..  ..  ..  ..  ..  ..
10 LoadPM_
11 Disp_
12 Next
13
14 QueryPM
15
16
17
18
```

5 To query the LCM(E) fault, type

>QUERYPM FLT

and press the Enter key.

Example of an LCM MAP response:

```
Node inservice troubles exist:
One or both Units inservice trouble
LCM UNIT 0 Inservice Troubles Exist:
Talk Battery Failure
LCM UNIT 1 Inservice Troubles Exist:
Talk Battery Faliure
```

6 To access the logutil utility subsystem and open the PM179 log buffer, type

>LOGUTIL;OPEN PM 179

and press the Enter key.

7 To locate the line card where the system detected the loss of a talk battery, type

>BACK

and press the Enter key.

Example of a MAP response:

PM talk battery critical (continued)

```
*** PM179 NOV30 19:02:45 7465 TBL  PM HW EXCEPTION REPORT
LCM HOST 00 1 Unit 0Self Test Fail – Talk Battery Problem
Talk Battery failure: detected on shelf 38 by card
6X17BA–8:2
```

Note: Repeat this command until you find the log or reach the end of the buffer.

8 To quit the logutil utility, type

>QUIT

and press the Enter key.

At the LCE/LCME frame

9 Check the fuses in each LCA baffle.

If fuses	Do
have blown (indicator protrudes)	step 10
have not blown	step 19

10 Determine if the fuse has blown.

- Note 1: In the LCM
  - fuses 01 to 05 each supply +5 V
  - fuses 06 to 10 each supply +15 V
  - fuses 11 to 15 each supply -48 V
- Note 2: In the LCME
  - fuses F01 to F04 each supply -48V battery return
  - fuses F05 to F08 supply -48V for the PUPS
  - fuses F09 to F12 each supply +15V
  - fuses F13 to F16 each supply -48V talk battery
  - fuse F17 supplies the ringing generator

11 Use the following table to determine the next step.

If the frame type	Do
is an LCE frame	step 12
is an LCME frame	step 13

PM talk battery critical (continued)

12 Use the following table to determine the LCM -48V fuses and their associated +15V fuses. The LCM -48V fuses range from 11 to 15. The +15V fuses range from 06 to 10.

+15V fuse number	-48V fuse number
06	11
07	12
08	13
09	14
10	15

Go to step 14

13 Use the table below to determine the LCME -48V fuse and their associated +15V fuses and -48V fuses. The +15V fuses range from F09 to F12. The -48V battery return fuses range from F01 to F04. The LCME -48V talk battery fuses range from F13 to F16.

+15V fuse number	-48V battery return fuse number	-48V talk battery fuse number
F09	F01	F13
F10	F02	F14
F11	F03	F15
F12	F04	F16

Go to step 14.

At the MAP terminal

14 To make the line drawer (LD) that associates with the blown fuses busy, type

`>BSY DRWR drwr_no`

and press the Enter key.

where

drwr_no
is the line subgroup (LSG) (0 to 19 for an LCM and 0 to 15 for an LCME) that associates with the blown fuse

Example of a MAP response:

PM talk battery critical (continued)

LCM

```
LCM  HOST 00 0   ISTb   Links OOS: Cside  0 Pside  0
  Unit0: ISTb                    /RG: 1
  Unit1: ISTb                    /RG: 1
                               11  11  11  11  11  RG: Pref 1 InSv
  Drwr:  01  23  45  67  89  01  23  45  67  89      Stby 0 InSv
         ..  ..  S.  ..  ..  ..  ..  ..  ..  ..
 bsy drwr 4
 LCM HOST 00 0  Drwr 4 will be taken out of service
 Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

or

LCME

```
LCME HOST 01 1   ISTb   Links OOS: Cside  0
 Unit0: ISTb                   /RG: 1
 Unit1: ISTb                   /RG: 1
                             11  11  11  RG: Pref 1 InSv
 Drwr:  01  23  45  67  89  01  23  45      Stby 0 InSv
        ..  ..  SS  ..  ..  ..  ..  ..
 bsy drwr 4
 WARNING ... this action will affect both drwrs 4 and 5
 LCME HOST 01 1 Drwr 4 will be taken out of service
 Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

15 Use the following table to determine the next step

If the blown fuse	Do
is +15V	step 16
is -48V	step 17

16 Remove the blown fuse, and the associated fuse. For example, in an LCM, if the blown fuse is 06, also remove fuse 11.

17 Obtain a replacement fuse with the same voltage and amperage as the blown fuse.

18

DANGER
Protect against risk of fire
Replace the blown fuse with a fuse of the same type, rating (color code), and manufacturer.

PM talk battery critical (continued)

Insert the +15V fuse. Insert the -48V fuse removed in step 16.

If the fuse	Do
has blown (protruding indicator)	step 36
has not blown	step 19

At the PDC frame

19 Check the associated fuses of the talk battery at the power distribution center (PDC).

If the fuses	Do
have blown (indicator protrudes)	step 20
have not blown	step 31

20 Remove the fuse holder. Replace the cartridge fuse. Remove the guard fuse in the fuse holder.

21 Obtain a capacitor forming tool.

Note: A capacitor forming tool consists of a 100 watt 120V light bulb screwed into a socket with bare-ended twisted wires.

At the LCE/LCME frame

22 Refer to the following table to determine the next step.

If the frame type	Do
is an LCE frame	step 23
is an LCME frame	step 24

23 At the LCE frame that associates with the blown fuse, remove the five fuses for the -48V talk battery. The fuses reside in the baffels above the LCA that associate with the blown PDC fuse. Refer to the following table for feed-to-LCA links.

If LCM LCA in the frame	Talk batter feed at PDC
is LCA 0	is PDC feed A
is LCA 1	is PDC feed B

Go to step 25

24 At the LCME frame that associates with the blown fuse, remove the eight fuses for the -48 V talk battery. The fuses reside in the shelf fuse panel at the

PM talk battery critical (continued)

LCA that associates with the blown PDC fuse. Refer to the following table for feed to LCME LCA links.

If LCME LCA in the frame	DoTalk battery feed at PDC
is LCA 0	is PDC feed A
is LCA 1	is PDC feed B

At the PDC frame

25

DANGER
Risk of electrocution
Some terminals inside the PDC have an electrical potential of -48V dc to -60V dc. Do not touch any terminals inside the PDC.

Connect the leads of the capacitor forming tool across the connectors in the fuse holder slot.

Note: The bulb glows. The bulb becomes dark when the capacitors are at maximum charge.

26 Insert the fuse holder into the PDC frame slot.

At the LCE/LCME frame

27 After you form the capacitor, insert the LCA fuses that you removed in step 23 or 24.

If the fuse	Do
has blown again	step 36
has not blown again	step 28

At the MAP terminal

28 To test the ManB line drawer, type

```
>TST DRWR drawr_no
```

and press the Enter key.

where

PM talk battery critical (continued)

drwr_no
is the LSG (0 to 19) that associates with the blown fuse

Note: If in an LCM, repeat this command for the other LSG in the LD.

If TST command	Do
passed	step 29
failed and card has not been previously replaced	step 35
failed and card has been replaced	step 36

29 To return the LD to service, type

>RTS DRWR drwr_no

and press the Enter key.

where

drwr_no
is the LSG (0 to 19) that you tested in step 28.

Note: If in an LCM, repeat this command for the other LSG in the LD.

If the RTS command	Do
passes	step 30
fails	step 36

30 To determine if the fault cleared, type

>QUERYPM FLT

and press the Enter key.

If the LCM minor alarm	Do
remains	step 31
clears	step 37

31 To access the LTP level of the MAP display and post the line circuit card identified in step 7, type

>LNS;LTP;POST L site frame lcm lsg circuit

and press the Enter key.

site
is the site name of the LCM (alphanumeric)

frame
is the frame number of the LCE frame (0 to 511)

PM talk battery critical (end)

lcm
is the number of the LCM

lsg
is the number (0 to 19) of the LSG

circuit
is the number (0 to 31) of the line circuit card

32 To test the WLC, type

>DIAG

If diagnostics	Do
passed	step 34
failed and card has not been previously replaced	step 33
failed and card has been replaced	step 36

33 Go to the correct procedure in the *Card Replacement Procedures.* Replace the WLC that has faults. Notify operating company personnel the card must change. Go to step 32 after the card replacement.

34 To query the LCM, to make sure that faults are not present, type

>QUERYPM FLT

and press the Enter key.

Example of a MAP response:

```
No faults exist:
LCM UNIT 0 Inservice:
LCM UNIT 1 Inservice:
```

If the alarm condition	Do
clears	step 37
remains	step 36

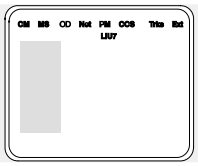
35 Go to the correct procedure in *Card Replacement Procedures* to replace the card that has faults. Notify operating company personnel the card must change. After the BIC card replacement, go to step 28.

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

37 The procedure is complete. If other alarms appear, use the correct procedures to clear the alarms.

PM talk battery minor

Alarm display



CM	MS	IOD	Net	**PM**	CCS	Lns	Trks	Ext	APPL
.	.	.	.	**nTBAT**	.	.	.	.	.

Indication

The alarm code TBAT under the peripheral module (PM) subsystem header indicates a talk battery (TBAT) alarm. The absence of *C* or M under the TBAT indicates a minor alarm. The number (*n*) before TBAT indicates the number of line concentrating modules (LCM) with a minor alarm.

Meaning

The alarm code indicates the number (*n*) of LCMs in the in service trouble (ISTb) state that cannot test the talk battery.

Note: References to LCM apply to XLCM and LCME peripheral module types.

Result

The ISTb condition does not directly affect service. The ISTb condition indicates that testing of the talk battery is not possible for the number (*n*) of LCMs indicated.

Talk battery failure interrupts service.

Common procedures

This procedure refers to procedure “How to monitor system maintenance".

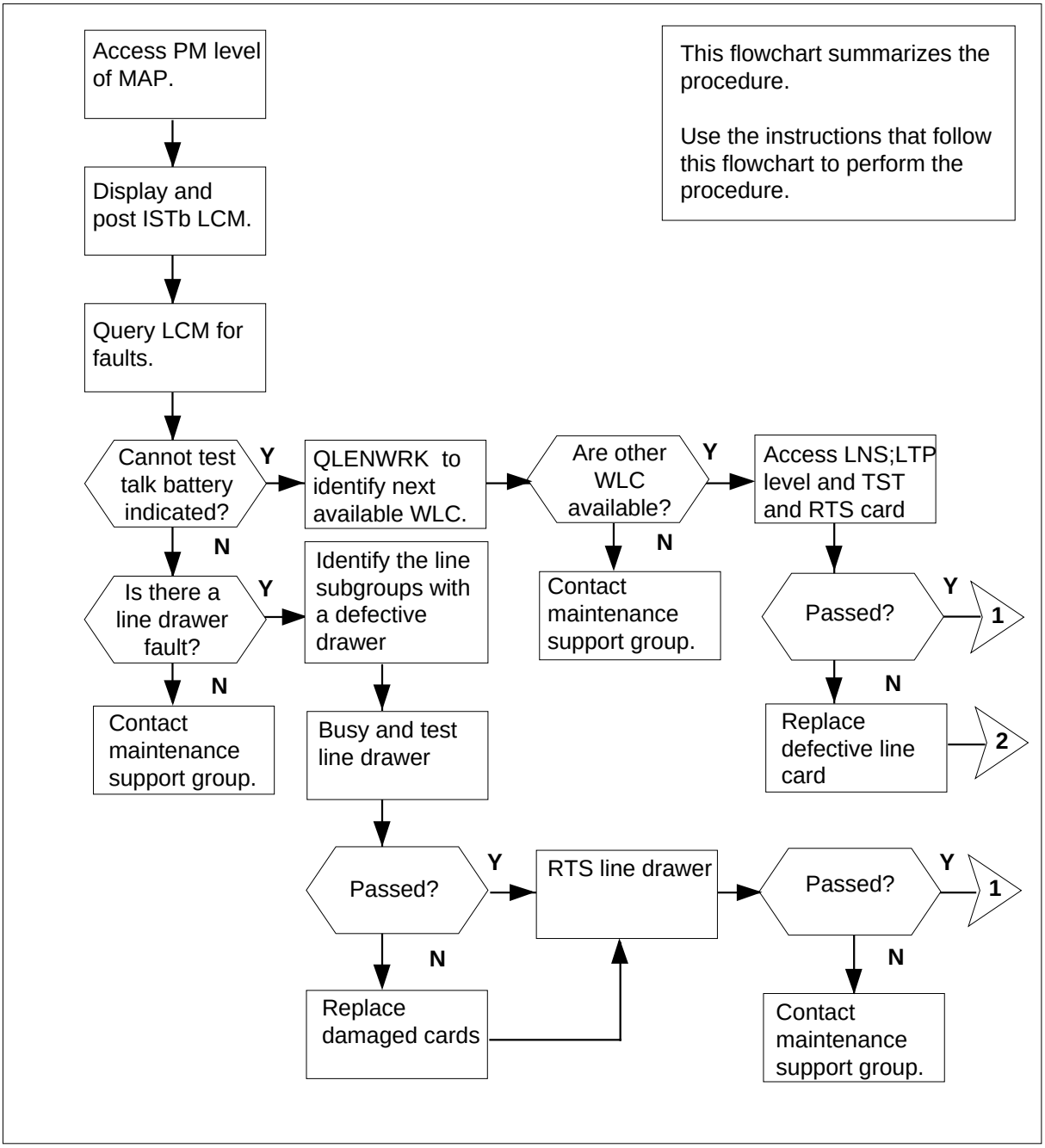
Do not go to the common procedures unless the step-action procedure directs you to the common procedures.

Action

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

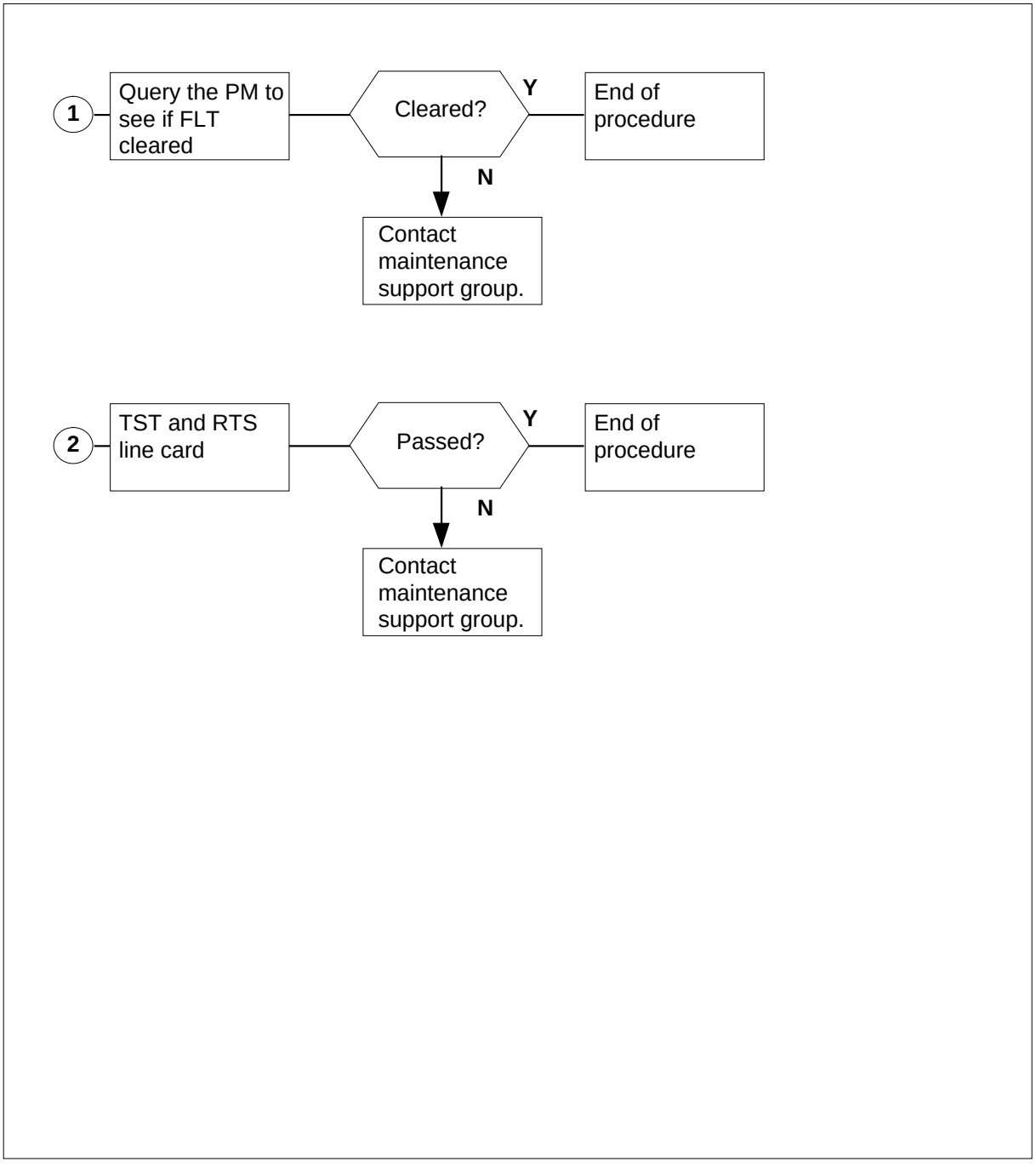
PM talk battery minor (continued)

Summary of Clearing a PM talk battery minor alarm



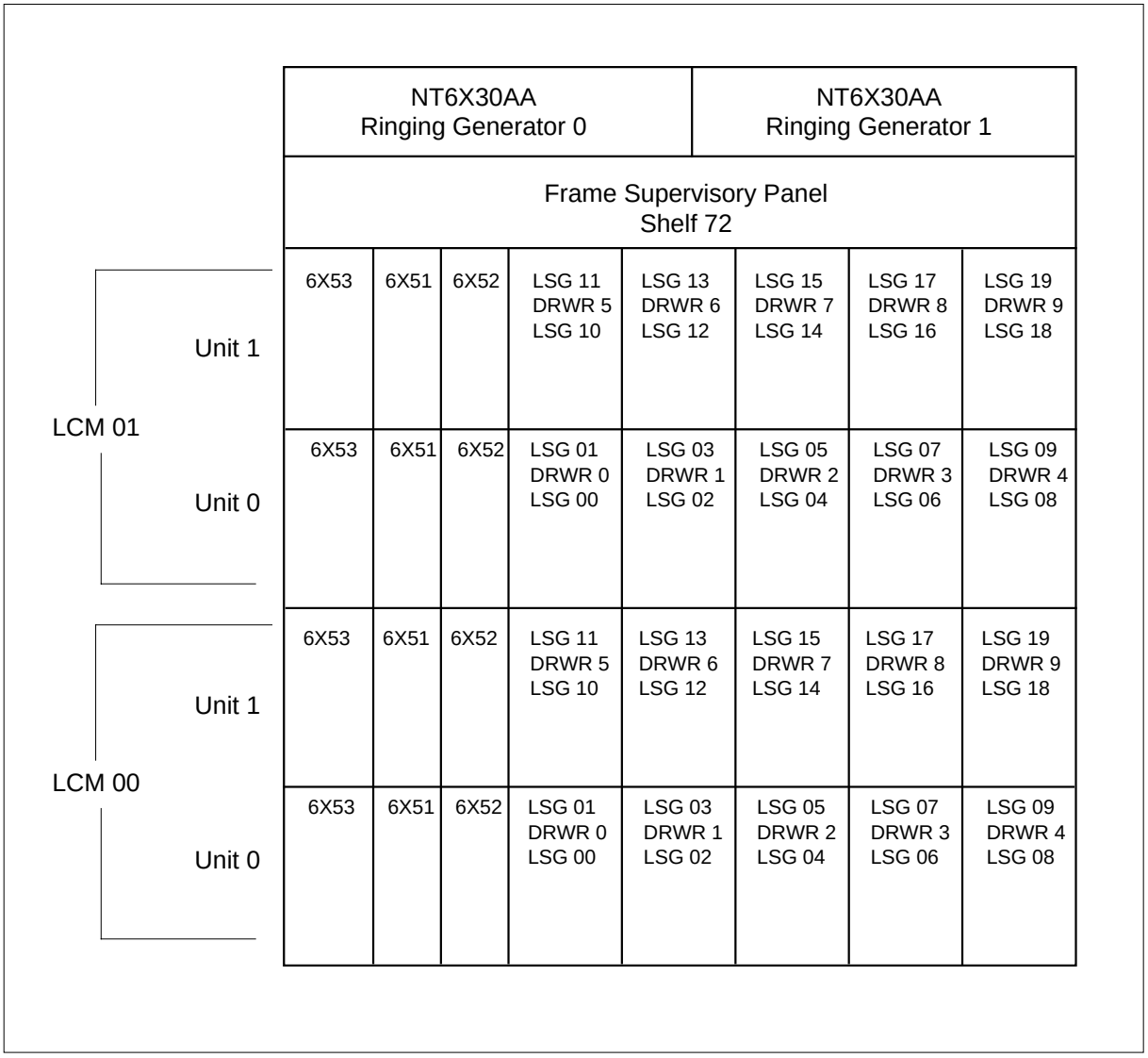
PM talk battery minor (continued)

Summary of Clearing a PM talk battery minor alarm (continued)



PM talk battery minor (continued)

LCE frame



PM talk battery minor (continued)

Clearing a PM talk battery minor alarm

> **ATTENTION**
> You only enter this procedure from a step in the PM system level alarm clearing procedure. You enter from the step that identified a PM alarm for a fault in an LCM talk battery.

At the MAP terminal

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

`>MAPCI;MTC;PM`

and press the Enter key.

Example of a MAP response:

```
     SysB      ManB     OffL     CBsy     ISTb     InSv
PM     1         2        0        0        1       12
```

If an audible	Do
rings	step 2
does not ring	step 3

2 To silence the alarm, type

`>SIL`

and press the Enter key.

3 To display all ISTb LCM(E)s, type

`>DISP STATE ISTB LCM`

and press the Enter key.

or

`>DISP STATE ISTB LCME`

and press the Enter key.

Example an LCM MAP response:
ISTb LCM :HOST 00 0

Note 1: If more than one LCM(E) is `ISTb`, select an LCM(E) to work on.

Note 2: Record the name and number of the `ISTb` LCM(E)s.

4 To post the LCM(E) with the alarm condition, type

`>POST LCM(E) site frame lcm(e)`

PM talk battery minor (continued)

and press the Enter key.

where

site
is the site name of the LCM(E) (alphanumeric)

frame
is the frame number that houses the LCM(E) (0 to 511)

lcm(e)
is the number of the LCM or LCME that you recorded in step 3

Example of an LCM MAP response:
LCM HOST 00 0 ISTb Links OOS: Cside 0 Pside 0Unit 0: ISTb /RG:0Unit 1: ISTb /RG:0 11 11 11 11 11 RG: Pref 0 InSvDrwr: 01 23 45 67 89 01 23 45 67 89 Stby 1 InSv .. SS .. ..

If a maintenance flag	Do
appears next to either unit	step 5
does not appear	step 6

5 Go to the common procedure “How to monitor system maintenance" in this document. Complete the procedure and return to this step.

If the LCM minor alarm	Do
remains	step 6
clears	step 28

6 To determine the fault indicators, type

>QUERYPM FLT

and press the Enter key.

Example of an LCM MAP response:

```
Node inservice troubles exist:
One or both Units inservice trouble
LCM UNIT 0 Inservice Troubles Exist:
Cannot test Talk Battery
LCM UNIT 1 Inservice Troubles Exist:
Cannot test Talk Battery
```

7 To access the logutil utility subsystem and open the PM179 log buffer, type

>LOGUTIL;OPEN PM 179

and press the Enter key.

8 To locate the line card where the system detected the loss of talk battery, type

>BACK

and press the Enter key.

PM talk battery
minor (continued)

Example of a MAP response:

```
* PM179 NOV30 18:57:45 5148 TBL  PM HW EXCEPTION REPORT
LCM HOST 00 0  Unit 0 Self Test Fail - Talk Battery Problem
Cannot test Talk Battery: shelf 04 no WLC provisioned
```

Note: Repeat this command until you find the log or reach the end of buffer.

9 To quit the logutil utility, type

>QUIT

and press the Enter key.

10 A number of WLCs are available to the posted LCM for a test of the talk battery. To query the DMS system for the number, type

>QLENWRK r lcm to_lcm ALL nlcc $ d

and press the Enter key.

where

r
is the range of LCMs you must check

lcm
is the number of the first LCM number you query

nlcc
is the nil line class code

$
is the end of entries

d
is a request for a detailed report

Example QLENWRK R HOST 0 0 HOST 0 0 ALL NLCC $ D

11 Examine the report for any WLCs available to test the talk battery.

If WLCs	Do
are available	step 13
are not available	step 12

12 Contact next level of support to have a WLC added to the LCM for a test of the talk battery.

13 Examine the MAP display screen and determine the state of the LCM line drawers (LD).

If LDs	Do
are S (SysB)	step 14
are M (ManB)	step 15

PM talk battery minor (continued)

If LDs	Do
are 0 (OFFL)	step 14

14 To make the line drawer (LD) busy, type

>BSY DRWR lsg_no

and press the Enter key.

where

lsg_no
is the line subgroup (LSG) (0 to 19 for an LCM and 0 to 15 for an LCME).

Example of an LCM and LCME MAP responses:

LCM

```
LCM  HOST 00 0   ISTb   Links OOS: Cside  0 Pside  0
  Unit0: ISTb                    /RG: 1
  Unit1: ISTb                    /RG: 1
                               11  11  11  11  11  RG: Pref 1 InSv
  Drwr:  01  23  45  67  89  01  23  45  67  89      Stby 0 InSv
         ..  ..  S.  ..  ..  ..  ..  ..  ..  ..
 bsy drwr 4
 LCM HOST 00 0  Drwr 4 will be taken out of service
 Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

or

LCME

```
LCME HOST 01 1   ISTb   Links OOS: Cside  0
 Unit0: IStb                   /RG: 1
 Unit1: ISTb                   /RG: 1
                             11  11  11  RG: Pref 1 InSv
 Drwr:  01  23  45  67  89  01  23  45      Stby 0 InSv
        ..  ..  SS  ..  ..  ..  ..  ..
 bsy drwr 4
 WARNING ... this action will affect both drwrs 4 and 5
 LCME HOST 01 1 Drwr 4 will be taken out of service
 Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

15 To test the ManB line drawer, type

>TST DRWR lsg_no

and press the Enter key.

where

lsg_no
is the number of the LSG (0 to 19 for an LCM and 0 to 15 for an LCME).

PM talk battery minor (continued)

Note: Repeat this command for the other LSG in the LCM line drawer.

If the TST command	Do
passes	step 16
fails and card has not been previously replaced	step 26
fails and card has been replaced	step 27

16 To return the LD to service, type

`>RTS DRWR lsg_no`

and press the Enter key.

lsg_no
is the number of the LSG (0 to 19 for an LCM and 0 to 15 for an LCME).

If the RTS command	Do
passes	step 17
fails	step 27

17 To determine if the fault cleared, type

`>QUERYPM FLT`

and press the Enter key.

If the LCM minor alarm	Do
remains	step 18
clears	step 28

18 Access the LTP level of the MAP. Post the world line card (WLC), identified in step 12, as available to test the talk battery. To post the WLC, type

`>LNS;LTP;POST L site frame lcm(e) lsg circuit`

and press the Enter key.

site
is the site name of the LCM(E) (alphanumeric)

frame
is the frame number of the LCE frame (0 to 511)

lcm(e)
is the number of the LCM or LCME

lsg
is the number (0 to 19) of the LSG

circuit
is the number (0 to 31) of the line circuit card

PM talk battery minor (continued)

19 Examine the MAP for the state of the WLC

Example of a MAP response:

```
LCC PTY RNG .....LEN.........  DN   STA F S LTA TE RESULT
1FR      HOST 00 0 03 03      NO DIR  SB
```

If the line circuit card state	Do
is MB	step 20
is SB	step 21
is OFFL	step 21
is Cut	step 21
is INB	step 21
is NEQ	step 27

20 To return the WLC to service, type

>RTSand press the Enter key.

If the RTS command	Do
passed	step 28
failed	step 22

21 To make the WLC busy, type

>BSY

and press the Enter key.

22 To test the WLC, type

>DIAG

and press the Enter key.

If diagnostics	Do
pass	step 23
fails and card has not been previosly replaced	step 25
fails and card has been replaced	step 27

23 To return the WLC to service, type

>RTS

PM talk battery minor (end)

and press the Enter key.

If the RTS command	Do
passed	step 28
failed	step 27

24 Access the PM level of the MAP display and query the PM to make sure that the alarm cleared. To access the PM level of the MAP, type

```
>QUIT;PM;POST LCM(E) site frame lcm(e);QUERYPM FLT
```

and press the Enter key.

where

site
is the site name of the LCM(E) (alphanumeric)

frame
is the frame number that houses the LCM(E) (0 to 511)

lcm(e)
is the number of the LCM or LCME, as recorded in step 3

If the minor alarm	Do
clears	step 28
remains	step 27

25 Go to the correct procedure in *Card Replacement Procedures*. Replace the WLC. Go to step 23.

26 Go to the correct procedure in *Card Replacement Procedures*. Return to step 15 after you replace the card.

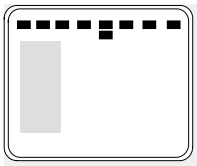
27 For additional help, contact the next level of support.

28 The procedure is complete.

If additional alarms appear, proceed to the correct procedure to clear the alarms.

PM UEN critical

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	Appl
.	.	.	.	**1UEN *C***	.	.	.	.	.

Indication

At the MTC level of the MAP terminal, UEN (preceded by a number) appears under the PM header of the alarm banner. A *C* follows the UEN. The UEN indicates a critical alarm for a Universal Edge 9000 (UEN) shelf. The number that precedes the UEN indicates the number of UENs that the alarm affects. The preceding figure illustrates an alarm banner with an UEN critical alarm.

Meaning

The UEN is system busy (SysB) or C-side busy. A UEN is SysB if both units are SysB. A UEN is SysB if one unit is SysB and the other unit is manual busy (ManB). A UEN is C-side busy if both units are C-side busy.

Impact

Service stops when a UEN is SysB or C-side busy.

Common procedures

This procedure refers to the common procedures that follow:

- “Clearing PM C-side faults”
- “Monitoring system maintenance”

Do not go to the common procedure until directed to do so by a step in the step action procedure.

Next level of maintenance

Repeat this procedure if it is not successful when you first perform the procedure.

A problem can occur that requires the help of the local maintenance personnel. Gather all important logs, reports, and system information (that is, product type and current software load) for analysis. The related logs, maintenance notes, and system information help make sure that the next level of

PM UEN
critical (continued)

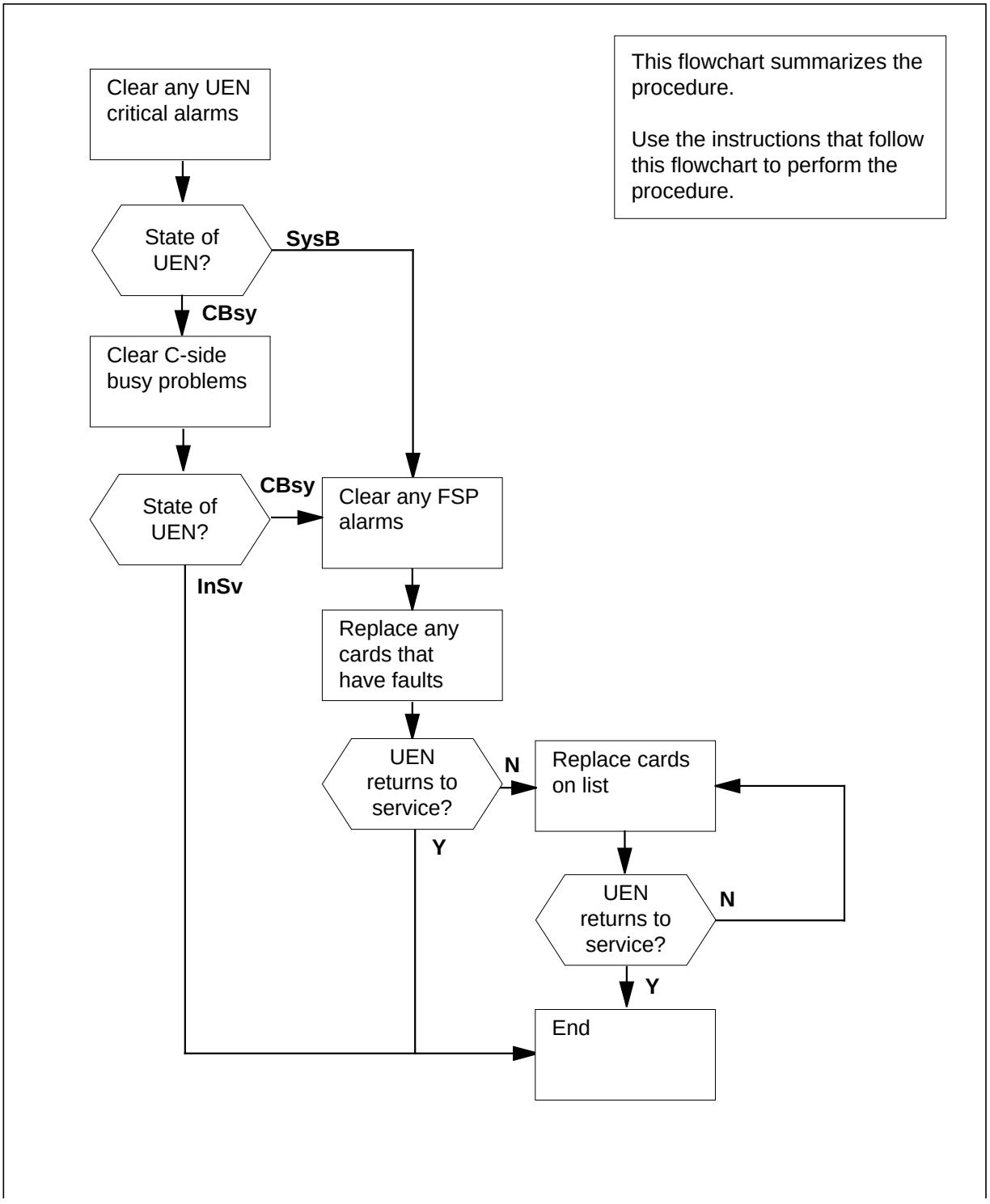
maintenance and support can find the problem. More detail about logs appears in the *Log Report Reference Manual*.

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to clear the alarm.

PM UEN
critical (continued)

Summary of clearing PM UEN critical alarm



PM UEN
critical (continued)

Clearing PM UEN critical alarm

At you current location

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

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP response:

```
          SysB     ManB     OffL     CBsy   ISTb     InSv
PM          1        3        5        7      6        12
```

If	Do
an audible alarm rings	step 2
the *C* indicator at the alarm banner flashes	step 2
the response is other than listed here	step 3

2 To silence the alarm, type

>SIL

and press the Enter key.

3 To determine the status of all UENs and host PMs (LGC, LTC, or RCC2) that the UENs connect to, type

>STATUS

and press the Enter key.

Example of a MAP response:

```
          SysB    ManB     OffL     CBsy    ISTb     InSv
PM          2       0        0        2       0        25

TM8         0       0        0        0       0         2
MTM         0       0        0        0       0         3
LGC         1       0        0        0       0         3
LCM         1       0        0        2       0         0
DTC         0       0        0        0       0         1
LIM         0       0        0        0       0         1
LIU7        0       0        0        0       0         1
FRIU        0       0        0        0       0         1
LCME        0       0        0        0       0         1
UEN         1       0        0        0       0         1
                                                  MORE ...
```

PM UEN
critical (continued)

Note: If UENs are SysB and CBsy, work on the SysB UENs first.

If	Do
a minimum of one LGC / LTC / RCC2 is SysB or CBsy	step 4
no LGC / LTC / RCC2 is SysB or CBsy	step 5

4 A minimum of one LGC /LTC/ RCC2 critical alarm is present. To clear all LGC / LTC / RCC2 critical alarms, perform the correct procedure in this document. Wait for the system to clear related UEN alarms.

If	Do
the system clears all UEN alarms	step 36
the UEN critical alarm remains	step 5
the UEN critical alarm changes to an UEN major alarm or an UEN minor alarm	step 35

5 To display all the CBsy or SysB UENs, type

`>DISP STATE state UEN`

and press the Enter key.

where

state
is CBsy or SysB, as determined in step 3

Example of a MAP response:
SYSB UEN:HOST 00 0

Note: If multiple UENs are CBsy or SysB, select a UEN on which to work. Record the number of the UEN.

If you are recovering	Do
a CBsy UEN	step 6
a SysB UEN	step 7

6 Go to the common procedure “Clearing PM C-side” faults in this document. Complete the procedure and return to this point.

If	Do
the UEN remains CBsy	Treat the CBsy UEN as a SysB UEN and go to step 7
the UEN changes to SysB	step 7

PM UEN
critical (continued)

If	Do
one UEN unit returns to service	step 35
both UEN units return to service	step 36

7 Check the EXT header of the alarm banner.

If an FSP alarm	Do
is present	step 8
is not present	step 19

8 To locate the FSP alarm, type

```
>EXT; LIST FSP
```

and press the Enter key.

Example of a MAP response:
FSPAISD

In this example, the alarm is an FSP alarm on Aisle D.

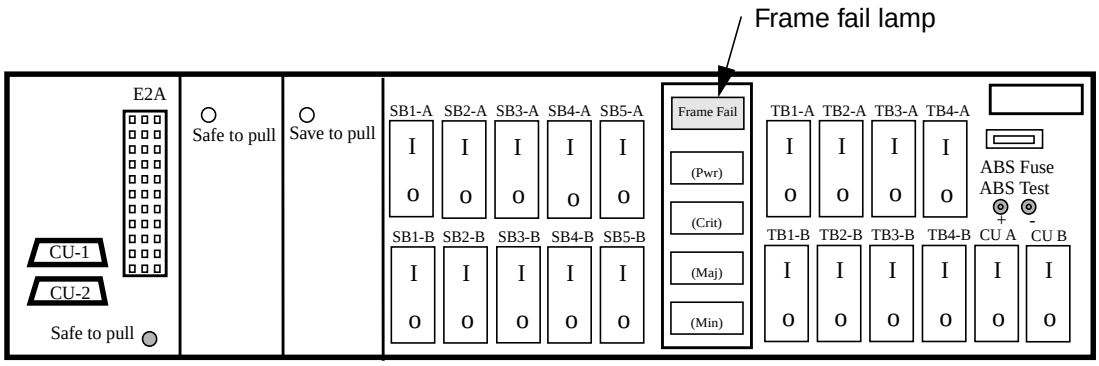
At the equipment aisle

9 Go to the aisle identified in step 8. The end aisle alarm is lit.

At the equipment frame

10 Identify the UEN frame with the FSP alarm. Check the Frame fail lamp on the breaker interface panel (BIP). The frame with the FSP alarm will have a lit Frame fail lamp. The following figure shows a BIP with a lit Frame fail lamp.

Breaker interface panel with Frame fail lamp lit



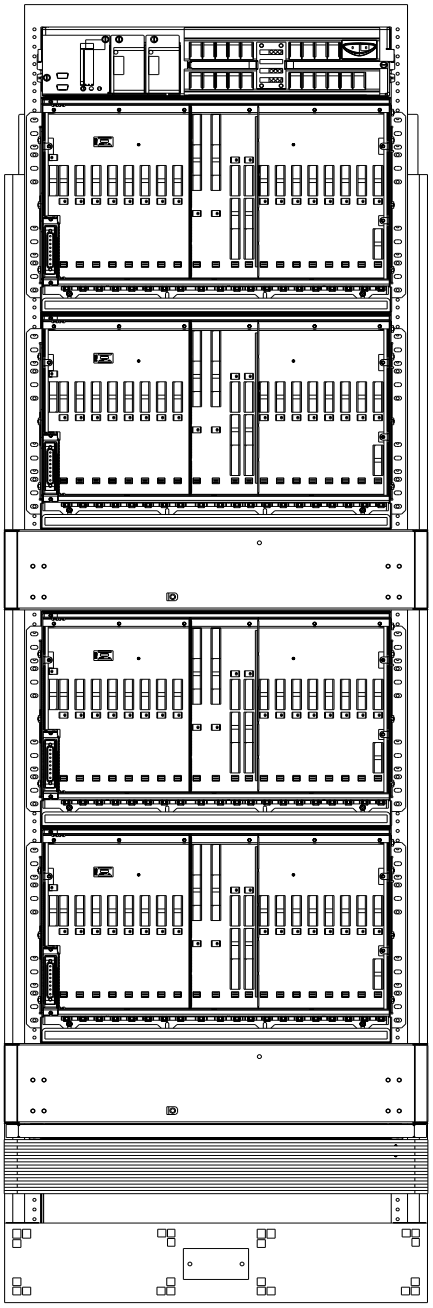
A Frame fail lamp may be present because of the following:

- cooling unit failure
- blown ABS fuse
- signal battery or talk battery power failure
- talk battery filter (NTNY25) failure

11 Identify the UENs in the frame. Refer to the figure “UEN frame” for help.

PM UEN
critical (continued)

UEN frame



NTNY17AA Breaker interface panel (BIP)

NTNP10BA UEN shelf 3

UEN shelf 2

NTNY18AA Cooling Unit (CU)
and local craft access panel (LCAP)

UEN shelf 1

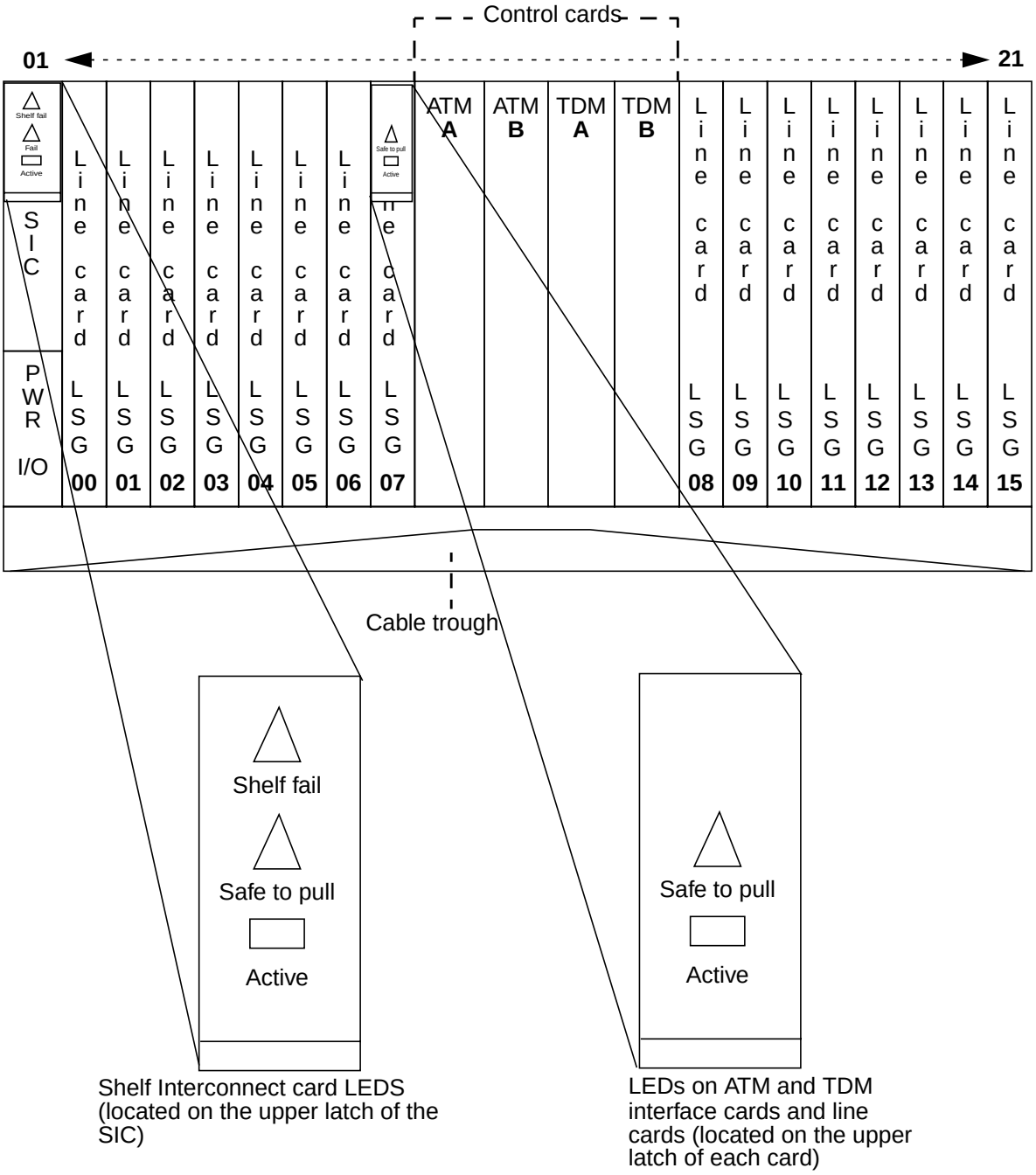
UEN shelf 0

NTNY18AA CU

NT4K15CA air filter
NT4K13AA drip tray

PM UEN
critical (continued)

UE9000 DMS shelf



LSG = line subgroup

PM UEN
critical (continued)

12 Check the Shelf Fail LED on the NTNY23 Shelf Interconnect card (SIC) in the UEN shelf. Refer to the figure “UE9000 DMS shelf” for help in checking the Shelf fail LED.

If a SIC Shelf fail LED	Do
is lit	step 13
is not lit	step 17

13 Note the UEN with the LED light on.

14 To post the system busy UEN and identify the location of the system busy UEN, type

`>PM; POST UEN site frame_no shelf_no;QUERYPM`

and press the Enter key.

where

site
is the site name of the UEN you recorded in step 5

frame_no
is the number (00 to 511) of the UEN you recorded in step 5

shelf_no
is the shelf number (0, 1, 2, or 3) of the UEN you recorded in step 5

Example of a MAP response:

```
UEN HOST 00 0 SysB Links_OOS:  CSide 1 PSide 0
Unit0:    SysB
Unit1:    SysB
                           11  11  11  11  11
Drwr:  01  23  45  67  89  01  23  45  67  89
       ..  --  --  --  --  ..  --  --  --  --
QueryPM
PM Type: UEN Int. No: 42 Status index: 26 Node_No: 137
UEN HOST 00 0 Memory Size – Unit 0: 8M, Unit 1: 8M
Loadnames: LCMINV – UEN014AM ,
Unit0: Act - UEN014AM   Stby - UEN014AM
Unit1: Act - UEN014AM   Stby - UEN014AM
UEN HOST 00 0 is included in the list of LCM types
    scheduled for a REX test.
Last REX test was TUE. 2000/08/18 at 1:08:58; FAILED.
Node Status: {OK, FALSE}
Unit 0 Status: {OK, FALSE}
Unit 1 Status: {OK, FALSE}
Site  Flr  RPos  Bay_id  Shf  Description  Slot  EqPEC
HOST   01   C05  UEE 00   04  UEN 00 0           NY01AA
World Line Card Template(s) in use:
NP50AA KX08AA
Services: NEUTRAL
```

If a Mtce indicator	Do
appears next to either unit	step 15

PM UEN
critical (continued)

If a Mtce indicator	Do
does not appear	step 16

15 Go to the common procedure *Monitoring system maintenance* in this document. Complete the procedure and return to this point.

If the critical alarm	Do
remains	step 16
changes	step 35
clears	step 36

16 Determine if the UEN is the same as the UEN identified in step 13.

If the UEN	Do
is different	step 17
is the same	step 18

17 Clear the FSP alarm. Perform the correct alarm clearing procedure in this document. Complete the procedure and return to this point.

18 To busy the UEN, type

```
>BSY PM
```

and press the Enter key.

Go to step 27.

At the equipment frame

19 To post the UEN, type

```
>POST UEN site frame_no shelf_no
```

and press the Enter key.

where

site
is the site name of the UEN you recorded in step 5

frame_no
is the number (00 to 511) of the UEN you recorded in step 5

shelf_no
is the shelf number of the UEN you recorded in step 5

Example of a MAP response:

PM UEN
critical (continued)

```
UEN HOST 01 1  SysB  Links_OOS:  CSide 1, PSide 0
Unit0:  Act     SysB
Unit1:  Inact   SysB
```

If a Mtce flag	Do
appears next to either unit	step 20
does not appear	step 21

20 Go to the common procedure *Monitoring system maintenance* in this document. Complete the procedure and return to this point.

If the critical alarm	Do
remains	step 21
changes	step 35
clears	step 36

21 To query the UEN for indications that have faults, type

>QUERYPM FLT

and press the Enter key.

Example of a MAP response:
PM Audit

22 Record the MAP response.

If the MAP response	Do
is REx Test Aborted	step 23
is Load Corruption	step 24
is Load Failed	step 24
is other than listed here	step 26

23 The UENs C-side PM runs a routine exercise (REx) test. Wait until the REx test for the PM is complete. The REx test for the PM must finish before the REx test for the UEN can begin. If the REx test continues to abort, go to step 26.

24 To busy the UEN, type

>BSY PM

and press the Enter key.

25 To load the UEN from the CC, type

>LOADPM PM CC

and press the Enter key.

If the load	Do
fails	step 32
passes	step 27

26 To busy the UEN, type

>BSY PM

and press the Enter key.

27 To return the UEN to service and switch the load to the standby banks, type

>RTS PM SWLD

and press the Enter key.

If	Do
the UEN does not return to service	Follow the instructions in the MAP response. Go to step 28.
one UEN unit returns to service	step 35
both UEN units return to service	step 36

28 To return the active UEN unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no
is the number (0 to 1) of the UEN unit

If the unit	Do
does not recover and the system generates a card list	step 29
does not recover and the system does not generate a card list	step 34
recovers	step 36

At the equipment frame

29 Replace the first card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Refer to the figure “UEN frame” for help to locate the card. Go to step 30.

PM UEN
critical (continued)

At the MAP terminal

30 To return the UEN unit to service, type

`>RTS UNIT unit_no`

and press the Enter key.

where

unit_no
is the number (0 to 1) of the UEN unit

If the unit	Do
does not return to service, and you did not replace all the cards that have faults on the list	step 31
does not return to service, and you replaced all the cards that have faults on the list	step 34
returns to service	step 36

At the equipment frame

31 Replace the next card on the card list. Refer to the correct procedure in *Card Replacement Procedures*. Refer to the figure "UEN frame" to help locate the card. Go to step 33.

At the MAP terminal

32 To load the UEN unit from the CC, type

`>LOADPM UNIT unit_no CC`

and press the Enter key.

where

unit_no
is the number (0 to 1) of the UEN unit

If the load	Do
passes	step 33
fails	step 34

33 To return the UEN unit to service, type

`>RTS UNIT unit_no`

and press the Enter key.

where

unit_no
is the number (0 to 1) of the UEN unit

If the unit	Do
does not return to service and you did not replace all the cards that have faults on the list	step 31
does not return to service and you replaced all the cards that have faults on the list	step 34
returns to service	step 36

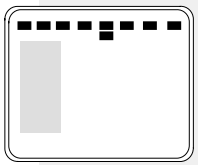
34 For additional help, contact the next level of support.

35 The UEN critical alarm changed to another type of alarm. Refer to the correct procedure in this document to clear the alarm.

36 The procedure is complete.

PM UEN
major

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	Appl
.	.	.	.	**1UEN M**	.	.	.	.	.

Indication

At the MTC level of the MAP display, a UEN (preceded by a number) appears under the PM header of the alarm banner. An M follows the UEN. The UEN indicates a major alarm for a Universal Edge 9000 (UEN). The number that precedes the UEN indicates the number of UENs affected by the alarm. The alarm banner appears at the MTC level of the MAP. The preceding figure shows an alarm banner with an UEN major alarm.

Meaning

The UEN is in-service trouble (ISTb) because of one of the following conditions:

- one unit is system busy and one unit is ISTb
- one unit is system busy and one unit is in-service
- one unit is C-side busy and one unit is ISTb
- one unit is C-side busy and one unit is in-service

Impact

Line cards that are out of service affect call processing. Line cards that are not out of service do not affect call processing.

Common procedures

This procedure refers to “Monitoring system maintenance.”

Do not go to the common procedure until directed to do so by a step in the step action procedure.

Next level of maintenance

Repeat this procedure if it is not successful when you first perform the procedure.

PM UEN
major (continued)

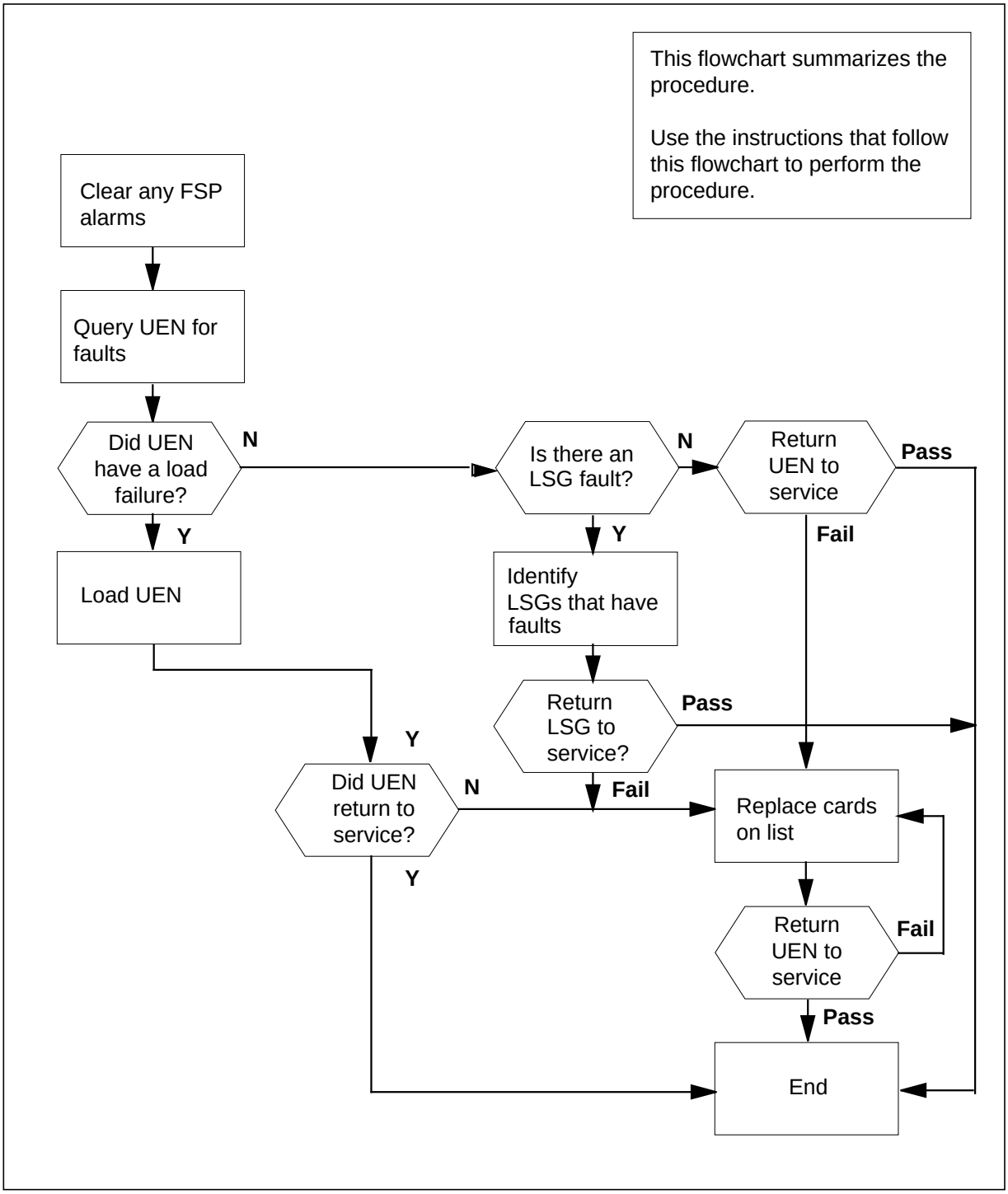
A problem can occur that requires the help of the local maintenance personnel. Gather all important logs, reports, and system information (that is, product type and current software load) for analysis. The related logs, maintenance notes, and system information help make sure that the next level of maintenance and support can find the problem. More detail about logs appears in the *Log Report Reference Manual*.

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to clear the alarm.

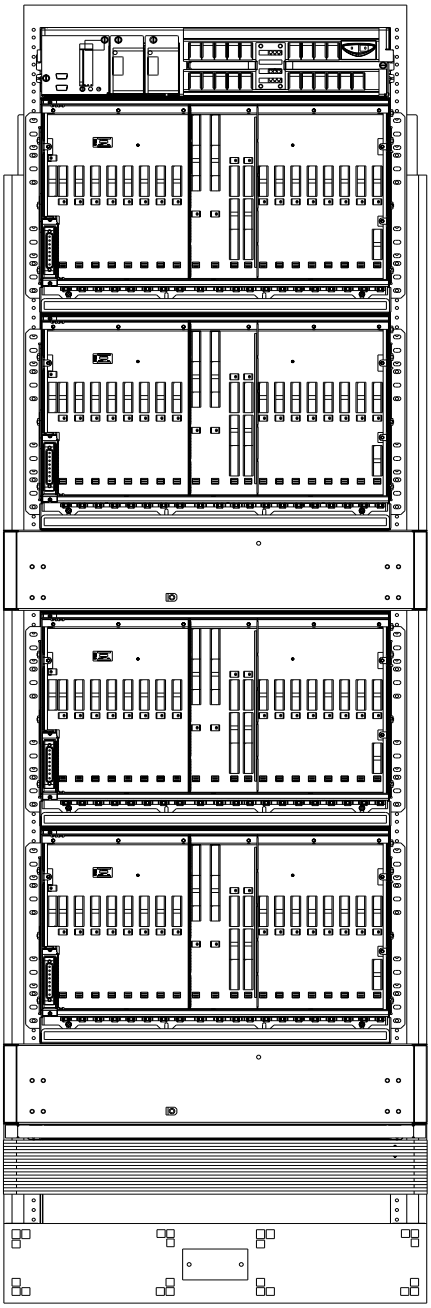
PM UEN
major (continued)

Summary of clearing PM UEN major alarm



PM UEN
major (continued)

UEN frame



NTNY17AA Breaker interface panel (BIP)

NTNP10BA UEN shelf 3

NTNP10BA UEN shelf 2

NTNY18AA Cooling Unit (CU)
and local craft access panel (LCAP)

NTNP10BA UEN shelf 1

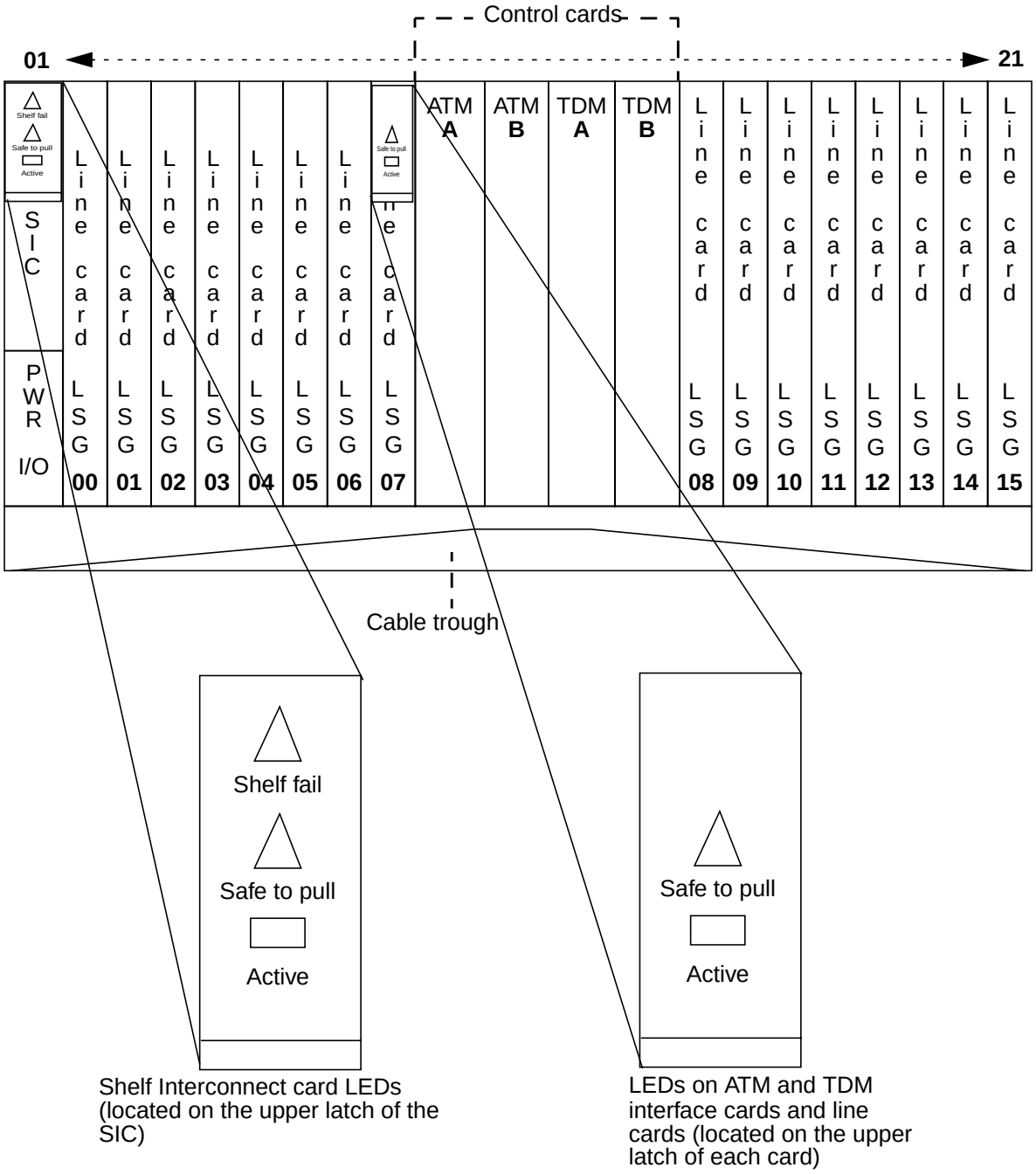
NTNP10BA UEN shelf 0

NTNY18AA CU

NT4K15CA air filter
NT4K13AA drip tray

PM UEN
major (continued)

UE9000 DMS shelf



LSG = line subgroup

PM UEN
major (continued)

Clearing PM UEN major alarm

At the MAP terminal

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

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP response:

```
     SysB      ManB     OffL    CBsy     ISTb     InSv
PM     1         3        5       7        6       12
```

If	Do
an audible alarm rings	step 2
the M indicator at the alarm banner flashes	step 2
neither of the above conditions occur	step 3

2 To silence the alarm, type

>SIL

and press the Enter key.

3 To display all the ISTb UENs, type

>DISP STATE ISTB UEN

and press the Enter key.

Example of a MAP response:
ISTb UEN: HOST 0 0

Note: If multiple UENs are ISTb, select a UEN to work on.

Record the name and number of the ISTb UENs.

4 Check the EXT header of the alarm banner.

If an FSP alarm	Do
is present	step 5
is not present	step 15

5 To locate the FSP alarm, type

>EXT; LIST FSP

and press the Enter key.

Example of a MAP display:
FSPAISD

PM UEN
major (continued)

In this example, the alarm is an FSP alarm on Aisle D.

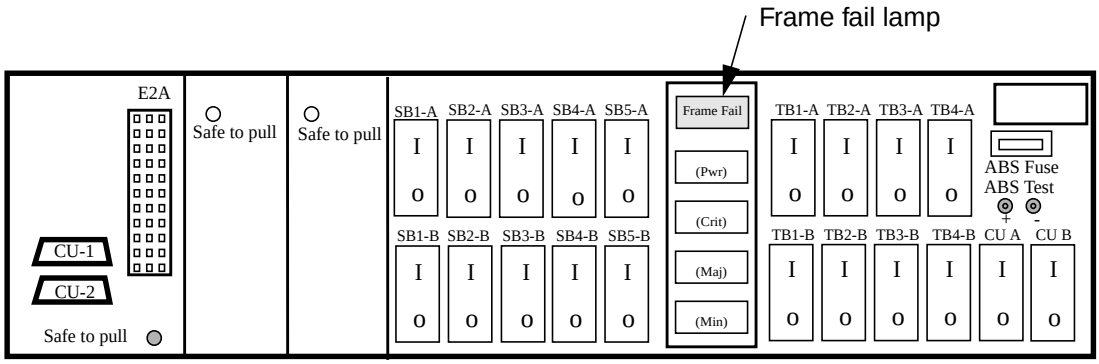
At the equipment aisle

6 Go to the aisle identified in step 5. The end aisle alarm is lit.

At the equipment frame

7 To identify the UEN frame with the FSP alarm, check the Frame fail lamp on the breaker interface panel (BIP) of each frame. The frame with the FSP alarm has a lit Frame fail lamp. The following figure shows a BIP with a lit Frame fail lamp.

Breaker interface panel with a lit Frame fail lamp



8 Identify the UENs in the frame. Refer to the figure “UEN frame” for help.

9 Check the Shelf fail LED on the NTNY23 Shelf interconnect card in the UEN shelf. Refer to the figure “UE9000 DMS shelf” for help in checking the Shelf fail LED.

If an SIC Shelf fail LED	Do
is lit	step 10
is not lit	step 13

10 Note the UEN shelf with the LED light on.

11 To post the in-service trouble UEN and identify the location of this UEN, type

```
>POST UEN site frame_no shelf_no;QUERYPM
```

and press the Enter key.

where

site
is site name of the UEN you recorded in step 3

frame_no
is the number (00 to 511) of the UEN you recorded in step 3

shelf_no
is the shelf number (0, 1, 2, or 3) of the UEN you recorded in step 3

Example of a MAP display:

```
UEN HOST 00 0  ISTb  Links_OOS:  CSide 1 PSide 0
Unit0:    SysB
Unit1:    InSv
                            11  11  11  11  11
Drwr:  01  23  45  67  89  01  23  45  67  89
       ..  --  --  --  --  ..  --  --  --  --
QueryPM
PM Type: UEN Int. No: 42 Status index: 26 Node_No: 137
UEN HOST 00 0 Memory Size – Unit 0: 8M, Unit 1: 8M
Loadnames: LCMINV – UEN014AM ,
Unit0: Act - UEN014AM   Stby - UEN014AM
Unit1: Act - UEN014AM   Stby - UEN014AM
UEN HOST 00 0 is included in the list of LCM types
    scheduled for a REX test.
Last REX test was TUE. 2000/08/18 at 1:08:58; FAILED.
Node Status: {OK, FALSE}
Unit 0 Status: {OK, FALSE}
Unit 1 Status: {OK, FALSE}
Site  Flr  RPos  Bay_id  Shf  Description  Slot  EqPEC
HOST   01   C05  UEE 00   04  UEN 00 0           NY01AA
World Line Card Template(s) in use:
NP50AA KX08AA
Services: NEUTRAL
```

12 Determine if the UEN is the same as the UEN you identified in step 10.

If the UEN	Do
is different	step 13
is the same	step 14

13 Clear the FSP alarm. Perform the correct procedure in this document to clear the alarm. Complete the procedure and return to this step.

14 To busy the inactive UEN unit, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no
is the number (0 to 1) of the inactive UEN unit

Go to step 30.

PM UEN
major (continued)

At the equipment frame

15 To post the UEN, type

`>POST UEN site frame_no shelf_no`

and press the Enter key.

where

site
is site name of the UEN you recorded in step 3

frame_no
is the number (00 to 511) of the UEN you recorded in step 3

shelf_no
is the shelf number of the UEN you recorded in step 3

Example of a MAP display:

```
UEN HOST 01 1  ISTb  Links_OOS:  CSide 1, PSide 0
Unit0:  SysB
Unit1:  InSv
```

If a Mtce flag	Do
appeared next to either unit	step 16
did not appear	step 17

16 Proceed to the common procedure *Monitoring system maintenance* in this document. Complete the procedure and return to this point.

If the major alarm	Do
remains	step 17
changes	step 31
clears	step 33

17 To query the UEN for fault indications, type

`>QUERYPM FLT`

and press the Enter key.

Example of a MAP response:

```
PM Audit
```

18 Record the MAP response.

If the MAP response	Do
is REx Test Aborted	step 19

PM UEN
major (continued)

If the MAP response	Do
is Load Corruption	step 25
is Load Failed	step 25
is LSG Fault (LSG)	step 20
is any type of ringing failure	step 20
is other than listed here	step 27

19 The C-side PM of the UEN also runs an REx test. Wait until the REx test of the PM is complete. The REx test of the PM must finish before the REx test of the UEN can begin. If the REx test continues to abort, go to step 27.

20 Check the MAP display for an LSG that has faults. Letters that appear under the line subgroup numbers that associate with a physical drawer indicate a drawer that has faults.

Example of a MAP display:

```
UEN HOST 00 0  ISTb  Links_OOS:  CSide 0 PSide 0
Unit0:    InSv
Unit1:    ISTb
                            11  11  11
LSG:   01  23  45  67  89  01  23  45
       ..  S. ..  ..  ..  ..  ..  ..
```

21 To busy the line subgroup that has faults, type

>BSY LSG lsg_no

and press the Enter key.

where

lsg_no
is the number of the line subgroup you identified in step 20.

22 To return the line subgroup to service, type

>RTS LSG lsg_no

and press the Enter key.

where

lsg_no
is the number of the line subgroup

If the RTS command	Do
fails and the system generates a card list	step 23
fails and the system does not generate a card list	step 32
passes, the UEN major alarm remains	step 17

PM UEN
major (continued)

If the RTS command	Do
passes, the UEN major alarm remains, and another line subgroup has problems	Go to step 21 and work on the other line subgroup.
passes and the UEN major alarm clears	step 33

At the equipment frame

23 Replace the first or next card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Complete the procedure and go to step 24.

24 To return the line subgroup to service, type

`>RTS LSG lsg_no`

and press the Enter key.

where

lsg_no
is the number of the line subgroup

If the RTS command	Do
fails and you did not replace all the cards on the list	step 23
fails and you replaced all the cards on the list, or the system does not generate a card list	step 32
passes, the UEN major alarm remains, and you worked on all line subgroups with faults	step 17
passes, the UEN major alarm remains, and you did not work on other line subgroups with faults	Go to step 21 and work on another line subgroup.
passes and the UEN major alarm clears	step 33

25 To busy the inactive UEN unit, type

`>BSY UNIT unit_no`

and press the Enter key.

where

unit_no
is the number (0 to 1) of the inactive UEN unit

26 To load the inactive UEN unit, type

`>LOADPM UNIT unit_no`

and press the Enter key.

where

unit_no
is the number (0 to 1) of the inactive UEN unit

If the load	Do
fails, and the system generates a card list	step 29
fails, and the system does not generate a card list	step 32
passes	step 28

27 To busy the inactive UEN unit, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no
is the number (0 to 1) of the inactive UEN unit

28 To return the inactive UEN unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no
is the number (0 to 1) of the inactive UEN unit

If the RTS command	Do
fails and the system generates a card list	step 29
fails and the system does not generate a card list	step 32
passes and the UEN major alarm clears	step 33

At the equipment frame

29 Replace the first or next card on the list. Refer to the correct procedure in *Card Replacement Procedures*. For help, refer to figure “UEN frame” at the start of this module.

At the MAP terminal

30 To return the inactive UEN unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

PM UEN
major (end)

unit_no
is the number (0 to 1) of the inactive UEN unit

If the RTS command	Do
fails, the system generates a card list, and you did not replace all the cards on the list of cards that have faults	step 29
fails, and the system generates a card list, and you replaced all the cards on the list of cards that have faults	step 32
fails and the system did not generate a card list	step 32
passes and the UEN major alarm clears	step 33

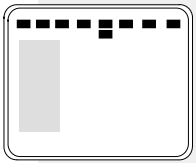
31 The UEN major alarm changed to another type of alarm. Refer to the correct procedure to clear the alarm. Go to step 33.

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

33 The procedure is complete.

PM UEN minor

Alarm display



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

Indication

At the MTC level of the MAP terminal, UEN appears under the PM header of the alarm banner. The UEN indicates a minor alarm for a Universal Edge 9000 (UEN). The number that precedes UEN indicates the number of UENs that the alarm affects. The preceding figure shows an alarm banner with an UEN minor alarm.

Meaning

The UEN is in-service trouble (ISTb) as a result of one of the following conditions:

- both units are ISTb.
- one unit is ISTb and one unit is in service.
- one unit is ISTb and one unit is manual busy.
- one unit is in service and one unit is manual busy.
- both units are in service with some C-side links out of service.

Impact

The alarm does not affect service.

Common procedures

This procedure refers to the common procedures that follow:

- “Monitoring system maintenance”
- “Clearing PM C-side faults”

Do not go to the common procedure until directed to do so in a step in the step action procedure.

Next level of maintenance

Repeat this procedure if it is not successful when you first perform the procedure.

PM UEN
minor (continued)

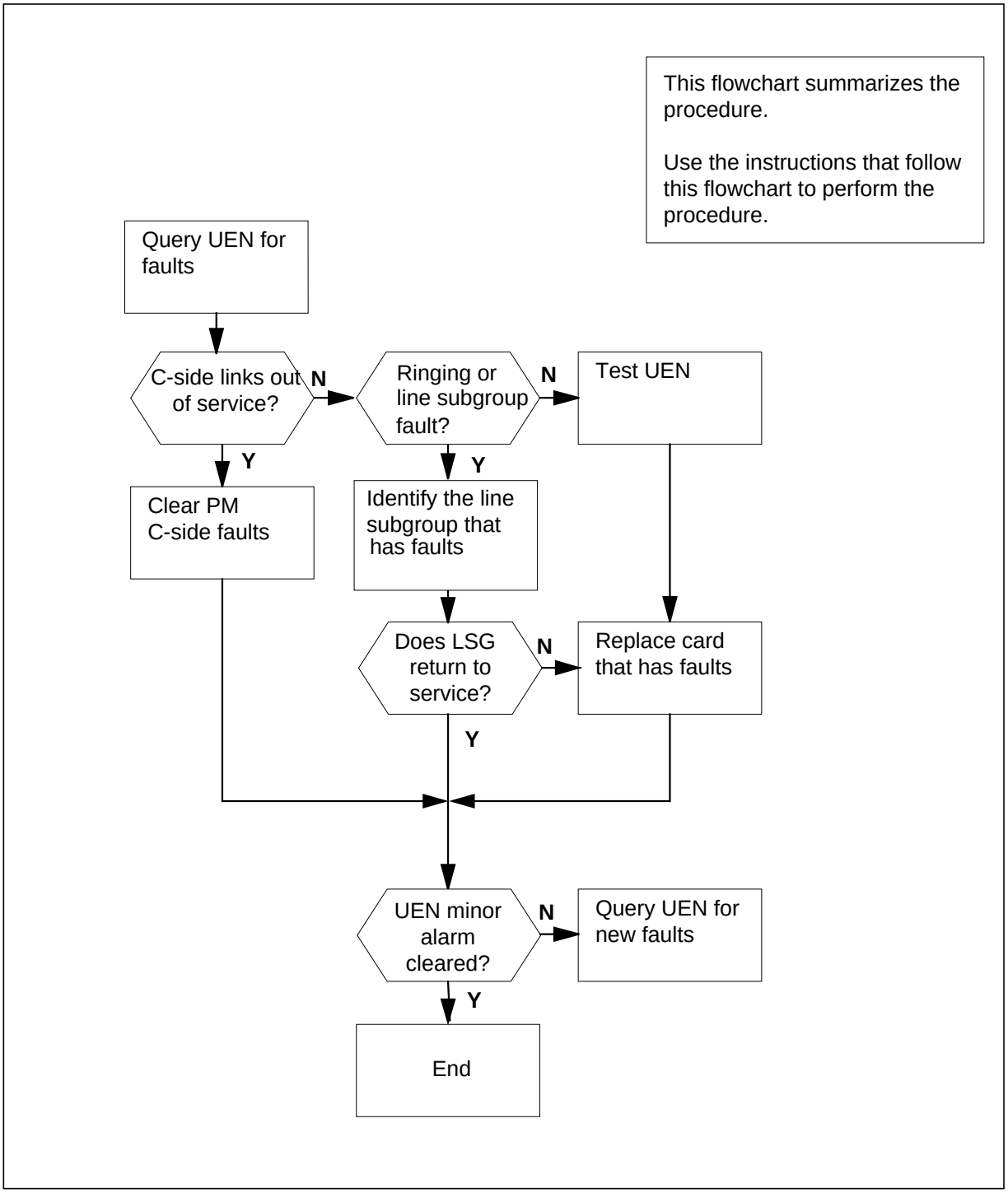
A problem can occur that requires the help of the local maintenance personnel. Gather all important logs, reports, and system information (that is, product type and current software load) for analysis. The related logs, maintenance notes, and system information help make sure that the next level of maintenance and support can find the problem. More detail about logs appears in the *Log Report Reference Manual*.

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to clear the alarm.

PM UEN
minor (continued)

Summary of clearing PM UEN alarm



PM UEN
minor (continued)

Clearing PM UEN minor alarm

At the MAP display

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

`>MAPCI; MTC; PM`

and press the Enter key.

Example MAP response:

```
        SysB   ManB   OffL   CBsy   ISTb   InSv
PM         1      3      5      7      6     12
```

If an audible alarm	Do
rings	step 2
does not ring	step 3

2 To silence the alarm, type

`>SIL`

and press the Enter key.

3 To display all the ISTb UENs, type

`>DISP STATE ISTB UEN`

and press the Enter key.

Example MAP response:
ISTb UEN: HOST 0 0

Note: If multiple UENs are `ISTb`, select a UEN on which to work. Repeat this procedure for each UEN that is `ISTb`.

Record the name and number of the ISTb UENs.

4 To post the UEN, type

`>POST UEN site frame_no shelf_no`

and press the Enter key.

where

site
is site name of the UEN that you recorded in step 3

frame_no
is the number (00 to 511) of the UEN that you recorded in step 3

shelf_no
is the shelf number (0, 1, 2, or 3) of the UEN that you recorded in step 3

Example of a MAP display:

PM UEN
minor (continued)

```
UEN HOST 00 0  ISTb  Links_OOS:  CSide 1 PSide 0
Unit0:    ISTb
Unit1:    InSv
                            11  11  11
LSG:   01  23  45  67  89  01  23  45
       ..  --  --  --  --  ..  --  --
```

If a Mtce flag	Do
appears next to either unit	step 5
does not appear	step 6

5 Go to the common procedure “Monitoring system maintenance” in this document. Complete the procedure and return to this point.

If the UEN minor alarm	Do
remains	step 6
changes	step 19
clears	step 21

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

>QUERYPM FLT

and press the Enter key.

Note: Multiple causes are possible for the in-service trouble condition of an UEN. The UEN and the UEN units remain ISTb until all the in-service trouble conditions clear.

If the MAP response	Do
is any type of ringing fault	step 9
is `REx Test Aborted`	step 7
is `C-side links out of service`	step 8
is `LSG Fault`	step 9
is `Diagnostic Failed`	step 15
is other than listed here	step 15

7 The C-side PM of the UEN runs a routine exercise (REx) test. Wait until the REx test for the PM is complete. The REx test for the PM must finish before the REx test for the UEN can start. If the REx test continues to abort, go to step 20.

PM UEN
minor (continued)

8 Go to the common procedure “Clearing PM C-side faults” in this document. Complete the procedure and return to this point.

If the UEN minor alarm	Do
continues	step 6
clears	step 21

9 Check the MAP display for an LSG that has faults. Line subgroup numbers associate with the line card slot numbers in the UEN shelf. Letters that appear under the line subgroup numbers indicate a line card that has faults.

Example of a MAP display:

```
UEN HOST 00 0  ISTb  Links_OOS:  CSide 0 PSide 0
Unit0:    InSv
Unit1:    ISTb
                            11  11  11
LSG:   01  23  45  67  89  01  23  45
       ..  I.  ..  ..  ..  ..  ..  ..
```

10 To busy an LSG that has faults, type

>BSY LSG lsg_no

and press the Enter key.

where

lsg_no
is the number of the LSG that you identified in step 9

Example of a MAP response:

```
UEN HOST 00 0 LSG 2 will be taken out of service.  Please confirm
(″YES″ or ″NO″):
```

11 To confirm the command, type

>YES

and press the Enter key.

12 To return the line subgroup to service, type

>RTS LSG lsg_no

and press the Enter key.

where

lsg_no
is the number of the line subgroup

If the RTS command	Do
fails and the system generates a card list	step 13

PM UEN
minor (continued)

If the RTS command	Do
fails and the system does not generate a card list	step 20
passes, the UEN minor alarm remains, and you worked on the line subgroup with faults	step 6
passes, the UEN minor alarm remains, and you did not work on other line subgroups with faults	Go to step 10 and work on another line subgroup.
passes and the UEN minor alarm clears	step 21

At the equipment frame

13 Replace the first or next card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Complete the procedure and go to step 14.

At the MAP terminal

14 To return the line subgroup to service, type

`>RTS LSG lsg_no`

and press the Enter key.

where

lsg_no
is the number of the line subgroup

If the RTS command	Do
fails and you did not replace all the cards on the list	step 13
fails and you replaced all the cards on the list, or the system did not generate a card list	step 20
passes, the UEN minor alarm remains, and you worked on the line subgroup with faults	step 6
passes, the UEN minor alarm remains, and you did not work on other line subgroups with faults	Go to step 10 and work on another line subgroup
passes and the UEN minor alarm clears	step 21

15 To test the UEN unit, type

`>TST UNIT unit_no`

and press the Enter key.

where

PM UEN
minor (end)

unit_no
is the number (0 to 1) of the UEN unit

If the TST command	Do
fails, and the system generates a card list	step 16
fails, and the system does not generate a card list	step 20
passes and the alarm clears	step 21

16 To busy the UEN unit for the alarm, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no
is the number (0 to 1) of the UEN unit

17 Replace the first or next card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Complete the procedure and go to step 18.

18 To return the UEN unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no
is the number (0 to 1) of the UEN unit

If the RTS command	Do
fails, and you did not replace all the cards on the list	step 17
fails, and you replaced all the cards on the list	step 20
passes	step 21

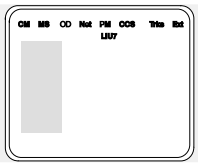
19 The UEN minor alarm changed to another type of alarm. Refer to the correct procedure in this document to clear the alarm. Complete the procedure and go to step 21.

20 You need additional help to clear this alarm. Contact the next level of maintenance. Describe in detail the steps you performed to clear this alarm.

21 The procedure is complete. If additional alarms appear, proceed to the correct alarm clearing procedure.

PM VLCM critical

Alarm display



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

Indication

Use this procedure to recover service in a virtual line concentrating module (VLCM) when both units of the VLCM are out of service. This condition always produces a central-side busy (CBsy) or system-busy (SysB) alarm.

The VLCM alarm appears under the PM header in the MAP subsystem display. This alarm indicates an alarm condition exists in the VLCM. The number preceding the PM type of VLCM indicates the number of VLCMs with alarms. The *C* appearing under the alarm indicates the alarm class is critical.

Meaning

The VLCM is either system busy or central-side busy. A VLCM is system busy if

- both units are system busy
- one unit is system busy and the other unit is manually busy

A VLCM is central-side busy when both units of the VLCM are central-side busy.

Impact

Loss of call processing occurs when a VLCM is system busy or central-side busy.

Common procedures

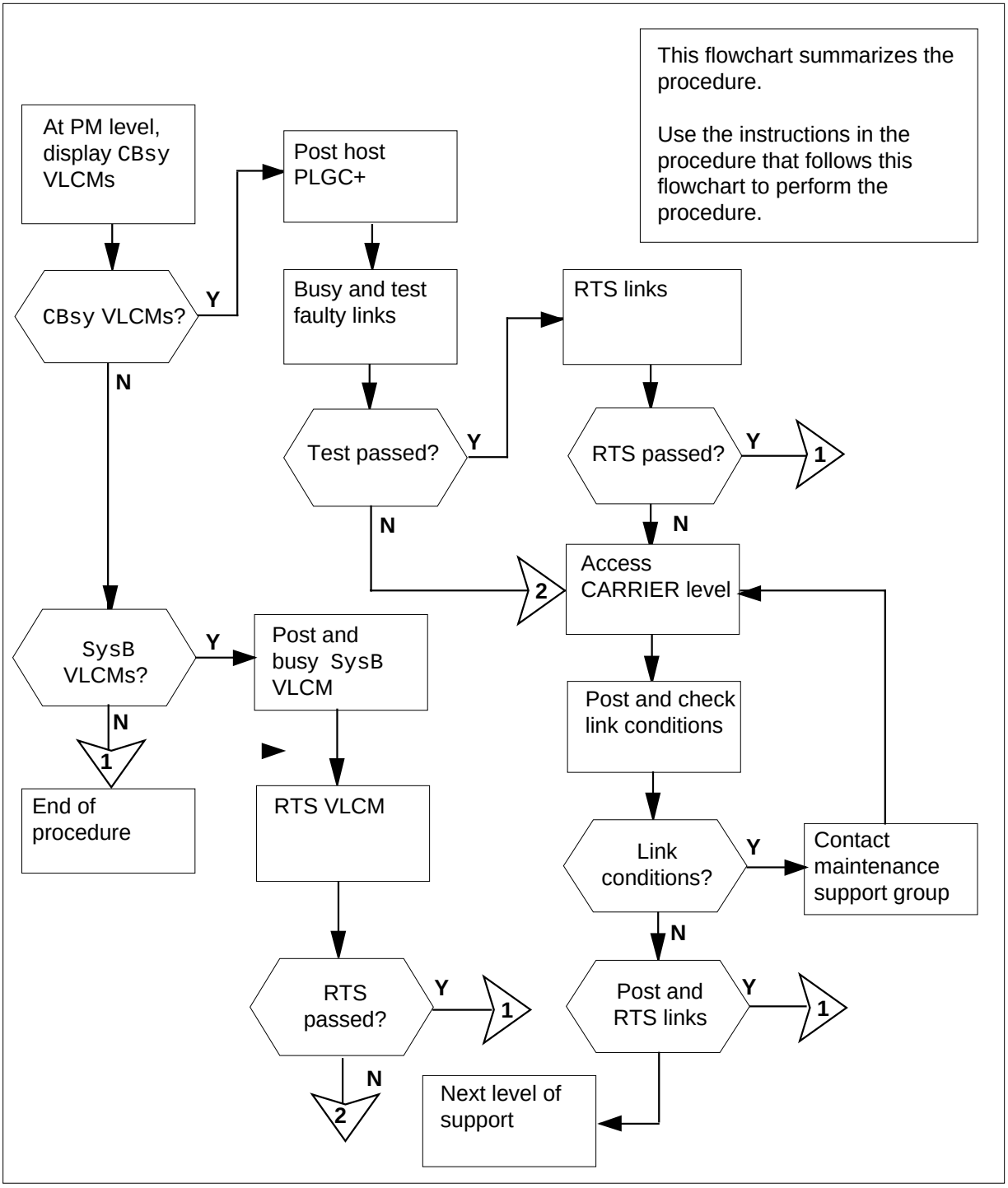
Not applicable

Action

The following flowchart is only a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

PM VLCM
critical (continued)

Summary of clearing a PM VLCM alarm



PM VLCM
critical (continued)

Clearing a critical PM VLCM alarm

At MAP display

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

```
>MAPCI; MTC; PM
```

and press the Enter key.

2 To silence the alarm, type

```
>SIL
```

and press the Enter key.

3 To identify the defective VLCMs, type

```
>DISP STATE CBSY VLCM
```

and press the Enter key.

If the response indicates	Do
No CBsy VLCMs	step 17
CBsy VLCMs	step 4

4 To post the VLCM with the alarm condition, type

```
>POST VLCM CBSY
```

and press the Enter key.

Note: Record the name and number of the posted VLCM.

5 To identify the central side links to the host line PCM30 line group controller PLUS (PLGC+), type

```
>TRNSL C
```

and press the Enter key.

Example of a MAP display
Link 0: PLGC 1 2; Cap MS; Status: Sysb ;MsgCond: CLS
Link 1: PLGC 1 6; Cap MS; Status: Sysb ;MsgCond: CLS

Note: Record information for the links that have a status other than OK.

6 To post the host PLGC+, type

```
>POST PLGC plgc_no
```

and press the Enter key.

where

plgc_no
is the number of the PLGC+ (0 to 255) identified in step 5

7 To display the peripheral side links of the PLGC+, type

```
>TRNSL P
```

and press the Enter key.

PM VLCM
critical (continued)

Example of a MAP display
Link 2: VLCM REM1 00 0 0; Cap MS; Status: SysB; MsgCond: CLS
Link 6: VLCM REM1 00 0 1; Cap MS; Status: Sysb; MsgCond: CLS

Note: Record information for the links that have a status other than OK.

8 To busy the defective link, type

>BSY LINK link_no

and press the Enter key.

where

link_no
is the number of the defective peripheral side links identified in step 7

9 To test the busied link, type

>TST LINK link_no

and press the Enter key.

where

link_no
is the number of a defective peripheral side links busied in step 8

If the test	Do
passed	step 10
failed	step 16

10 To return the link to service, type

>RTS LINK link_no

and press the Enter key.

where

link_no
is the number of the defective peripheral side links busied in step 8

Note: Repeat this step for each link tested.

If RTS	Do
passed and no other links are SysB	step 11
passed but other links are SysB	step 8
failed	step 18

11 To identify the defective VLCM, type

>DISP STATE SYSB VLCM

PM VLCM
critical (continued)

and press the Enter key.

If response indicates	Do
No SysB VLCMs	step 20
SysB VLCMs	step 12

12 To post the VLCM with the alarm condition identified in step 11, type

```
>POST VLCM SYSB
```

and press the Enter key.

13 To busy the VLCM units, type

```
>BSY PM
```

and press the Enter key.

14 To return the PM to service (RTS), type

```
>RTS PM
```

and press the Enter key.

If RTS	Do
passed	step 20
failed	step 15

15 Check for stable links. To find and record the link numbers for the VLCM, type

```
>TRNSL C
```

and press the Enter key.

Example of a MAP display
```
Link 0;  PLGC 10;Cap  MS;Status:P,;MsgCon;CLS
Link 1;  PLGC 12;Cap  MS;Status:P,;MsgCon;CLS
Link 2;  PLGC 13;Cap   S;Status:P,
Link 3;  PLGC 14;Cap   S;Status:P,
```

16 To access the CARRIER level of the MAP terminal, type

```
>TRKS;CARRIER
```

and press the Enter key.

17 To post the host PLGC+ links and check link conditions for slip and frame errors, type

```
>POST PLGC plgc_no link_no
```

and press the Enter key.

where

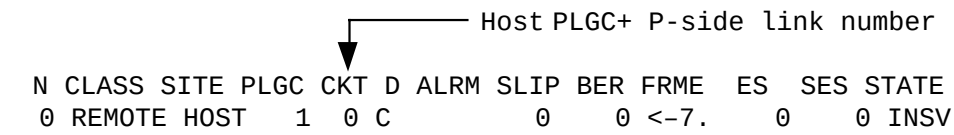
plgc_no
is the number of the PLGC+ (0 to 255)

PM VLCM
critical (end)

link_no
is the number of the link associated with the host XPM (see step display)

Note: Repeat the POST command for each link provisioned for the VLCM.

Example of a MAP display



Note: This display shows carrier facilities from the host PLGC+ to the VLCM. Use the Detail REM option to check the carrier facilities from the remote site to the host PLGC+.

If the link conditions show	Do
a high number of SLIP and FRME	step 18
a very low number of SLIP and FRME	step 18
the links are working correctly	step 19

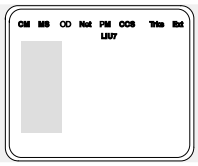
18 Contact your carrier maintenance support group for maintenance on the open or unstable links. When the carriers are restored, go to step 8.

19 Contact your next level of support.

20 You have completed this procedure.

PM VLCM minor

Alarm display



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

Indication

A virtual line concentrating module (VLCM) preceded by a number under the PM header of the alarm banner indicates a VLCM minor alarm. The number preceding the VLCM indicates the number of VLCMs affected by the alarm. The alarm banner is at the MTC level of the MAP display. The preceding figure shows an alarm banner with a VLCM minor alarm.

Meaning

The VLCM is in-service trouble (ISTb) because one of the following conditions exists:

- both units are ISTb
- one unit is ISTb and one unit is in-service (CBSy)
- one unit is ISTb and one unit is system busy (SysB)
- one unit is in-service and one unit is SysB
- both units are in-service with some C-side links out of service

Impact

Service is not affected.

Common procedures

The following common procedures are referenced:

- “Monitoring system maintenance"
- “Clearing PM C-side faults"

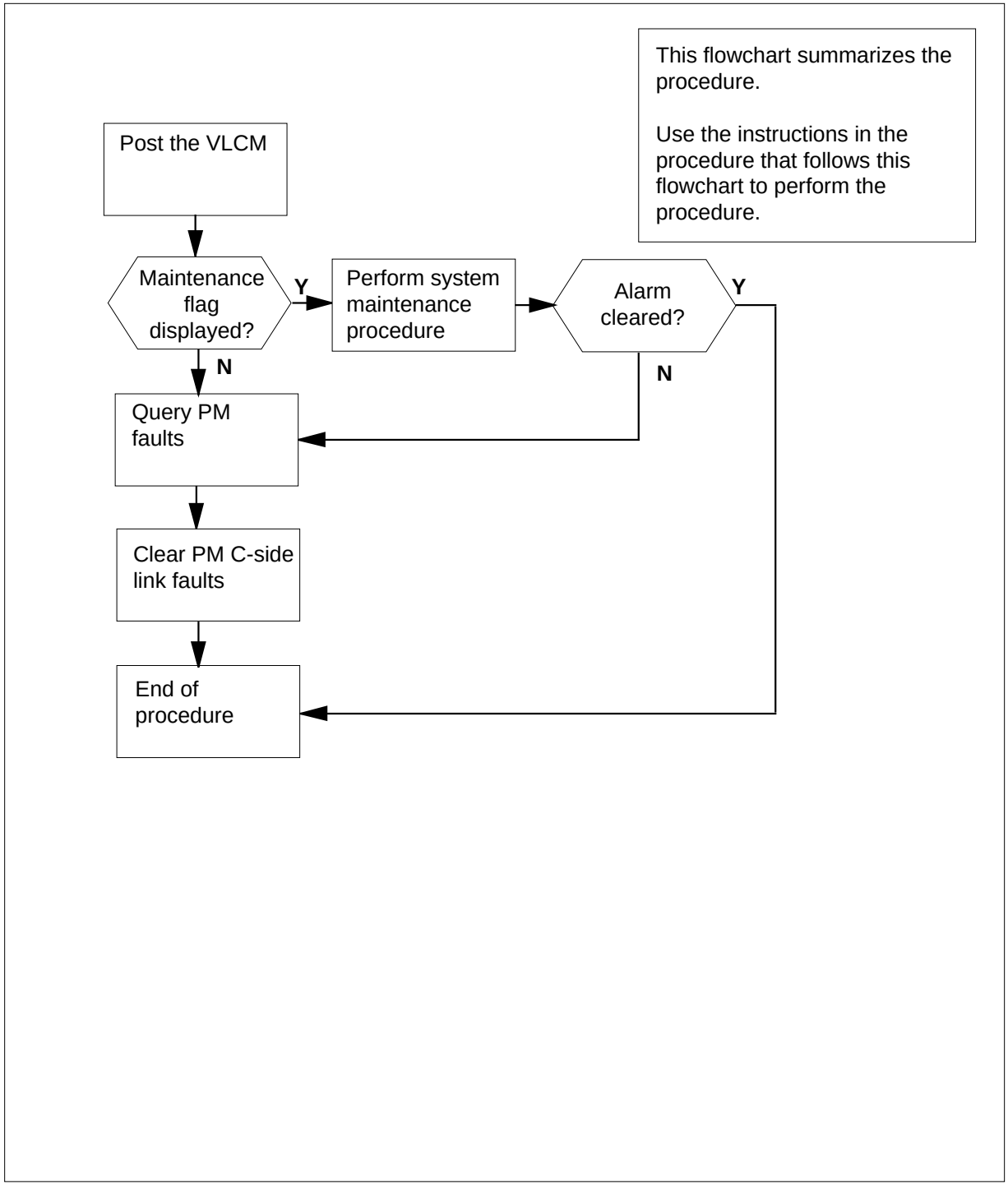
Do not go to the common procedure unless directed to do so in the step-action procedure.

Action

The following flowchart is only a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

PM VLCM
minor (continued)

Summary of clearing a PM VLCM alarm



PM VLCM
minor (continued)

How to clear a PM VLCM minor alarm

At the MAP display

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

```
>MAPCI; MTC; PM
```

and press the Enter key.

Example of a MAP response:

```
    SysB    ManB   OffL   CBsy   ISTb   InSv
PM     1       3      5      7      6     12
VLCM   0       0      0      0      1      0
```

If an audible alarm is	Do
ringing	step 2
not ringing	step 3

2 To silence the alarm, type

```
>SIL
```

and press the Enter key.

3 To display all the ISTb VLCMs, type

```
>DISP STATE ISTB VLCM
```

and press the Enter key.

Example MAP response:

```
ISTb VLCM :  0
```

Note 1: Record the name and number of the ISTb VLCMs.

Note 2: If multiple VLCMs are `ISTb`, select a VLCM to work on. Repeat this procedure for each VLCM that is `ISTb`.

4 To post the VLCM, type

```
>POST VLCM site vlcm
```

and press the Enter key.

where

site
is the site name of the VLCM (alphanumeric)

vlcm
is the number of the VLCM

Example of a MAP display

```
VLCM  REM1  00  0  ISTb Links_OOS:  CSide  1  PSide  0
Unit0:      ISTb
Unit1:      InSv
                11  11 11  11  11
```

PM VLCM
minor (end)

Drwr: 01 23 45 67 89 01 23 45 67 89 Stby 1 Insv .. -- -- -- -- -- -- -- -- -- --

If a Mtce flag is	Do
displayed next to either unit	step 5
not displayed	step 7

5 Go to the common procedure “Monitoring system maintenance" in the document. After the maintenance procedure is completed, return to this step in the procedure.

6 Refer to the following table to determine the next step in clearing the alarm.

If the VLCM minor alarm	Do
did not change	step 7
changed	step 9
cleared	step 10

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

```
>QUERYPM FLT
```

and press the Enter key.

Note: The VLCM and its unit remain in-service trouble until all the in-service trouble conditions are cleared.

Example of a MAP display
C-side links are out of service

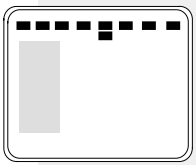
8 Go to the common procedure “Clearing PM C-side faults" in this document. After the clearing procedure is completed, return to this step.

9 The VLCM alarm changed to another type of alarm. Refer to the appropriate procedure in this document to clear the alarm, and return to this step.

10 You completed the procedure.

PM VPU critical

Alarm display



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

Indication

At the MTC level of the MAP display, VPU (preceded by a number) appears under the PM subsystem header of the alarm banner. The VPU indicates a critical alarm for the voice processor unit (VPU).

Meaning

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

Result

The system busy VPU reduces the service provided by an application like Automated Directory Assistance Service (ADAS) or DMS-100 Mail.

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

Common procedures

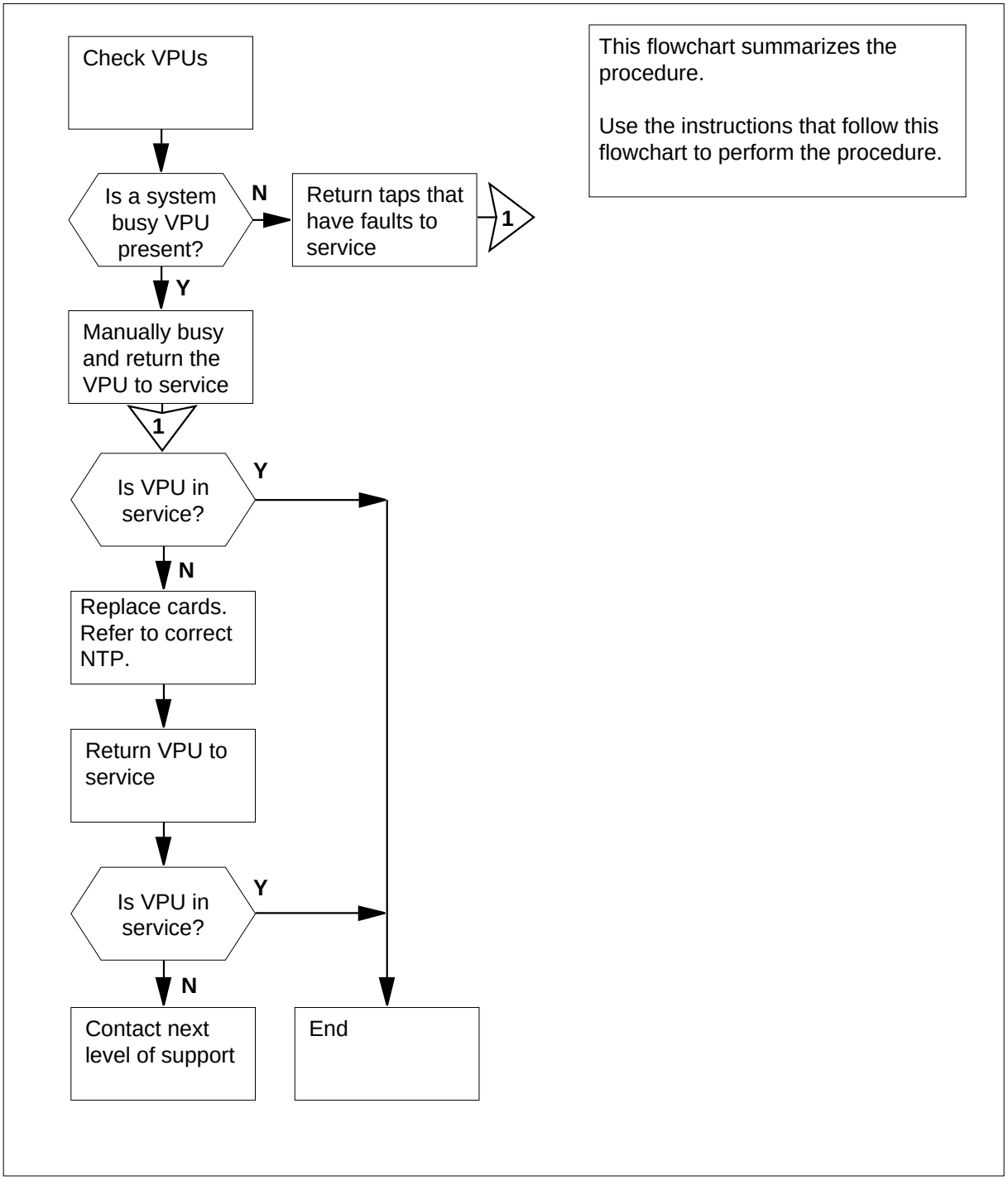
There are no common procedures.

Action

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

PM VPU
critical (continued)

Summary of clearing a PM VPU critical alarm



PM VPU
critical (continued)

Clearing a PM VPU critical alarm

At the MAP terminal

1 Check the MAP alarm banner of the MAP display to confirm that all NIU alarms cleared.

If all NIU alarms	Do
cleared	step 3
did not clear	step 2

2 Go to the correct NIU alarm clearing procedure in this document. Complete the procedure and return to this point.

If the VPU critical alarm	Do
cleared	step 118
did not clear	step 3

3 To access the PM level of the MAP display, type

`>MAPCI;MTC;PM`

and press the Enter key.

Example of a MAP display:

```
    SysB    ManB    OffL    CBsy    ISTb    InSv
PM  1       1       1       3       2       12
```

4 To display all system busy VPUs, type

`>DISP STATE SYSB VPU`

and press the Enter key.

5 Determine if a system busy VPU is present.

If system busy VPUs	Do
are present	step 6
are not present	step 28

6 Record the number of the VPUs.

7 To post the system busy VPU, type

`>POST VPU vpu_no`

and press the Enter key.

PM VPU
critical (continued)

where

vpu_no
is the number of the VPU (0 to 179)

Example of a MAP display:

```
VPU   1 SysB
```

8 Determine the state of the posted VPU.

If the posted VPU	Do
is SysB (NA)	step 33
is SysB	step 9

9 The VPU has a problem. Wait 15 min while the system tries to clear the fault.

If the state of the VPU	Do
changes from SysB to InSv	step 118
does not change	step 10

10 To force the VPU to busy, type

>BSYFORCE

and press the Enter key.

11 To test the VPU, type

>TST

and press the Enter key.

If the TST command	Do
passed	step 18
failed, and the system did not generate a card list	step 12
failed, and the system generated a card list	step 13

12 To set the VPU again, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 18

PM VPU
critical (continued)

If the PMRESET command	Do
failed, and the system did not generate a card list	step 17
failed, and the system generated a card list	step 13

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

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

At the MAP terminal

15 To manually busy the VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

If the BSY command	Do
passed	step 16
failed	step 117

16 To set the VPU again, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 18
failed	step 17

17 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 18

PM VPU
critical (continued)

If the LOADPM command	Do
failed, and the system generated a card list	step 19
failed, and the system did not generate a card list	step 93

18 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 118
failed	step 93

19 Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.

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

At the MAP terminal

21 To manually busy the VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

22 To set the VPU again, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 27
failed	step 23

23 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 27
failed, and you have not replaced all cards on the list that you recorded at step 19	step 24
failed, and you replaced all cards on the list that you recorded at step 19	step 93

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

At the MAP terminal

25 To manually busy the VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

26 Go to step 22.

27 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 118
failed	step 93

28 An in-service trouble not accessible VPU can generate the alarm. To post the in-service trouble VPUs, type

>POST VPU ISTB

and press the Enter key.

Example of a MAP display:

```
VPU   1 ISTb (NA)
```

If the posted VPU	Do
`is ISTb (NA)`	step 32

PM VPU
critical (continued)

If the posted VPU	Do
is ISTb	step 29

29 To scroll to the next in-service trouble VPU in the posted set, type

>NEXT

and press the Enter key.

30 Determine if the posted VPU is in-service trouble not accessible.

If the posted VPU	Do
is ISTb (NA)	step 32
is ISTb	step 31

31 Determine if you reached the end of the posted set.

If you	Do
did not reach the end of the posted set	step 29
reached the end of the posted set	step 117

32 To determine the LIM that associates with the in-service trouble not accessible VPU, type

>QUERYPM

and press the Enter key.

Example of a MAP display:

```
Location: LIM 0  Shelf:1  Slot:12  FTA:425A 1000
PM Load : Default:VPX35CV  Running:VPx36BX
Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA
Reserved : Service:ADAS Options: AUDIO: PROALF
Trouble: Loadname Mismatch
          FBus      Message             CBus
     LIM 0     Tap 11         Channel   Audits    NIU 1     Port 10
Unit 0:   ISTb  .              Open      ON   ISTb InSv
Unit 1:   ISTb  .              Open      ON   ISTb InSv
```

Go to step 34.

33 To determine the LIM that associates with the system busy not accessible VPU, type

>QUERYPM

and press the Enter key.

Example of a MAP display:

PM VPU
critical (continued)

```
Location: LIM 0  Shelf:1  Slot:12  FTA:425A 1000
PM Load : Default:VPX35CV  Running:VPx36BX
Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA
Reserved : Service:ADAS Options: AUDIO: PROALF
Trouble: Use QueryPM FLT to list trouble conditions
          FBus      Message                  CBus
     LIM 0     Tap 11         Channel   Audits    NIU 1     Port 10
Unit 0:   InSv  .              Open ON   InSv OOS
Unit 1:   InSv  .              Open ON   InSv OOS
```

34 Record the number of the VPU, the number of the LIM for the VPU, and the number of the F-bus tap.

Note: The VPU number appears on the right side of the VPU header. The LIM number appears on the right side of the LIM header.

35 To post the LIM for the VPU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 17)

Example of a MAP display:

```
LIM 1 InSv
        Links_OOS   Taps_OOS
Unit0: InSv     .           1
Unit1: InSv     .           1
```

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

>FBUS

and press the Enter key.

Example of a MAP display:

```
        Tap:    0     4     8     12    16    20
FBus0: InSv     .-S-  .-.-  .-.-  .-.-  I.-.  .--.
FBus1: InSv     .-S-  .-.-  .-.-  .-.-  I.-.  .--.
```

37 Determine the state of the LIM units and both F-buses (0 and 1).

Note: Make sure that each LIM unit is in service or in-service trouble. Make sure that each F-bus is in service or in-service trouble.

If the state of the LIM and both F-buses	Do
is InSv	step 40
is other than listed here	step 38

PM VPU
critical (continued)

38 An LIM or LIMF alarm is present. Perform the correct alarm clearing procedure in this document. Complete the procedure and return to this point.

39 Determine if the VPU critical alarm cleared.

If the VPU critical alarm	Do
cleared	step 118
did not clear	step 3

40 Determine the state of the F-bus taps that associates with the VPU.

Note: The tap number that you recorded in step 34 applies to both F-buses.

If	Do
both F-bus taps are M	step 43
both F-bus taps are S	step 42
one F-bus tap is M and the other F-bus tap is S	step 41

41 Work on the manual-busy F-bus tap first.

Go to step 44.

42 To force the F-bus tap that associates with the VPU to busy, type

>BSY FBUS fbus_no tap_no FORCE

and press the Enter key.

where

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

tap_no
is the number of the tap (0 to 35)

Go to step 45.

43 Choose one of the manual-busy taps on the F-bus 0 or 1 to work on.

44 Consult office records or operating company personnel. Determine the reason that the tap is manual-busy.

When you have permission, continue this procedure.

45 To return the F-bus tap for the VPU to service, type

>RTS FBUS fbus_no tap_no FORCE

and press the Enter key.

where

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

PM VPU
critical (continued)

tap_no
is the number of the tap (0 to 35)

If the RTS command	Do
passed	step 81
failed, and the system generated a card list, and both VPU taps are out of service	step 46
failed, and the system did not generate a card list	step 81
failed, with the response `Return to Service failed - local maintenance not accessible`	step 81

46 Record the location, description, slot number, PEC, and PEC suffix of each card on the list.

47 Determine the state of the F-bus taps for the VPU.

If	Do
both VPU taps are `M`	step 48
at least one tap is S	step 69

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

At the MAP terminal

49 To manually busy the offline VPU, type

`>BSY VPU vpu_no`

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

50 To post the LIM for the VPU, type

`>POST LIM lim_no`

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 17)

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

`>FBUS`

and press the Enter key.

PM VPU
critical (continued)

52 To return the first F-bus tap that associates with the VPU to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

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

tap_no
is the number of the tap (0 to 35)

If the RTS command	Do
passed	step 58
failed, and you have not replaced all cards on the list	step 53
failed, and you replaced all cards on the list	step 93

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

At the MAP terminal

54 To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

55 To post the LIM that associates with the VPU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 17)

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

>FBUS

and press the Enter key.

57 Go to step 52.

58 To return the second F-bus tap for the VPU to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

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

tap_no
is the number of the tap (0 to 35)

If the RTS command	Do
passed	step 59
failed	step 93

59 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

60 To post the VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

61 To set the VPU again, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 66
failed	step 62

62 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 66
failed, and the system generated a card list	step 63
failed, and you have not replaced all cards on the list	step 67
failed, and you replaced all cards on the list	step 93

PM VPU
critical (continued)

63 Record the location, description, slot number, PEC, and PEC suffix of each card on the list.

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

At the MAP terminal

65 To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

Go to step 61.

66 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 118
failed	step 117

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

68 To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

Go to step 61.

69 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

70 To post the VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

PM VPU
critical (continued)

71 To manually busy the VPU, type

>BSY

and press the Enter key.

If the BSY command	Do
passed	step 73
failed	step 72

72 To force the VPU to busy, type

>BSYFORCE

and press the Enter key.

73 Replace the first card on the list that you recorded at step 46. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

At the MAP terminal

74 To manually busy the VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

If the BSY command	Do
passed	step 75
failed	step 117

75 To set the VPU again, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 80
failed	step 76

76 To load the VPU, type

>LOADPM

PM VPU
critical (continued)

and press the Enter key.

If the LOADPM command	Do
passed	step 80
failed, and you have not replaced all cards on the list that you recorded at step 46	step 77
failed, and you replaced all cards on the list that you recorded at step 46	step 93

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

At the MAP terminal

78 To manually busy the VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

79 Go to step 75.

80 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 118
failed	step 93

81 Determine if you already worked on the other VPU tap.

If you	Do
already worked on the other VPU tap	step 90
did not work on the other VPU tap	step 82

PM VPU
critical (continued)

82 Determine the state of the second VPU tap.

If the state of the second VPU tap	Do
is M	step 84
is S	step 83

83 To force one of the system busy taps for the VPU to busy, type

`>BSY FBUS fbus_no tap_no FORCE`

and press the Enter key.

where

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

tap_no
is the number of the tap (0 to 35)

84 To return the F-bus tap for the VPU to service, type

`>RTS FBUS fbus_no tap_no`

and press the Enter key.

where

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

tap_no
is the number of the tap (0 to 35)

If the RTS command	Do
passed	step 85
failed, and the system generated a card list	step 46
failed, and the system did not generate a card list	step 93
failed, with the response `Return to service failed -local maintenance not accessible`	step 93

85 Determine if one VPU critical alarm cleared.

If one VPU critical alarm	Do
cleared	step 118
did not clear and you are working on an `ISTb (NA) VPU`	step 90

PM VPU
critical (continued)

If one VPU critical alarm	Do
did not clear and you are working on a SysB (NA) VPU	step 86

86 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

87 To post the system busy not accessible VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

88 Determine the state of the VPU.

If the state of the VPU	Do
changed from SysB (NA) to SysB	step 89
did not change	step 92

89 You are working on a system busy VPU.

Go to step 10.

90 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

91 To post the VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

92 To manually force the VPU to busy, type

>BSYFORCE

and press the Enter key.

PM VPU
critical (continued)

93 Determine if you unseated then reseated the NTEX22, NTMX97, and NTMX99 VPU cards during this procedure.

If you	Do
unseated then reseated the VPU cards in this procedure	step 117
have not unseated then reseated the VPU cards in this procedure	step 94

94 To offline the VPU, type

>OFFL

and press the Enter key.

95 To determine the location of the offline VPU, type

>QUERYPM

and press the Enter key.

Note: The QUERYPM command provides the LIM number, shelf number, and slot number of the far left card of the VPU card pair.

Example of a MAP response:

```
Location: LIM 0  Shelf:1  Slot:12  FTA:425A 1000
PM Load : Default:VPX35CV  Running:VPx36BX
Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA
Reserved : Service:ADAS Options: AUDIO: PROALF
Trouble: Loadname Mismatch
          FBus      Message            CBus
     LIM 0     Tap 11    Channel   Audits    NIU 1     Port 10
   Unit 0:     ISTb  .   Open      ON        ISTb      InSv
   Unit 1:     ISTb  .   Open      ON        ISTb      InSv
```

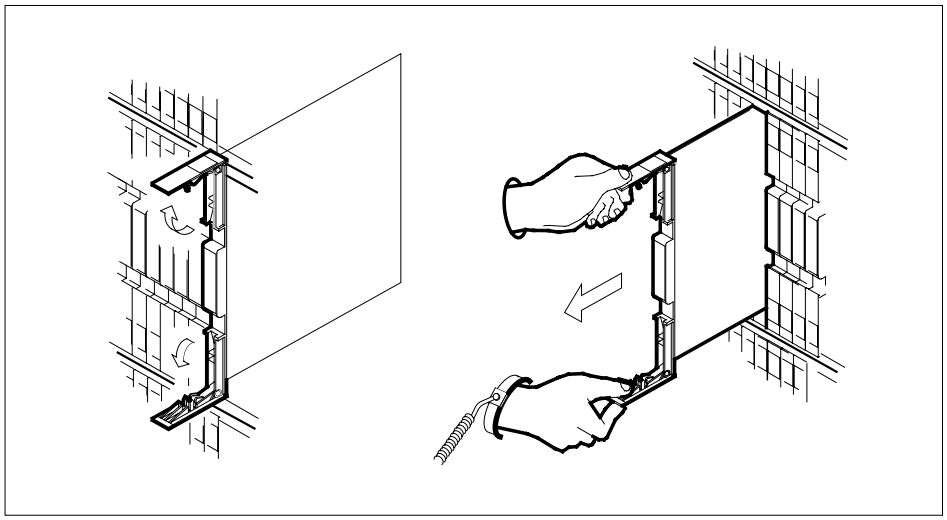
96

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

Locate the NTEX22 card that associates with the VPU.

97 Open the locking levers on the card. Carefully pull the NTEX22 card toward you; unseat the card from the connector.

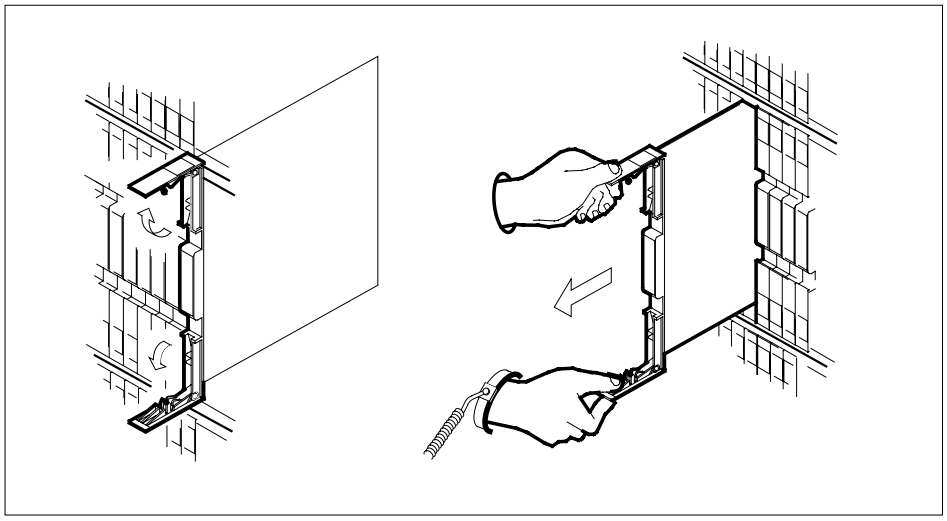
PM VPU
critical (continued)



98 Leave the NTEX22 card in the slot on the link interface shelf (LIS).

99 Locate the NTMX97 card that associates with the VPU.

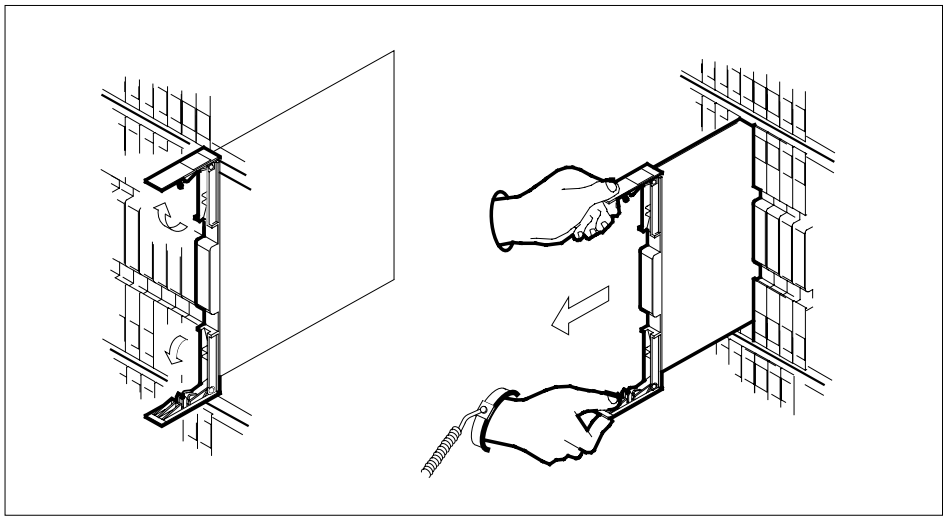
100 Open the locking levers on the card. Carefully pull the NTMX97 card toward you; unseat the card from the connector.



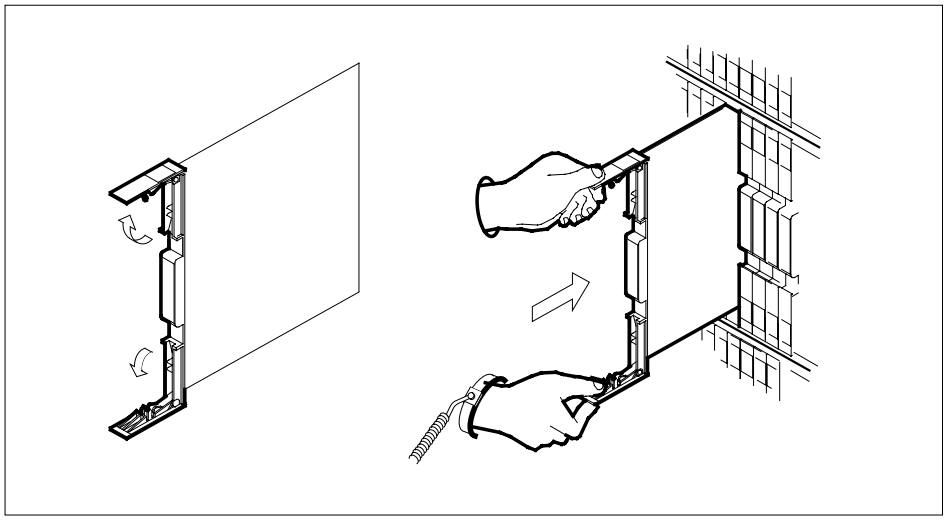
101 Leave the NTMX97 card in the slot on the LIS.

102 Locate the NTMX99 card that associates with the VPU.

103 Open the locking levers on the card. Carefully pull the NTMX99 card toward you; unseat the card from the connector.



104 Carefully slide the NTMX99 card back into the LIS.

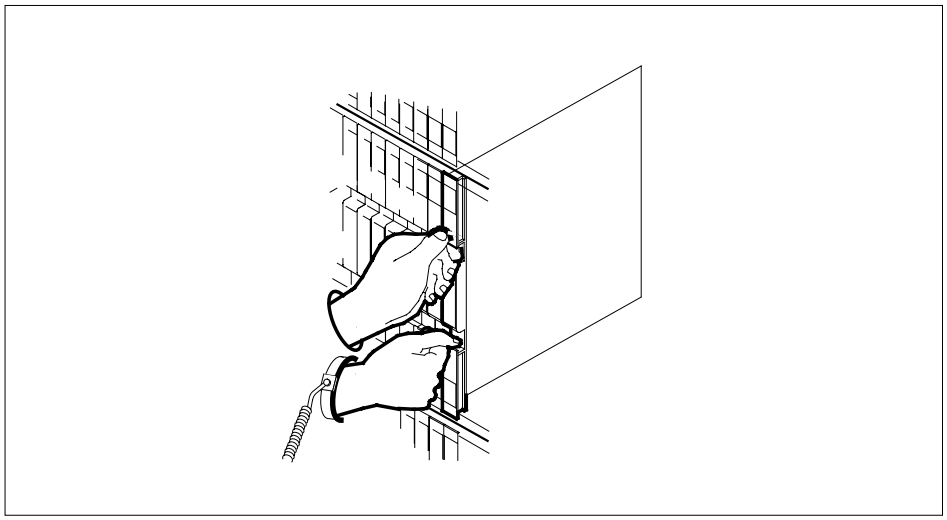


105 Seat and lock the NTMX99 card, as follows:

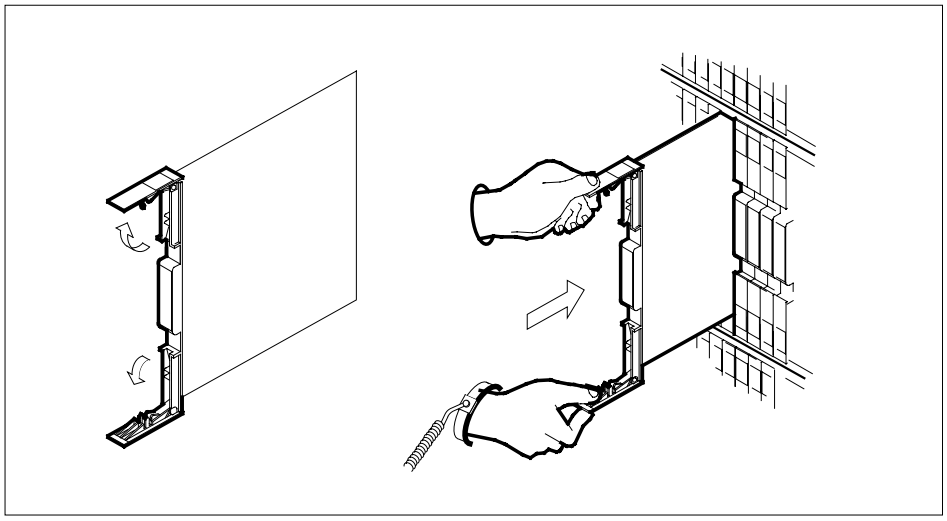
a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.

PM VPU
critical (continued)



106 Carefully slide the NTMX97 card back into the LIS.



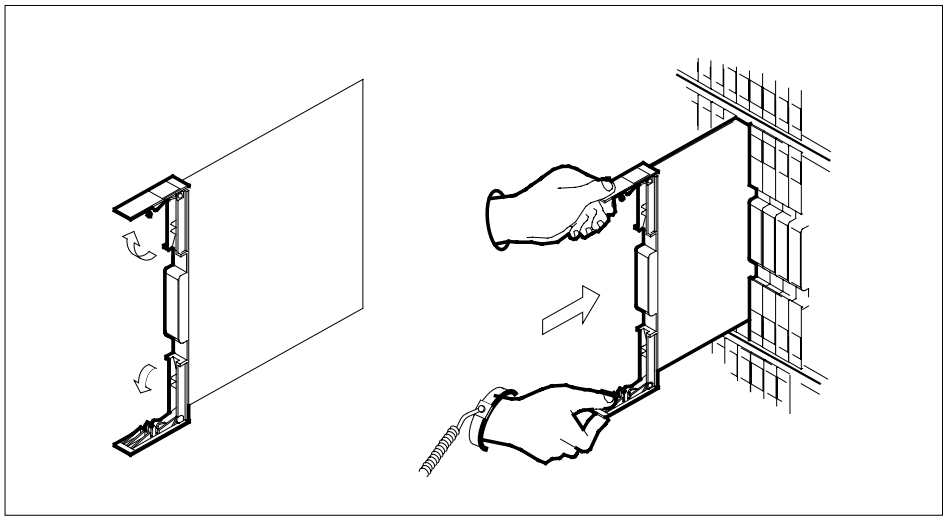
107 Seat and lock the NTMX97 card, as follows:

a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.

108 Carefully slide the NTEX22 card back into the LIS.

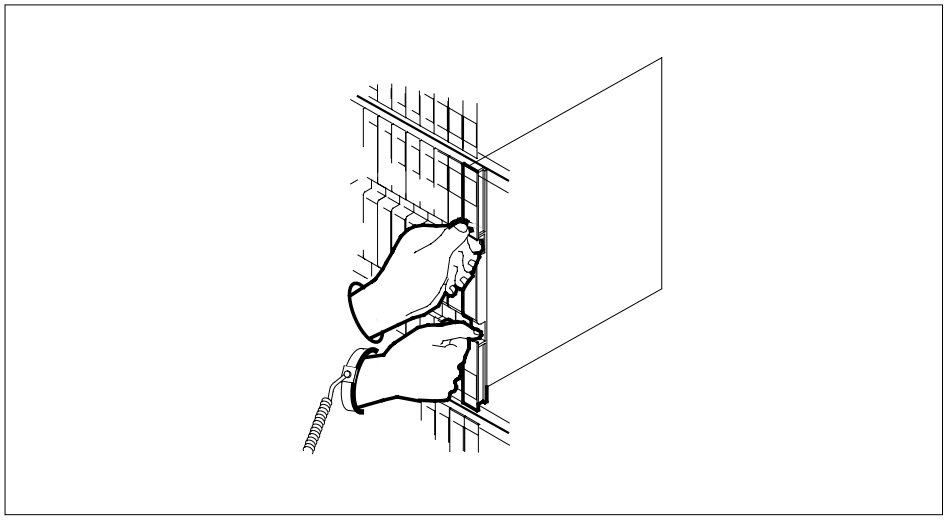
PM VPU
critical (continued)



109 Seat and lock the NTEX22 card, as follows:

a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.



PM VPU
critical (continued)

At the MAP terminal

110 To manually busy the VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

111 To set the VPU again, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 113
failed	step 112

112 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 113
failed	step 117

113 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 118
failed, and the system did not generate a card list	step 117
failed, and the system generated a card list	step 114
failed, and the system generated a card list, and you replaced cards in the VPU	step 117

114 Record the location, description, slot number, PEC, and PEC suffix of each card on the list.

PM VPU
critical (end)

115 To post the LIM for the VPU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 17)

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

>FBUS

and press the Enter key.

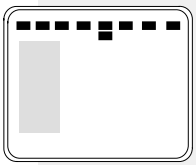
Go to step 46.

117 For additional help, contact the next level of support.

118 The procedure is complete.

PM VPU major

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
.	.	.	.	1VPU M	.	.	.	.	.

Indication

At the MTC level of the MAP display, VPU (preceded by a number) appears under the PM header of the alarm banner. The VPU indicates a major alarm for the voice processor unit (VPU).

Meaning

One or more VPUs are manually busy or manually busy not accessible.

Result

Manually busy VPUs reduce the service provided by an application. Examples of service provided by an application are Automated-Directory Assistance Service (ADAS) or DMS-100 Mail.

The number under the PM header in the alarm banner indicates the number of affected VPUs.

Common procedures

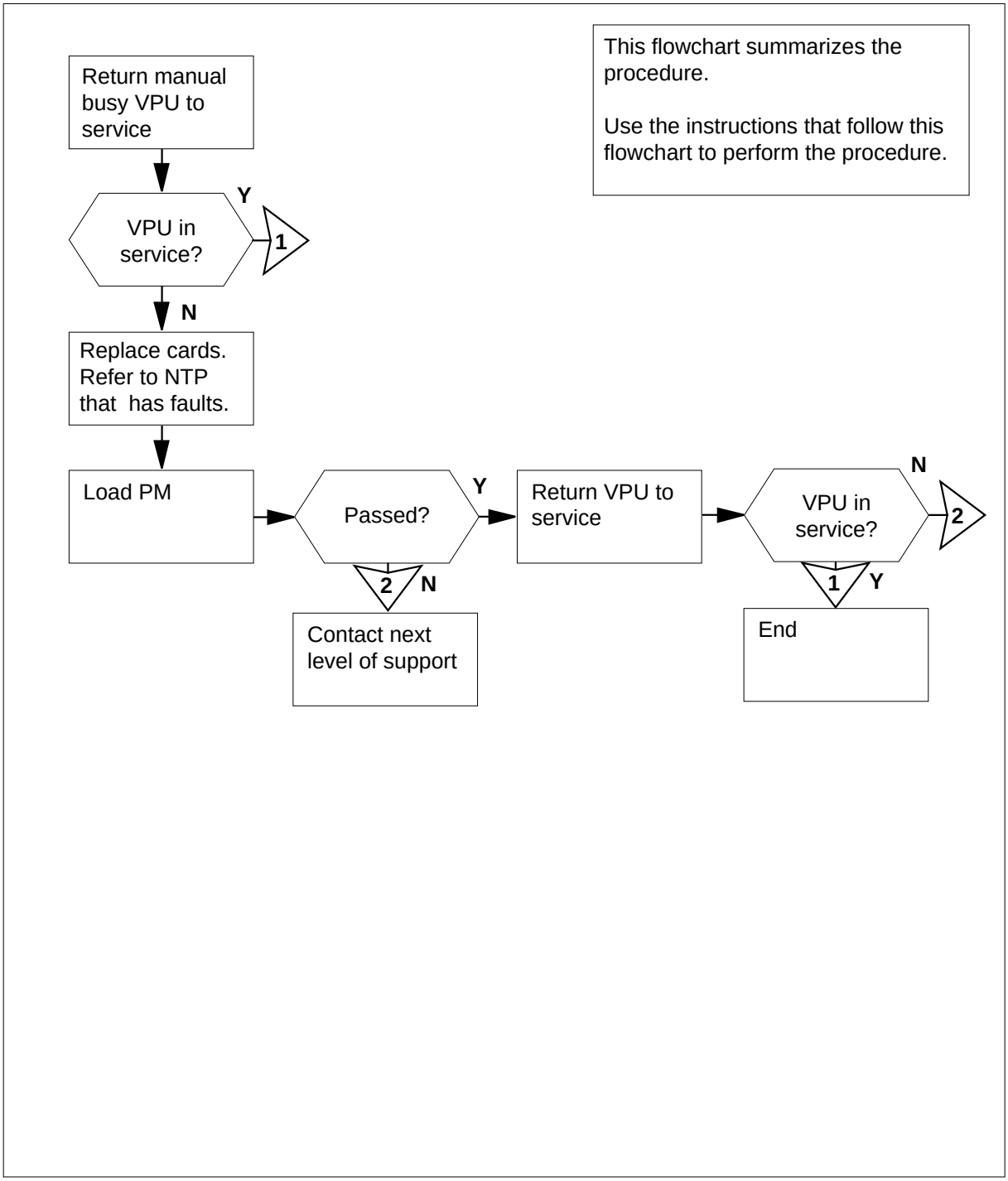
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM VPU
major (continued)

Summary of clearing a PM VPU major alarm



PM VPU
major (continued)

Clearing a PM VPU alarm

At the MAP terminal

1 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP:

```
    SysB    ManB    OffL    CBsy    ISTb    InSv
PM     0       1       1       3       2      49
```

2 To display all manually-busy VPUs

>DISP STATE MANB VPU

and press the Enter key.

3 Record the manual-busy VPUs.

4 To post a manual-busy VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU that you recorded in step 3

Example of a MAP response:

```
VPU   1 ManB
```

5 Determine the state of the posted VPU.

If the posted VPU	Do
is ManB (NA)	step 19
is ManB	step 6

6 Determine from office records or operating company personnel why the VPU is manual busy.

When you have permission, continue this procedure.

7 To test the posted VPU, type

>TST

and press the Enter key.

If the TST command	Do
passed	step 10
failed, and the system generated a card list	step 11
fails, and the system did not generate a card list	step 8

8 To reset the VPU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 10
failed, and the system generated a card list	step 11
fails, and the system did not generate a card list	step 9

9 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 10
failed, and the system generated a card list	step 11
fails, and the system did not generate a card list	step 71

10 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 91

PM VPU
major (continued)

If the RTS command	Do
failed, and the system generated a card list	step 11
failed, and the system did not generate a card list	step 71

11 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

12 Replace the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

At the MAP

13 To manually busy the offline VPU, type

>BSY

and press the Enter key.

If the BSY command	Do
passed	step 14
failed	step 90

14 To reset the VPU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 18
failed	step 15

15 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 18
fails, and you did not replace all cards on the list that you recorded at step 11	step 16

PM VPU
major (continued)

If the LOADPM command	Do
failed, and you replaced all cards on the list that you recorded at step 11	step 71
fails, and the system did not generate a card list	step 71

16 Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

17 Go to step 13.

18 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 91
fails, and you did not replace all cards on the list that you recorded at step 11	step 16
failed, and you replaced all cards on the list that you recorded at step 11	step 71

19 To determine the link interface module (LIM) for the manual busy not accessible VPU, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

```
Location: LIM 0  Shelf:1  Slot:12  FTA:425A 1000
PM Load : Default:VPX35CV  Running:VPx36BX
Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA
Reserved : Service:ADAS Options: AUDIO: PROALF
```

20 Record the number of the VPU, the number of the LIM, and the number of the tap.

Note: The VPU number appears on the right of the VPU header. The LIM number appears on the right of the word LIM in the MAP response. The tap number appears under the TAP header.

21 To post the LIM for the VPU that you recorded in step 20, type

>POST LIM lim_no

and press the Enter key.

where

PM VPU
major (continued)

lim_no
is the number of the LIM (0 to 17)

Example of a MAP display:

```
LIM 1 InSv
        Links_OOS   Taps_OOS
Unit0: InSv     .           1
Unit1: InSv     .           1
        Tap:    0     4     8     12    16    20
FBus0: InSv     .-M-  .I.I  .I.I  .I.I  ..-.  .--.
FBus1: InSv     .-M-  .I.I  .I.I  .I.I  ..-.  .--.
```

22 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

23 Determine the state of the LIM units and both F-buses (0 and 1).

Note: Make sure that each LIM unit is in service or in-service trouble. Make sure that each F-bus is in service or in-service trouble.

If the LIM and both F-buses	Do
are InSv	step 26
are not InSv	step 24

24 An LIM or LIMF alarm is present. Perform the appropriate alarm clearing procedure in this document. Complete the procedure and return to this point.

25 Determine if the VPU major alarm cleared.

If the VPU major alarm	Do
cleared	step 91
did not clear	step 1

26 Determine the state of the F-bus taps for the VPU.

Note: The tap number that you recorded at step 20 applies to both F-bus 0 and F-bus 1.

If	Do
both F-bus taps are M	step 31
both F-bus taps are S	step 27
one F-bus tap is M and the other F-bus tap is S	step 30

27 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

28 To post the VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

29 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 91
failed, and the system generated a card list	step 34
failed, and the system did not generate a card list	step 70

30 Work on the manual busy F-bus tap first.

Go to step 32.

31 Select one of the manual busy taps on either F-bus on which to work.

32 Determine from office records or operating company personnel why the tap is manually busy.

When you have permission, continue this procedure.

33 To return the F-bus tap for the VPU to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed	step 62

PM VPU
major (continued)

If the RTS command	Do
failed, the system generated a card list, and both VPU taps are out of service	step 34
fails, and the system did not generate a card list	step 62
failed, with the response `Return to Service failed -local maintenance not accessible`	step 62

34 Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.

35 Determine the state of the F-bus taps for the VPU.

If	Do
both taps are `M`	step 36
both taps are `S`	step 53
a minimum of one tap is `S`	step 53

36 Replace the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

37 To manually busy the offline VPU, type

`>BSY VPU vpu_no`

and press the Enter key.

where

vpu_no
is the number of the offline VPU (0 to 179)

38 To post the LIM, type

`>POST LIM lim_no`

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 17)

39 To access the F-bus level of the MAP display, type

`>FBUS`

and press the Enter key.

40 To return the F-bus tap for the VPU to service, type

`>RTS FBUS fbus_no tap_no`

and press the Enter key.

PM VPU
major (continued)

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed	step 45
failed, and the system generated a card list	step 41
failed, and the system did not generate a card list	step 70

41 Replace the next card on the list. Perform the correct card replacement procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

42 To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the offline VPU (0 to 179)

If the BSY command	Do
passed	step 43
failed	step 90

43 To post the LIM, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 17)

44 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Go to step 40.

45 To return the other F-bus tap for the VPU to service, type

>RTS FBUS fbus_no tap_no

PM VPU
major (continued)

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed	step 46
failed, and the system generated a card list	step 46

46 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

47 To post the VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

48 To reset the VPU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 52
failed	step 49

49 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 52
failed, and you did not replace all cards on the list	step 50

PM VPU
major (continued)

If the LOADPM command	Do
failed, and you replaced all cards on the list	step 70

50 Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

51 To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the offline VPU (0 to 179)

If the BSY command	Do
passed	step 48
failed	step 90

52 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 91
failed	step 70

53 To quit from the F-bus level, type

>QUIT

and press the Enter key.

54 To post the VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

55 Replace the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

56 To manually busy the offline VPU, type

>BSY VPU vpu_no

PM VPU
major (continued)

and press the Enter key.

where

vpu_no
is the number of the offline VPU (0 to 179)

If the BSY command	Do
passed	step 57
failed	step 90

57 To reset the VPU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 61
failed	step 58

58 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 61
failed, and you did not replace all cards on the list	step 59
failed, and you replaced all cards on the list	step 70

59 Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

60 To manually busy the VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

PM VPU
major (continued)

vpu_no
is the number of the offline VPU (0 to 179)

If the BSY command	Do
passed	step 57
failed	step 90

61 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 90
failed	step 70

62 Determine the state of the second VPU tap.

If the state of the second VPU tap	Do
`is M`	step 64
`is S`	step 63

63 To manually busy the F-bus tap for the VPU, type

`>RTS FBUS fbus_no tap_no`

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed, and the other tap is out of service	step 64
passed, and the other tap is in service	step 64
failed, both taps are out of service, and the system generated a card list	step 34
failed, the other tap is in service, and the system generated a card list	step 64

PM VPU
major (continued)

If the RTS command	Do
fails, and the system did not generate a card list	step 70
failed with the response`Return to service failed- local maintenance not accessible.`	step 70

64 To quit from the F-bus level, type

`>QUIT`

and press the Enter key.

65 To post the VPU, type

`>POST VPU vpu_no`

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

66 To return the VPU to service, type

`>RTS`

and press the Enter key.

If the RTS command	Do
passed	step 90
failed, and the system generated a card list	step 67
fails, and the system did not generate a card list	step 70

67 Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.

68 To post the LIM for the VPU, type

`>POST LIM lim_no`

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 17)

69 To access the F-bus level of the MAP display, type

`>FBUS`

and press the Enter key.

Go to step 35.

70 Determine if you unseated and reseated the NTEX22, NTMX97, and NTMX99 VPU cards during this procedure.

If you	Do
unseated and reseated the VPU cards	step 90
did not unseat and reseat the VPU cards	step 71

71 To offline the VPU, type

>OFFL

and press the Enter key.

72 To determine the location of the VPU, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

```
Location: LIM 0  Shelf:1  Slot:12  FTA:425A 1000
PM Load : Default:VPX35CV  Running:VPx36BX
Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA
Reserved : Service:ADAS Options: AUDIO: PROALF
Trouble: Loadname Mismatch
              FBus       Message                CBus
        LIM 0 Tap 11    Channel   Audits NIU 1  Port 10
Unit 0: ISTb  .         Open      ON     ISTb   InSv
Unit 1: ISTb  .         Open      ON     ISTb   InSv
```

Note: The QUERYPM command provides the LIM number, shelf number, and slot number of the far-left card of the VPU.

At the LPP

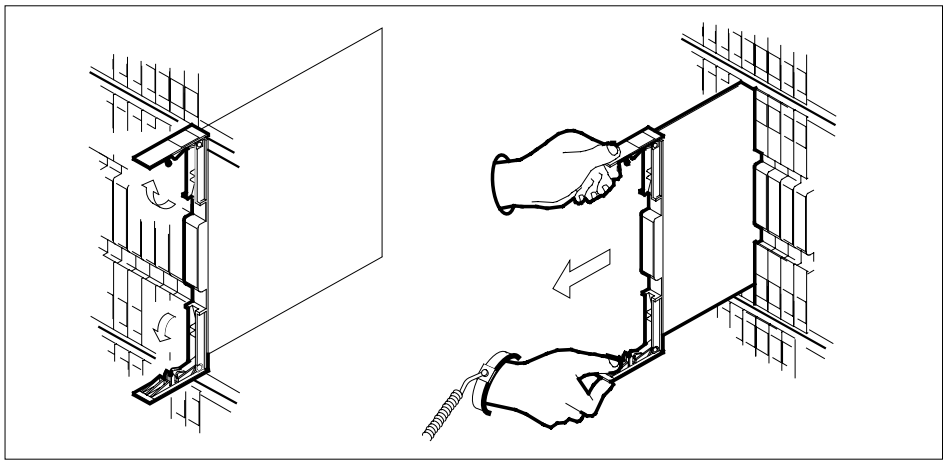
73

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point on the frame supervisory panel (FSP) to handle cards. The wrist strap protects cards against static electricity damage.

Locate the NTEX22 card for the VPU.

PM VPU
major (continued)

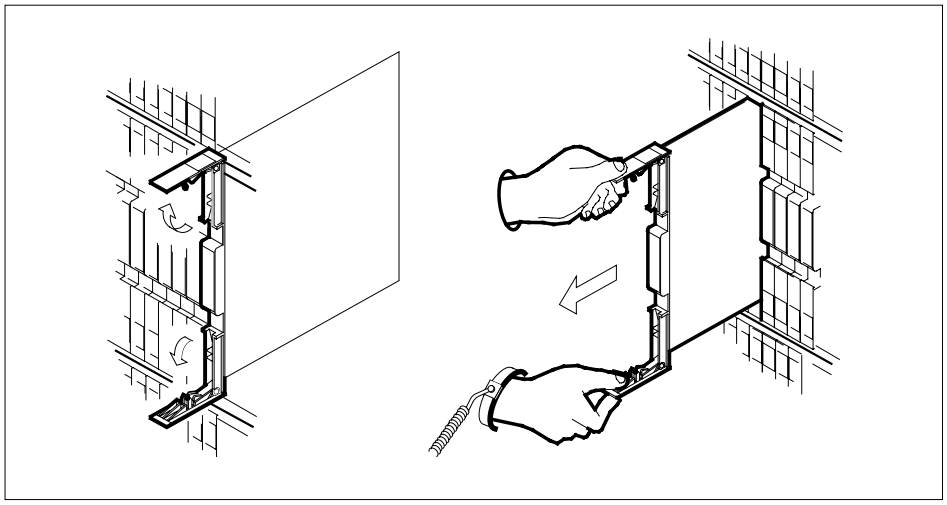
74 Open the locking levers on the card. Carefully pull the NTEX22 card toward you until you unseat the card from the connector.



75 Leave the NTEX22 card in the slot on the link interface shelf (LIS).

76 Locate the NTMX97 card for the VPU.

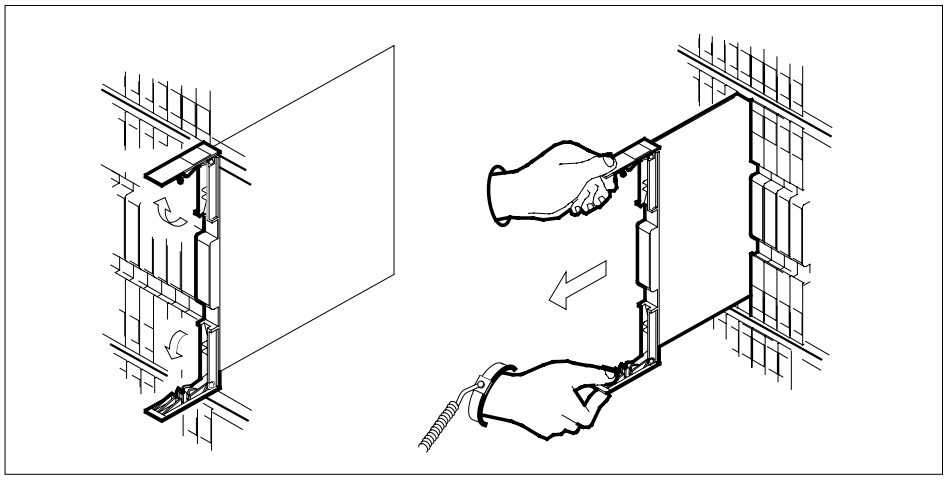
77 Open the locking levers on the card. Carefully pull the NTMX97 card toward you until you unseat the card from the connector.



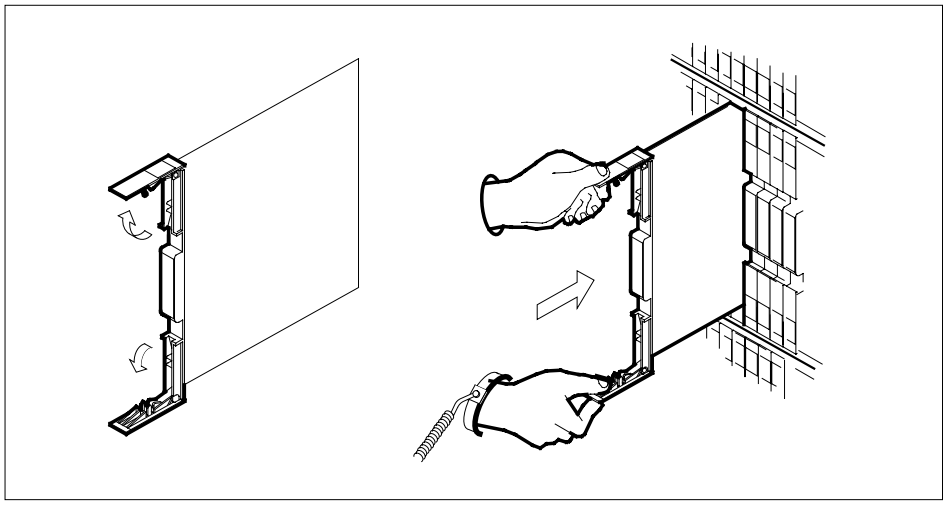
78 Leave the NTMX97 card in the slot on the LIS.

79 Locate the NTMX99 card for the VPU.

80 Open the locking levers on the card. Carefully pull the NTMX99 card toward you until you unseat the card from the connector.



81 Carefully slide the NTMX99 card back into the LIS.

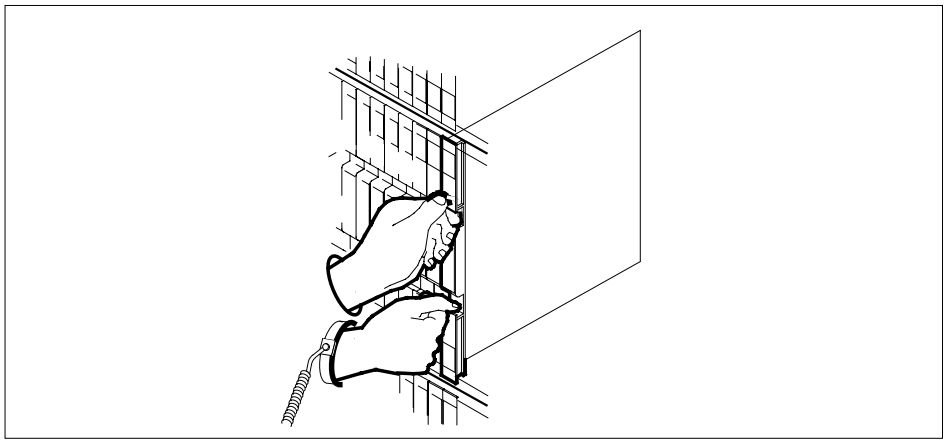


82 Seat and lock the NTMX99 card, as follows:

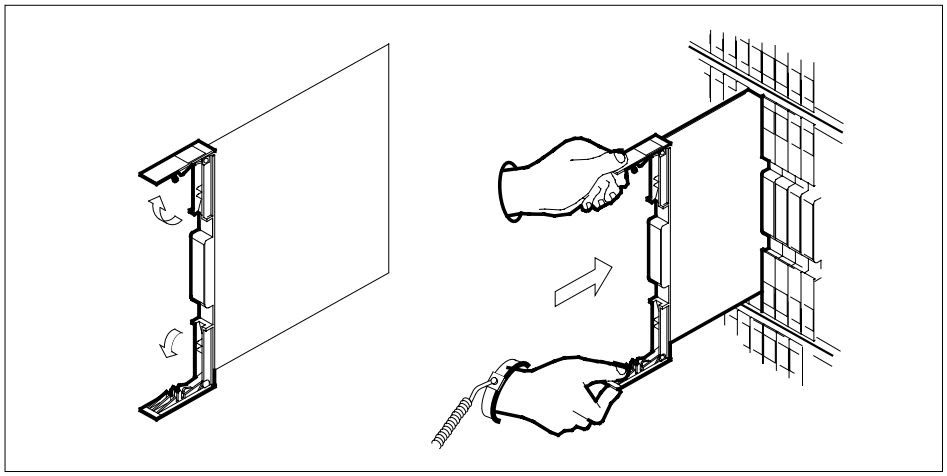
a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.

PM VPU
major (continued)



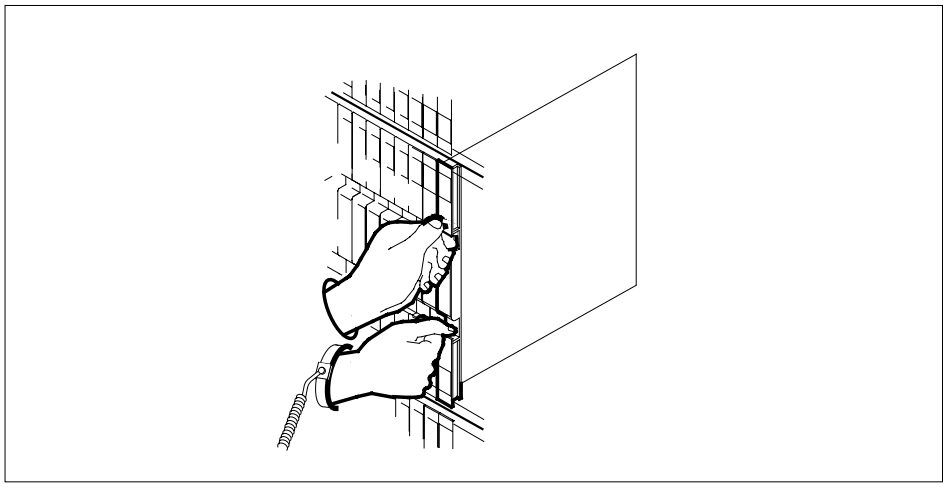
83 Carefully slide the NTMX97 card back into the LIS.



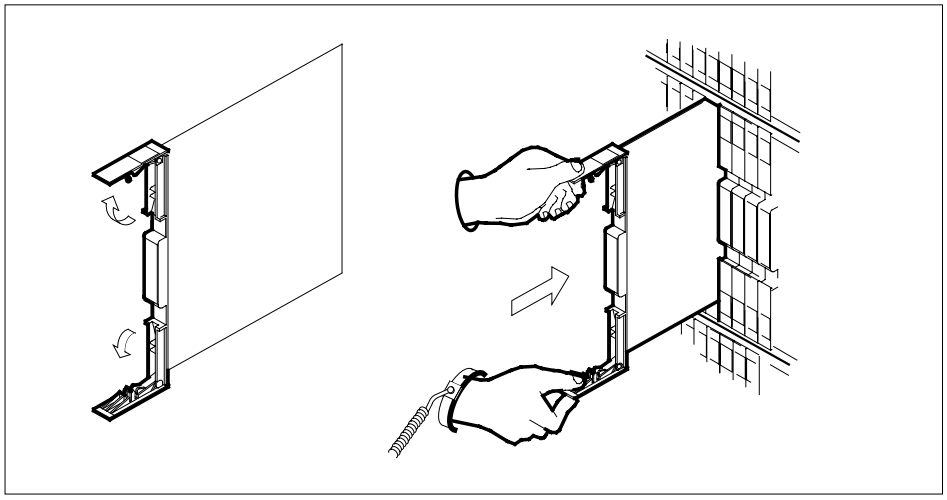
84 Seat and lock the NTMX97 card, as follows:

a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.



85 Carefully slide the NTEX22 card back into the LIS.

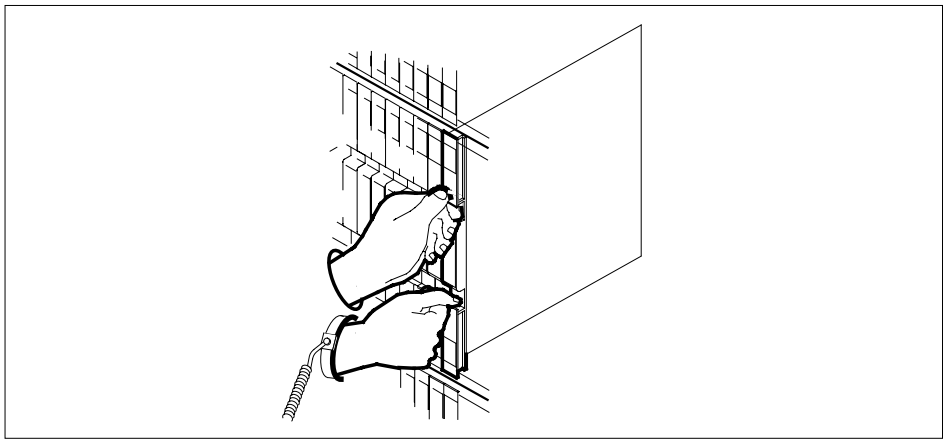


86 Seat and lock the NTEX22 card, as follows:

a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.

PM VPU
major (continued)



At the MAP display

87 To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the offline VPU (0 to 179)

If the BSY command	Do
passed	step 88
failed	step 90

88 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 89
fails, and the system did not generate a card list	step 90
failed, and the system generated a card list	step 34
failed, the system generated a card list, and you replaced cards in the VPU	step 90

89 To return the VPU to service, type

>RTS

and press the Enter key.

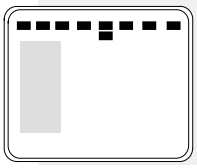
If the RTS command	Do
passed	step 91
fails, and the system did not generate a card list	step 90
failed, and the system generated a card list	step 34
failed, and the system generated a card list, and you replaced cards in the VPU	step 90

90 For additional help, contact the next level of support.

91 The procedure is complete.

PM VPU
minor

Alarm display



CM	MS	IOD	Net	**PM**	CCS	Lns	Trks	Ext	APPL
.	.	.	.	**1VPU**	.	.	.	.	.

Indication

At the MTC level of the MAP display, VPU (preceded by a number) appears under the PM header of the alarm banner. The VPU indicates a minor alarm for the voice processor unit (VPU).

Meaning

One or more VPUs are in-service trouble. One of the F-bus taps for the VPU can be manual busy or system busy. The VPU can also have a loadname mismatch.

The number under the PM header of the alarm banner indicates the number of affected VPUs.

Result

The VPUs that are in-service trouble continue to function. The VPUs function at a reduced capacity.

Common procedures

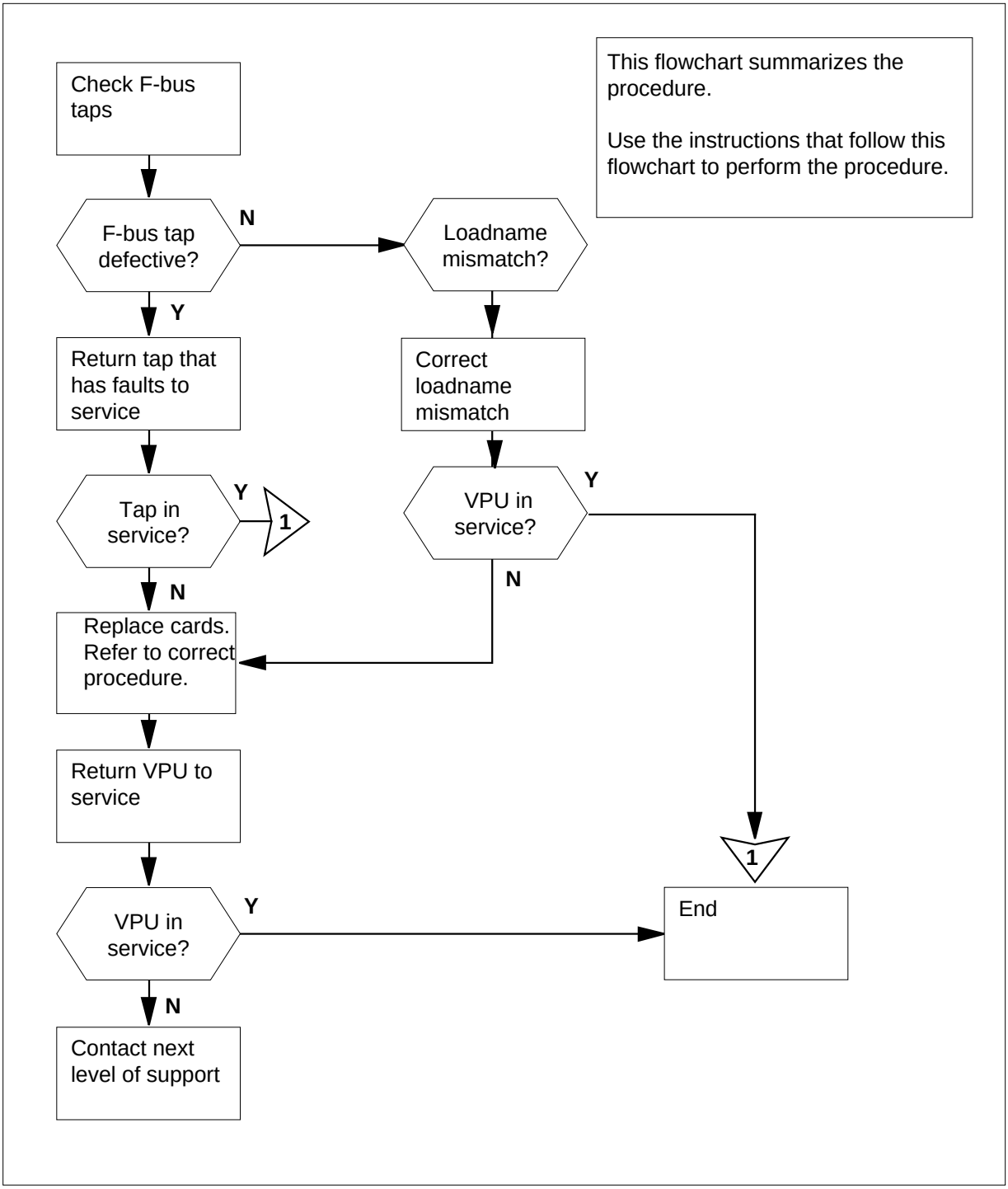
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM VPU
minor (continued)

Summary of clearing a PM VPU minor alarm



PM VPU
minor (continued)

Clearing a PM VPU minor alarm

At the MAP terminal

1 Check the MAP alarm banner of the MAP display to confirm that all NIU alarms cleared.

If the NIU alarms	Do
cleared	step 4
did not clear	step 2

2 Go to the correct NIU procedure in this document to clear the alarm. Complete the procedure and return to this point.

3 Determine if the VPU minor alarm cleared.

If the NIU minor alarm	Do
cleared	step 119
did not clear	step 4

4 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP display:

```
    SysB    ManB    OffL    CBsy    ISTb    InSv
PM   0       0       0       0       2       49
```

5 Display all in-service trouble VPUs, type

>DISP STATE ISTB VPU

and press the Enter key.

6 Record the numbers of the in-service trouble VPUs.

7 To post an in-service trouble VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

Example of a MAP display:

```
VPU   1 ISTb
```

PM VPU
minor (continued)

8 To display the faults that cause the in-service trouble condition, type

>QUERYPM

and press the Enter key.

Example of a MAP display:

```
Location: LIM 0  Shelf:1  Slot:12  FTA:425A 1000
PM Load : Default:VPX35CV  Running:VPx36BX
Card Info:Processor:NTEX22BB Other:NTMX97AA NTMX99AA
Reserved : Service:ADAS Options: AUDIO: PROALF
Trouble: Loadname Mismatch
```

9 Record the VPU number, the tap number, the state of the tap, and the link interface module (LIM) number of the posted VPU.

10 To determine the faults, look under the ISTB conditions header on the MAP response.

If the condition header	Do
indicates one of the F-bus taps is out of service (shown as Tap # n OOS or Tap # n OOS/NA)	step 11
indicates Loadname Mismatch	step 68
indicates other than listed here	step 118

11 Record the number of the F-bus that contains the out-of-service VPU tap.

Note: The F-bus number appears on the right side of the TAP # header.

12 To post the LIM for the VPU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 17) that you recorded in step 9

Example of a MAP display:

```
LIM  1  InSv
                          Links_OOS Taps_OOS
    Unit0:  InSv                .          1
    Unit1:  InSv             .             .
```

13 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

PM VPU
minor (continued)

Example of a MAP display:

```
 FBus0: ManB        .... .... .... .... ----  ----  ----  ---B  BB--
FBus1: InSv         ...M .I.. .S.. .... ----  ----  ----  ---.  ..--
```

Note: In the previous example, a B indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual-busy tap. An I indicates an in-service trouble tap. An S indicates a system busy tap. A dash (-) indicates a tap that is not equipped.

14 Determine the state of the LIM units and both F-buses (0 and 1).

If the state of the LIM units and both F-buses	Do
is InSv	step 17
is other than listed here	step 15

15 An LIM or LIMF alarm is present. Perform the appropriate alarm clearing procedures in this document. Complete the procedure and return to this point.

16 Determine if one VPU minor alarm cleared.

If one VPU minor alarm	Do
cleared	step 119
not cleared	step 4

17 Determine the state of the F-bus tap for the VPU that you recorded in step 11.

Note: The tap number applies to both F-buses.

If the state of the F-bus tap has faults	Do
is M	step 18
is S	step 19

18 Determine from office records or operating company personnel why the F-bus is manually busy.

If you	Do
can return the F-bus tap to service	step 20
cannot return the F-bus tap to service	step 119

PM VPU
minor (continued)

19 To force the system busy F-bus tap for the VPU to busy, type

>BSY FBUS fbus_no tap_no FORCE

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

Example of a MAP display:

```
LIM 1 FBUS 0 Tap 0 Busy initiated.
LIM 1 FBUS 0 Tap 0 Busy passed.
```

20 To test the F-bus tap for the VPU, type

>TST FBUS fbus_no tap_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

If the TST command	Do
passed	step 46
failed, and the system generated a card list	step 47
failed, and the system did not generate a card list	step 92
failed, with the response `Return to Service failed -local maintenance not accessible`	step 21
other than listed here	step 118

21 To perform an in-service test on the LIM unit for the VPU, type

>TST UNIT unit_no

and press the Enter key.

where

PM VPU
minor (continued)

unit_no
is the number of the LIM (0 or 1)

Note: In step 6, you recorded the F-bus number that contains the out-of-service VPU tap. The LIM unit 0 associates with F-bus 0. The LIM unit 1 associates with F-bus 1.

If the TST command	Do
passed	step 46
failed, and the system generated a card list	step 22
failed, and the system did not generate a card list	step 118
other than listed here	step 118

22 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

23

CAUTION
Possible loss of service
Make sure that the mate LIM unit is in service before you manually busy the LIM unit. The LIM unit contains the card that requires replacement. Failure to make sure that the mate LIM unit is in service can isolate nodes. The nodes are on link interface shelves (LIS) 1, 2, and 3.

Determine the state of the mate LIM unit.

Note: LIM unit 1 is the mate unit if the out-of-service VPU tap is on F-bus 0. LIM unit 0 is the mate if the out-of-service VPU tap is on F-bus 1.

If the state of the mate LIM unit	Do
is `InSv` or `ISTb`	step 26
is other than listed here	step 24

24 Perform the correct alarm clearing procedure in this document to return the LIM unit to service. Complete the procedure and return to this point.

25 Go to step 16.

26 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP display:

```
            Tap:   0   4   8   12  16      20  24  28  32
FBus0: InSv        ....    .... .... ....  ----  ----  ----  ---.  ..--
FBus1: InSv        ...M .I.. .S.. .... ----  ----  ----  ---.  ..--
```

Note: In the previous example, a B indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual busy tap. An I indicates an in-service trouble tap. An *S* indicates a system busy tap. A dash (-) indicates an tap that is not equipped.

27

CAUTION
Possible loss of service
Make sure that the mate F-bus is in service before you manually busy the LIM unit. Make sure that the taps for equipped and online nodes are in service before you manually busy the LIM unit. The LIM unit contains the card that requires replacement. Failure to make sure that the F-bus and taps are in service can isolate nodes. The nodes are on LIS 1, 2, and 3.

Determine the state of the mate F-bus.

Note: F-bus 1 is the mate if the out-of-service VPU tap is on F-bus 0. F-bus 0 is the mate if the out-of-service VPU tap is on F-bus 1. The F-bus state appears on the right of the words FBus0 or FBus1 in the example MAP display in step 26.

If the state of the mate F-bus	Do
is InSv or ISTb	step 30
is other than listed here	step 28

28 Perform the correct alarm clearing procedure in this document to return the mate F-bus to service. Complete the procedure and return to this point.

29 Go to step 16.

30 Determine the state of the taps on the mate F-bus.

Note: The tap states appear in the two rows of characters under the numbers 0 to 35 (or 0 to 23). The example MAPdisplay in step 26 shows the location of the tap states. If the out-of-service VPU tap is on F-bus 0,

PM VPU
minor (continued)

examine the taps on F-bus 1. If the out-of-service VPU tap is on F-bus 1, examine the taps on F-bus 0.

If the taps on the mate F-bus	Do
are in service (.) or in-service trouble (I)	step 33
are manual busy (M) or system busy (S)	step 31

31 Perform the correct alarm clearing procedure in this document to return the taps to service. Complete the procedure and return to this point.

32 Go to step 16.

33

CAUTION
Loss of service
Make sure that you manually busy the F-bus for the LIM unit. The LIM unit contains the card that requires replacement. Failure to manually busy the F-bus results in a loss of CCS7 messaging for all application-specific units (ASU). The ASUs are in the link peripheral processor (LPP) that carry traffic.

Manually busy the F-bus for the LIM unit. The LIM unit contains the card that requires replacement. To manually busy the F-bus, type

>BSY FBUS fbus_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

Note: The F-bus 0 associates with LIM unit 0. The F-bus 1 associates with LIM unit 1.

If the response	Do
is `LIM x FBus y Busy initiated.`	step 35
is `LIM x FBus y Busy requires confirmation because` is is	step 34

34 To confirm the command, type

>YES

and press the Enter key.

Example of a MAP display:

```
            Tap:   0    4    8    12   16   20   24   28   32
FBus0: ManB        BBBB BBBB BBBB BBBB ----  ----  ----  ---B  BB--
FBus1: InSv        .... .... .... .... ----  ----  ----  ---.  ..--

LIM 1 FBus 0 Busy initiated.
LIM 1 FBus 0 Busy passed.
```

Note: In the example, you manually busied F-bus 0.

35 To manually busy the LIM unit that contains the card that has faults, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM (0 or 1)

36 To reset the LIM unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM (0 or 1)

If the PMRESET command	Do
passed	step 43
failed	step 37

37 To load the LIM unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM (0 or 1)

If the LOADPM command	Do
passed	step 43

PM VPU
minor (continued)

If the LOADPM command	Do
failed, and the system generated a card list	step 38
failed, and the system did not generate a card list	step 118

38 Change the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

At the MAP display

39 To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

40 To load the LIM unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM (0 or 1)

If the LOADPM command	Do
passed	step 43
failed and you did not replace all cards on the list that you recorded in step 22	step 41
failed and you replaced all cards on the list that you recorded in step 22	step 118

41 Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

42 Go to step 39.

43 To return the LIM unit for the VPU to service, type

>RTS UNIT unit_no

and press the Enter key.

PM VPU
minor (continued)

where

unit_no
is the number of the LIM (0 or 1)

If the RTS command	Do
passed	step 44
failed	step 118

44 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

45 To return the F-bus to service, type

>RTS FBUS fbus_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

Note: The F-bus 0 associates with LIM unit 0. The F-bus 1 associates with LIM unit 1.

If the RTS command	Do
passed	step 46
failed	step 118

46 To return the F-bus tap for the VPU to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed	step 117
failed, and the system generated a card list	step 47

PM VPU
minor (continued)

If the RTS command	Do
failed, and the system did not generate a card list	step 92

47 Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.

48 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

49 To post the VPU that you recorded in step 3, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

50 To manually busy the VPU, type

>BSY

and press the Enter key.

If the BSY command	Do
passed	step 53
failed	step 52
prompts for a confirmation	step 51

51 To confirm the command, type

>YES

and press the Enter key.

Go to step 53.

52 To force the VPU to busy, type

>BSYFORCE

and press the Enter key.

53 Change the first card on the list that you recorded in step 45. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

PM VPU
minor (continued)

At the MAP display

54 To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

55 To reset the VPU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 57
failed	step 56

56 To load the VPU unit, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 57
failed, and you did not replace all cards	step 62
failed, and you replaced all cards	step 98

57 To post the LIM for the VPU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 17)

58 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

59 To return the F-bus tap for the VPU to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

PM VPU
minor (continued)

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed	step 65
failed, and you did not replace all cards on the list	step 60
failed, and you replaced all cards on the list	step 92

60 To quit from the F-bus level of the MAP display, type

```
>QUIT
```

and press the Enter key.

61 To post the VPU, type

```
>POST  VPU  vpu_no
```

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

62 Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

63 To manually busy the offline VPU, type

```
>BSY  VPU  vpu_no
```

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

64 Go to step 54.

65 To quit from the F-bus level of the MAP display, type

```
>QUIT
```

and press the Enter key.

66 To post the VPU for the F-bus tap, type

```
>POST  VPU  vpu_no
```

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

67 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 119
failed	step 98

68 Record the names of the default load and the running load.

Example of a MAP response:

```
Default Load: ULX36BX
Running Load: ULX36BX
```

69

CAUTION
Possible service-affecting action
Contact your next level of support before you continue. Make sure that you can change the default load or the running load.

The default load and the running load are mismatched. To correct this fault, you must change the default load or the running load.

If you are advised to	Do
change the default load	step 70
change the running load	step 80
not take action	step 119

70 To access table PMLOADS, type

>TABLE PMLOADS

and press the Enter key.

71 To position on the default load in table PMLOADS, type

>POSITION load_name

and press the Enter key.

where

PM VPU
minor (continued)

load_name
is the name of the default load

72 Determine if the default load is in table PMLOADS.

If the default load	Do
is in the table	step 73
is not in the table	step 118

73 To quit from the table, type

>QUIT

and press the Enter key.

74 To access table LIUINV, type

>TABLE LIUINV

and press the Enter key.

Example of a MAP response:

```
TABLE:LIUINV
```

75 To position on the key value of the tuple you want to change, type

>POSITION VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

76 To indicate the field in the tuple you want to change, type

>CHANGELOAD

and press the Enter key.

77 To enter the new value of the field you want to change, type

>new_load_name

and press the Enter key.

where

new_load_name
is the name of the running load that you recorded in

step 68

78 Make sure that the indicated changes are correct. To confirm the new value of the changed field, type

>Y

and press the Enter key.

Example of a MAP response:

```
TABLE:CHANGED
```

79 To quit from the table, type

>QUIT

and press the Enter key.

Go to step 117.

80 To manually busy the VPU, type

>BSY

and press the Enter key.

If the BSY command	Do
passed	step 83
failed	step 82
prompts for a confirmation	step 81

81 To confirm the command, type

>YES

and press the Enter key.

Go to step 83.

82 To force the VPU to busy, type

>BSYFORCE

and press the Enter key.

83 To load the VPU unit, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 91
failed, and the system generated a card list	step 84
failed, and the system did not generate a card list	step 98

84 Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.

PM VPU
minor (continued)

85 Change the first card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

At the MAP

86 To manually busy the offline VPU, type

>BSY VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

87 To reset the VPU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 91
failed	step 88

88 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 91
failed, and you did not replace all cards on the list that you recorded at step 84	step 89
failed, and you replaced all cards on the list that you recorded at step 84	step 98

89 Replace the next card on the list. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

90 Go to step 86.

91 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 117
failed	step 98

92 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

93 To post the VPU, type

>POST VPU vpu_no

and press the Enter key.

where

vpu_no
is the number of the VPU (0 to 179)

94 Determine the state of the VPU.

If the state of the VPU	Do
is ManB	step 98
is not ManB	step 95

95 To manually busy the VPU, type

>BSY

and press the Enter key.

If the BSY command	Do
passed	step 98
failed	step 97
prompts for a confirmation	step 96

96 To confirm the command, type

>YES

and press the Enter key.

Go to step 98.

97 To force the VPU to busy, type

>BSYFORCE

and press the Enter key.

PM VPU
minor (continued)

98 To offline the VPU, type

>OFFL

and press the Enter key.

99 To determine the location of the VPU, type

>QUERY

and press the Enter key.

Note: The QUERYPM command provides the LIM number, shelf number, and slot number of the far-left front card of the VPU.

Example of a MAP response:

```
PM type:VPU PM No.:110  Status: OffL
LIM: 1  Shelf:2  Slot: 12   VPU FTA:4250
1000
Default Load: ULX36BX
Running Load: ULX36BX
   Msg Channel #0 NA
   TAP #0 OOS/NA
LMS States:     InSv    InSv
Auditing :      No      Yes
Msg Channels:   NA      Acc
TAP 2 :     M       .
```

At the LPP

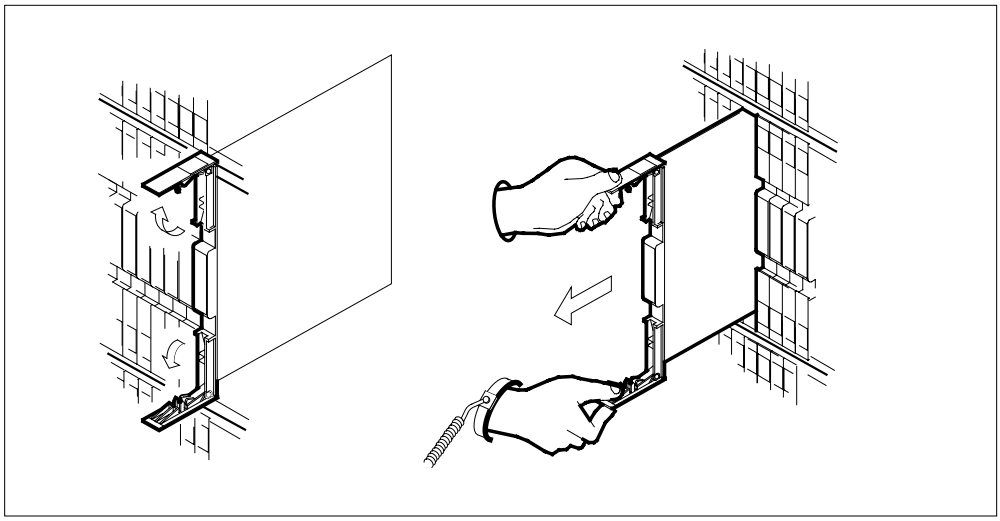
100

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point on the frame supervisory panel (FSP) to handle cards. The wrist strap protects the cards against static electricity damage.

Locate the NT9X14 card for the VPU.

101 Open the locking levers on the card. Carefully pull the NT9X14 card toward you until you unseat the card from the connector.

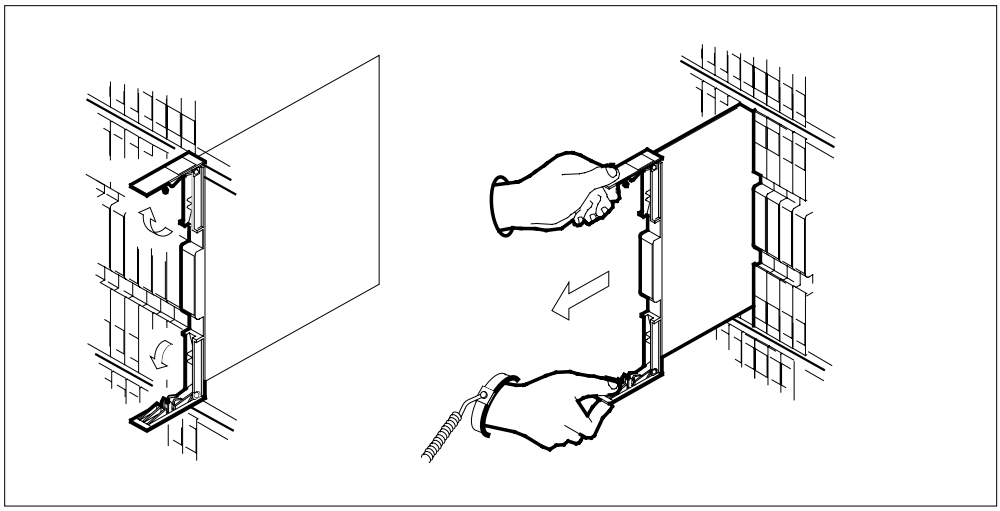
PM VPU
minor (continued)



102 Leave the NT9X14 card in the slot on the link interface shelf (LIS).

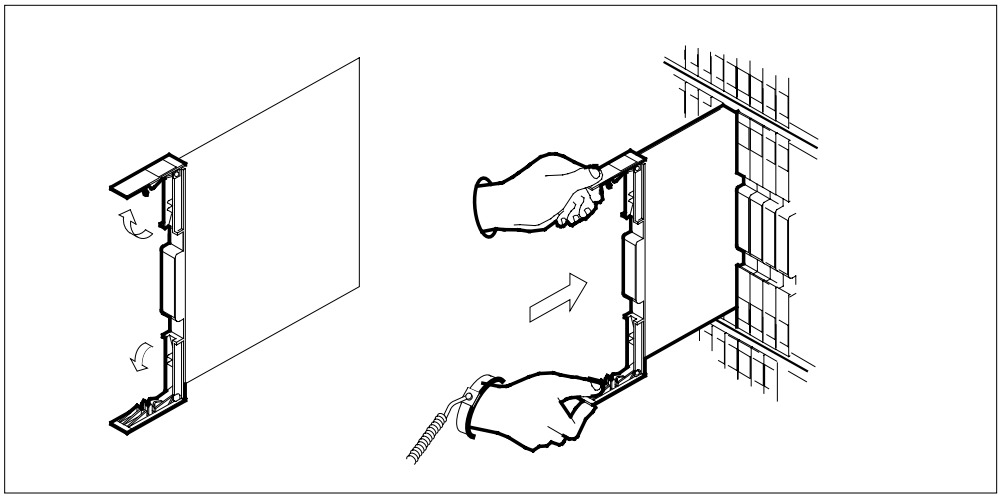
103 Locate the NTEX22 card for the VPU.

104 Open the locking levers on the card. Carefully pull the NTEX22 card toward you until you unseat the card from the connector.



105 Carefully slide the NTEX22 card back into the LIS.

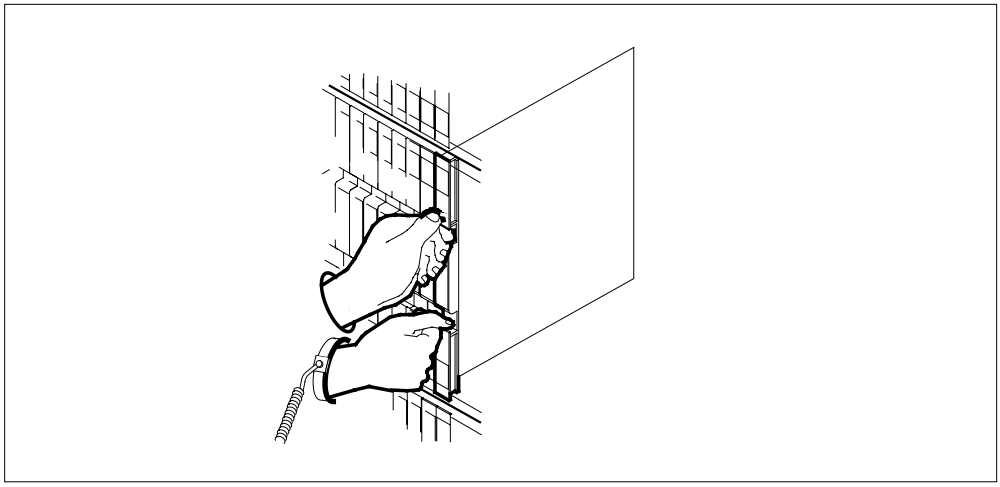
PM VPU
minor (continued)



106 Seat and lock the NTEX22 card as follows:

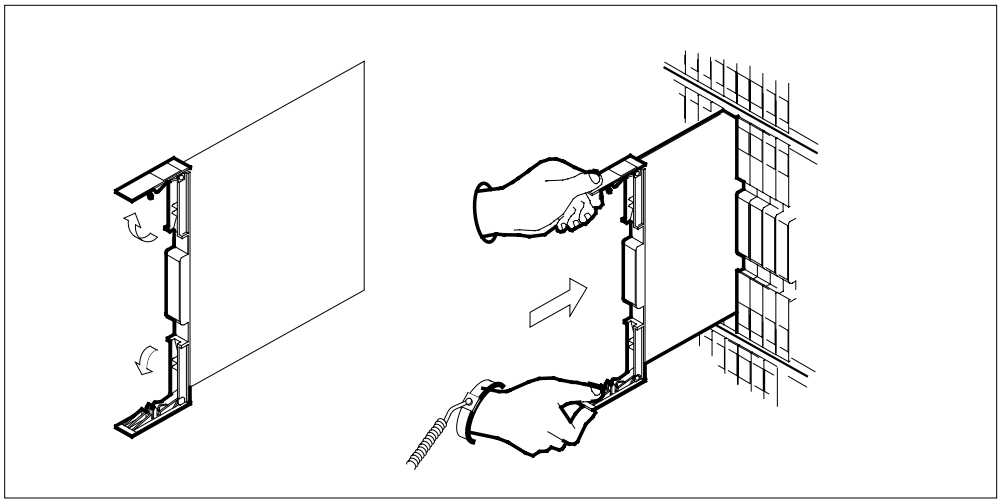
a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.



107 Carefully slide the NT9X14 card back into the LIS.

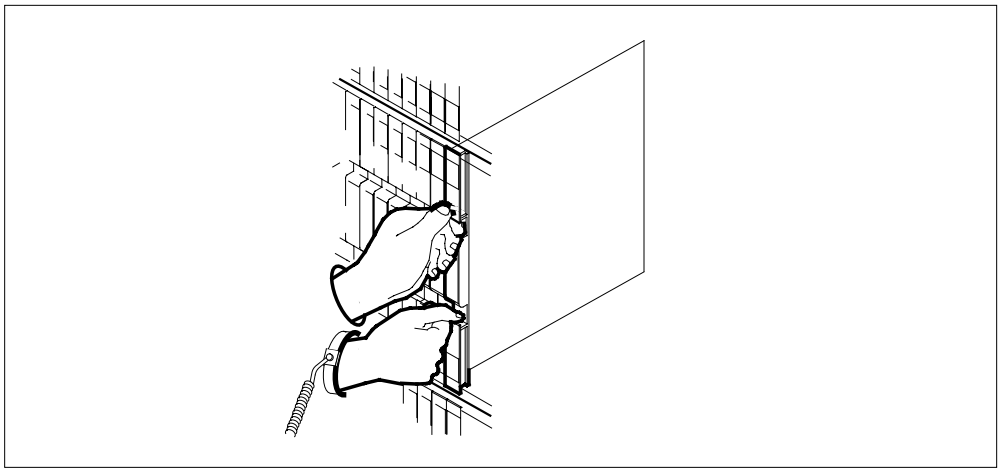
PM VPU
minor (continued)



108 Seat and lock the NT9X14 card as follows:

a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.



109 To manually busy the VPU, type

>BSY

and press the Enter key.

If the BSY command	Do
passed	step 110

PM VPU
minor (continued)

If the BSY command	Do
failed	step 118

110 To load the VPU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 112
fails, the system generates a card list, and you did not replace any cards in the VPU	step 111
failed, the system generated a card list, and you replaced cards in the VPU	step 118
fails, and the system did not generate a card list	step 118

111 Record the location, description, slot number, PEC, and PEC suffix of the cards on the list.

Go to step 38.

112 To return the VPU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 113
fails, the system generates a card list, and you did not replace any cards in the VPU	step 111
failed, the system generated a card list, and you replaced cards in the VPU	step 118
fails, and the system did not generate a card list	step 118

113 To post the LIM for the VPU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM in use (0 to 17)

114 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

115 Determine if one of the VPU taps is manual busy.

If a VPU tap	Do
is manual busy	step 116
is not manual busy	step 117

116 To return the tap for the VPU to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed	step 117
failed	step 118

117 Determine if one VPU minor alarm cleared.

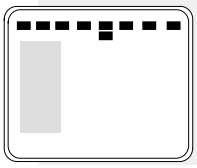
If one VPU minor alarm	Do
cleared	step 119
did not clear	step 118

118 For additional help, contact the next level of support.

119 The procedure is complete.

PM XLIU critical

Alarm display



CM	MS	IOD	Net	**PM**	CCS	Lns	Trks	Ext	APPL
.	.	.	.	**1XLIU**	.	.	.	.	.
				C					

Indication

At the MTC level of the MAP display, XLIU (preceded by a number) appears under the PM header of the alarm banner. The XLIU indicates a critical alarm for an X.25/X.75 link interface unit (XLIU).

Meaning

One or more XLIUs are system busy or system busy not accessible for one of the following reasons:

- link de-allocation
- XLIU error interrupts
- XLIU does not respond to computing module (CM)
- in-service test failure
- network interface unit (NIU) resources not available

The number under the PM header in the alarm banner indicates the number of affected XLIUs.

Result

The indicated number of XLIUs are out of service. The X.25/X.75 links for the XLIUs cannot carry traffic.

Common procedures

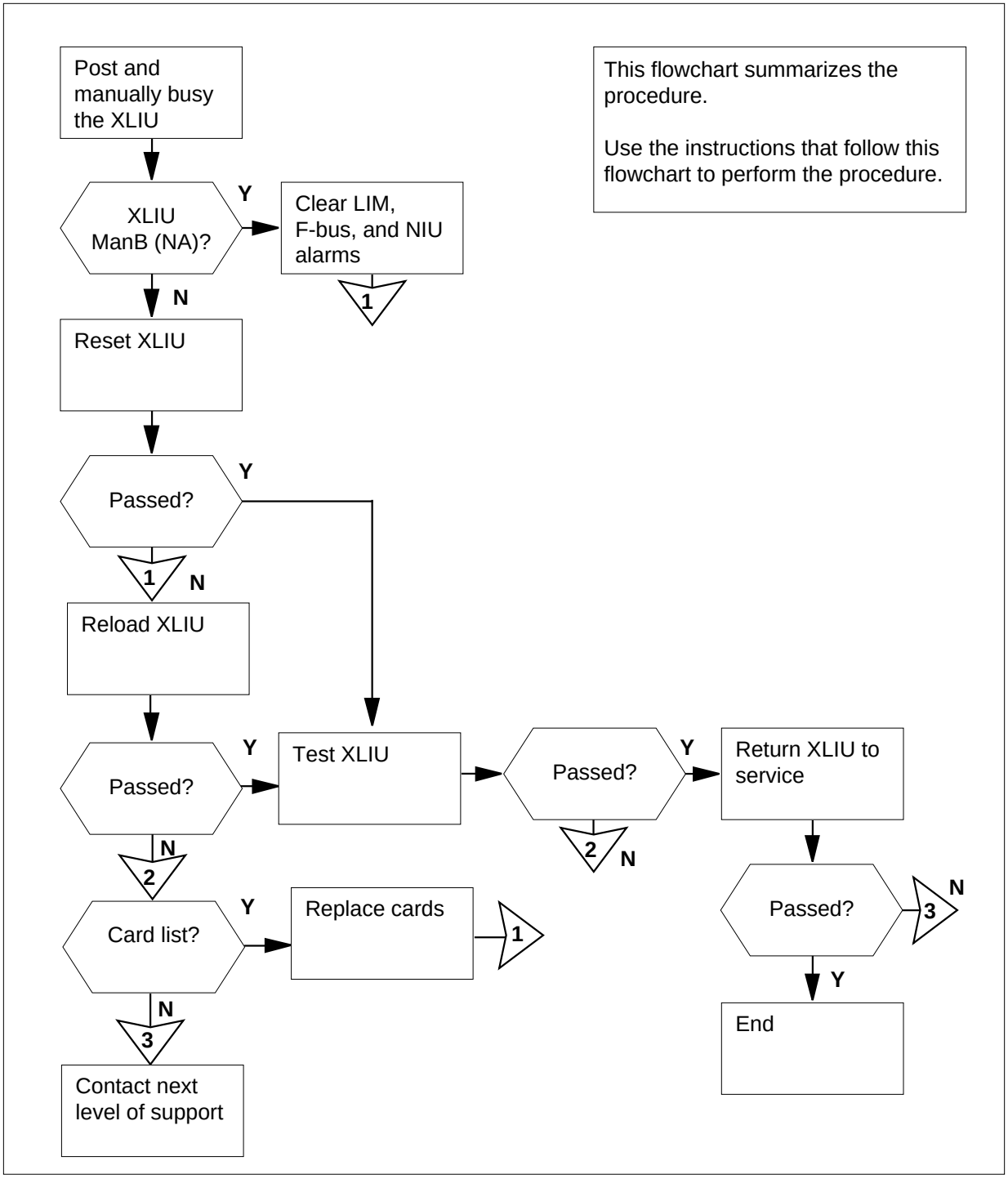
This procedure refers to *Moving an XSG to a spare XLIU*.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM XLIU
critical (continued)

Summary of clearing a PM XLIU critical alarm



PM XLIU
critical (continued)

Clearing a PM XLIU critical alarm

At the MAP terminal

1 Determine if all MS alarms cleared.

If all MS alarms	Do
cleared	step 2
did not clear	step 3

2 Perform the correct MS alarm clearing procedure in this document. Complete the procedure and return to this point.

3 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP display:

```
                  SysB    ManB    OffL    CBsy    ISTb
PM                  39       0       3      30      16
```

4 To display the system busy XLIUs, type

>DISP STATE SYSB XLIU

and press the Enter key

Example of a MAP display:

```
SysB XLIU: 121,312
```

5 Record the numbers of the system busy XLIUs.

6 Choose a system busy XLIU to work on from the list that you recorded in step 5.

7 To post the system busy XLIU, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no
is the number of the selected XLIU (0 to 511)

Example of a MAP display:

```
XLIU   121 SysB      Spre
```

8 To determine if the XLIU is in a link peripheral processor (LPP), type

>QUERYPM

PM XLIU
critical (continued)

and press the Enter key.

Note: The code LIM appears on the far left on the response on the third line. If the code LIM appears in this location, the XLIU is in an LPP.

Example of a MAP display:

```
PM type: XLIU  PM No.: 121  Status: SysB
Node Number 81 XSG 1
LIM: 0  Shelf: 2  Slot: 12     XLIU FTA:  424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
    Loadname Mismatch
    CBUS PORT for NIU Unit 0 is not inservice
    CBUS PORT for NIU Unit 1 is not inservice
                Unit 0        Unit 1
LMS States   :  InSv          InSv
Auditing     :  No            No
Msg Channels:  Acc           Acc
TAP 9        :  .             .
NIU 1        :  InSv          InSv
```

If XLIU	Do
is in an LPP	step 10
is other than listed here	step 9

9 Determine if other system busy XLIUs are present that you did not work on.

If other system busy XLIUs	Do
are present that you did not work on	step 6
are not present	step 49

10 Determine if the XLIU is a spare.

Note: The code Spre on the right of the service condition identifies a spare XLIU. The spare XLIU appears in the display in step 7. The code Rsvd on the right of the service condition identifies XLIUs that are not spares.

If the XLIU	Do
is a spare	step 12
is not a spare	step 11

PM XLIU
critical (continued)

11 Perform the procedure *How to move an XSG to a spare XLIU* in this document. Complete the procedure and return to this point.

Note: The spare XLIU must be in service.

12 To post the XLIU, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no
is the number of the selected XLIU (0 to 511)

Example of a MAP response:

```
XLIU   121 SysB      Spre
```

If the XLIU	Do
is ManB	step 31
is ManB (NA)	step 15
is other than listed here	step 13

13 To manually busy the XLIU, type

>BSY FORCE

and press the Enter key.

Example of a MAP reponse:

```
Busying XLIU 121 will take XSG channels out of service.
Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

14 To confirm the command, type

>YES

and press the Enter key.

If XLIU	Do
is ManB	step 31
is ManB (NA)	step15

15 To query the XLIU to determine if any related C-side faults occur, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

PM XLIU
critical (continued)

```
PM type: XLIU  PM No.: 121  Status: ManB(NA)
Node Number 81 XSG 1
LIM: 0  Shelf: 2  Slot: 12     XLIU FTA:  424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
    Loadname Mismatch
    Msg Channel #0 NA
    Msg Channel #1 NA
    TAP #0 OOS/NA
    TAP #1 OOS/NA
    CBUS PORT for NIU Unit 0 is not inservice
    CBUS PORT for NIU Unit 1 is not inservice
               Unit 0        Unit 1
LMS States  :  InSv          InSv
Auditing    :  No            No
Msg Channels:  NA            NA
TAP 9       :  M(NA)         M(NA)
NIU 1       :  InSv          InSv
                  .
```

16 Record the number of the LIM and the number of the F-bus tap.

Note: The number of the LIM appears on the right of the LIM header on the MAP response obtained in step 15. The number of the F-bus tap appears on the right of the TAP header.

17 To post the LIM for the XLIU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the selected XLIU (0 to 511)

Example of a MAP response:

```
LIM  0 ISTb
                    Links_OOS Taps_OOS
Unit0: ISTb             .         12
Unit1: ISTb             .         12
```

18 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP response:

PM XLIU
critical (continued)

```
LIM  0 ISTb
                    Links_OOS Taps_OOS
Unit0: ISTb             .         12
Unit1: ISTb             .         12

                Tap: 0    4    8    12   16   20   24   28   32
FBus0: ManB          BBBB BBBB BBBB BBBB.---- ---- ---- ---- ----
FBus1: ManB          BBBB BBBB BBBB BBBB.---- ---- ---- ---- ----
```

Note: In the previous example, B under a tap number indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual busy tap. An L indicates an in-service trouble tap. An S indicates a system busy tap. A dash (-) indicates a tap that is not equipped.

19 Determine the state of the LIM and both F-buses.

If the state of the LIM and both F-buses	Do
`is InSv` and `ISTb`	step 23
is other than listed here	step 20

20 Record the state of the LIM and F-buses that have faults.

21 A problem with the LIM produces a PM LIM alarm. A problem with the F-bus produces a PM LIMF alarm. Perform the correct alarm clearing procedures in this document. Complete the procedures and return to this point.

22 Go to step 32.

23 Determine the state of the F-bus taps.

Note: The tap state appears on the right of the TAP header in the MAP response that you obtained in step 15. The tap number applies to both F-buses.

If the state of	Do
one or both F-bus taps is M	step 26
one F-bus tap is M and the other F-bus tap is S	step 26
one or both F-bus taps is S	step 24
both F-bus taps is I or dot (.)	step 45

24 Select a system busy tap on which to work.

25 To manually busy the system busy F-bus tap, type

`>BSY FBUS fbus_no tap_no FORCE`

and press the Enter key.

where

fbus_no
is the number of the selected F-bus (0 or 1)

tap_no
is the number of the selected F-bus tap (0 to 35)

26 Select a manually-busy tap on which to work.

27 Determine from office records or operating company personnel why the tap is busy.

When you have permission, continue with this procedure.

28 To return the F-bus tap to service, type

`>RTS FBUS fbus_no tap_no`

and press the Enter key.

where

fbus_no
is the number of the selected F-bus (0 or 1)

tap_no
is the number of the selected F-bus tap (0 to 35)

If the RTS command	Do
passed	step 29
failed, and the system generated a card list	step 34
failed, and the system did not generate a card list	step 34
failed, with the response `local maintenance not accessible`	step 34
failed for any other reason, and you did not work on the other tap	step 29
failed for any other reason, and you worked on the other tap	step 49

PM XLIU
critical (continued)

29 Determine the state of the other tap.

Note: The tap state appears on the right of the TAP header in the MAP response that you obtained in step 15. The tap number applies to both F-buses.

If the state of the other tap	Do
is dot (.) (in service) or I (in-service trouble)	step 30
is M (manual busy)	step 27
is S (system busy)	step 25

30 To quit from the F-bus level of the MAP display, type

```
>QUIT
```

and press the Enter key.

Go to step 32.

31 To reset the XLIU, type

```
>PMRESET
```

and press the Enter key.

If the PMRESET command	Do
passed	step 33
failed	step 32

32 To load the XLIU, type

```
>LOADPM
```

and press the Enter key.

If the LOADPM command	Do
passed	step 33
failed, with no card list	step 15
failed, with a card list that contains NTEX22 as the first card on the list	step 15
failed, with a card list that contains NTEX22 as the first card on the list	step 33

If the LOADPM command	Do
failed, without a card list and you already cleared LIM, F-bus, and NIU alarms	step 49

33 To test the XLIU, type

>TST

and press the Enter key.

If the TST command	Do
passed	step 48
failed, with a card list	step 41
failed, and the message `NIU resources currently unavailable` appears	step 38
failed, with any other result	step 49

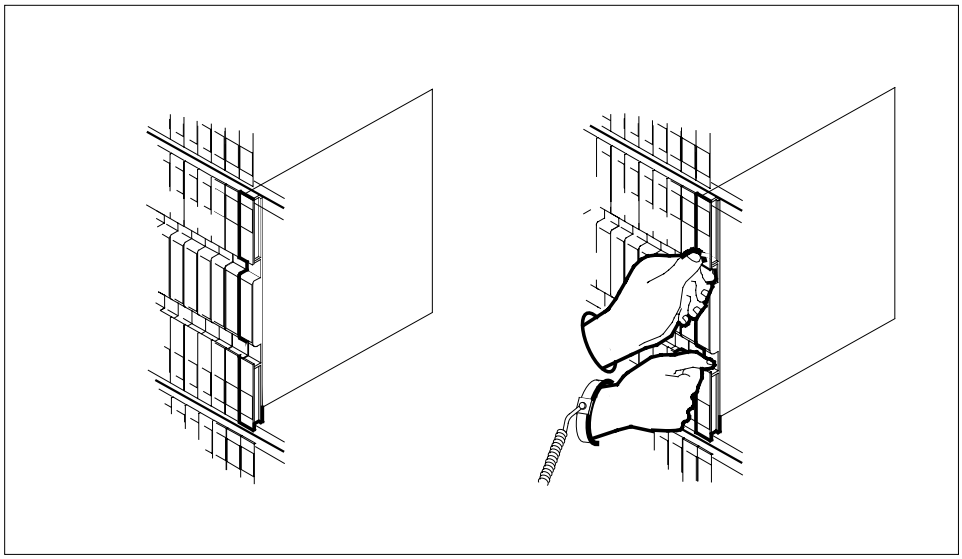
At the frame

34

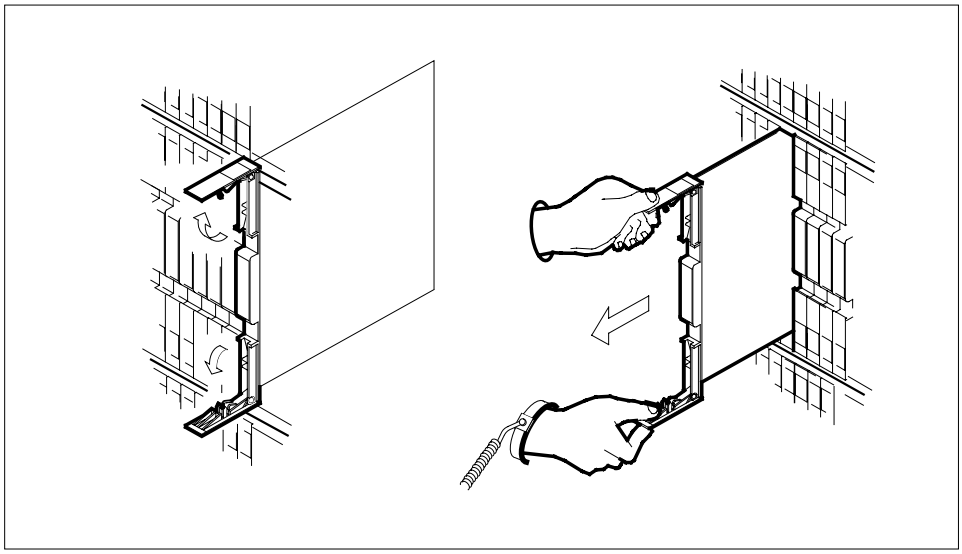
WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle cards. The wrist strap protects the cards against static electricity damage.

Locate the NTFX10 card for the XLIU.

PM XLIU
critical (continued)



35 Carefully lift the locking levers. Pull the card toward you 25 mm (1 in.).

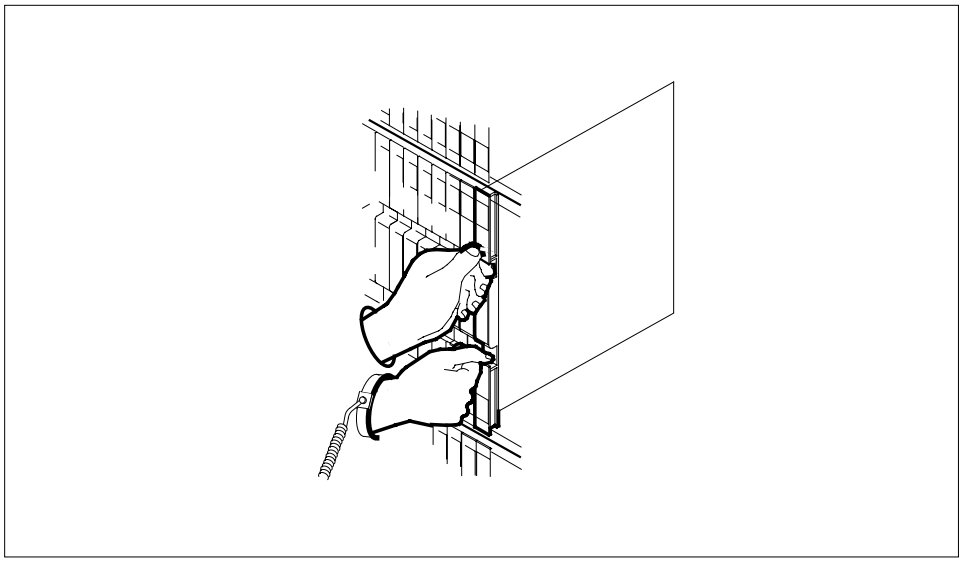


36 Seat and lock the card, as follows:

a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.

PM XLIU
critical (continued)



37 Repeat steps 34 to 36 for the NTEX22 and NTFX09 cards for the XLIU.

Go to step 32.

38 Query the state of the XLIU to determine if faults are present that relate to the NIU. To query the state of the XLIU, type

```
>QUERYPM
```

and press the Enter key.

Example of a MAP response:

PM XLIU
critical (continued)

```
PM type: XLIU  PM No.: 121  Status: ManB
Node Number 81 XSG 1
LIM: 0  Shelf: 2  Slot: 12     XLIU FTA:  424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
    NIU Unit 0 is not inservice
    CBUS PORT for NIU Unit 0 is not inservice
    NIU Unit 1 is not inservice
    CBUS PORT for NIU Unit 1 is not inservice
               Unit 0        Unit 1
LMS States  :  InSv          InSv
Auditing    :  No            No
Msg Channels:  Acc           Acc
TAP 9       :  .             .
NIU 1       :  SysB          SysB
```

If the NIU	Do
is out of service	step 39
is in service	step 49

39 A problem with the NIU produces a PM NIU alarm. Perform the correct alarm clearing procedures in this document. Complete the procedure and return to this point.

40 Go to step 31.

41 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

42 Determine if you replaced one or more cards.

If	Do
you did not use this procedure to replace one or more of the cards on the list	step 43
you used this procedure to replace all of the cards on the list	step 49

43 Replace the first card on the list that you did not replace as a result of this alarm clearing procedure. To replace the first card on the list, perform the correct procedure in *Card Replacement Procedures.* Complete the procedure and return to this point.

44 Go to step 31.

45 Determine if you already replaced the NTEX22 card.

If you	Do
already replaced the NTEX22 card	step 49
did not replace the NTEX22 card	step 46

46 To replace the NTEX22 card, perform the correct procedure in *Card Replacement Procedures.* Complete the procedure and return to this point.

47 Go to step 32.

48 To return the XLIU to service, type

>RTS F0RCE

and press the Enter key.

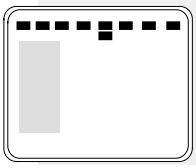
If the RTS command	Do
passed	step 50
failed	step 49

49 For additional help, contact the next level of support.

50 The procedure is complete.

PM XLIU major

Alarm display



CM	MS	IOD	Net	**PM**	CCS	Lns	Trks	Ext	APPL
.	.	.	.	**1XLIU M**	.	.	.	.	.

Indication

At the MTC level of the MAP display, XLIU (preceded by a number) appears under the PM header of the alarm banner. The XLIU indicates a major alarm for an X.25/X.75 link interface unit (XLIU).

Meaning

One or more XLIUs are manual busy or manual busy not accessible for one of the following reasons:

- The XLIU was manually busied for maintenance purposes
- The XLIU was manually busied for maintenance purposes. The XLIU does not respond to computing module (CM).

Result

The indicated number of XLIUs are out of service. The X.25/X.75 links for the XLIUs cannot carry traffic.

Common procedures

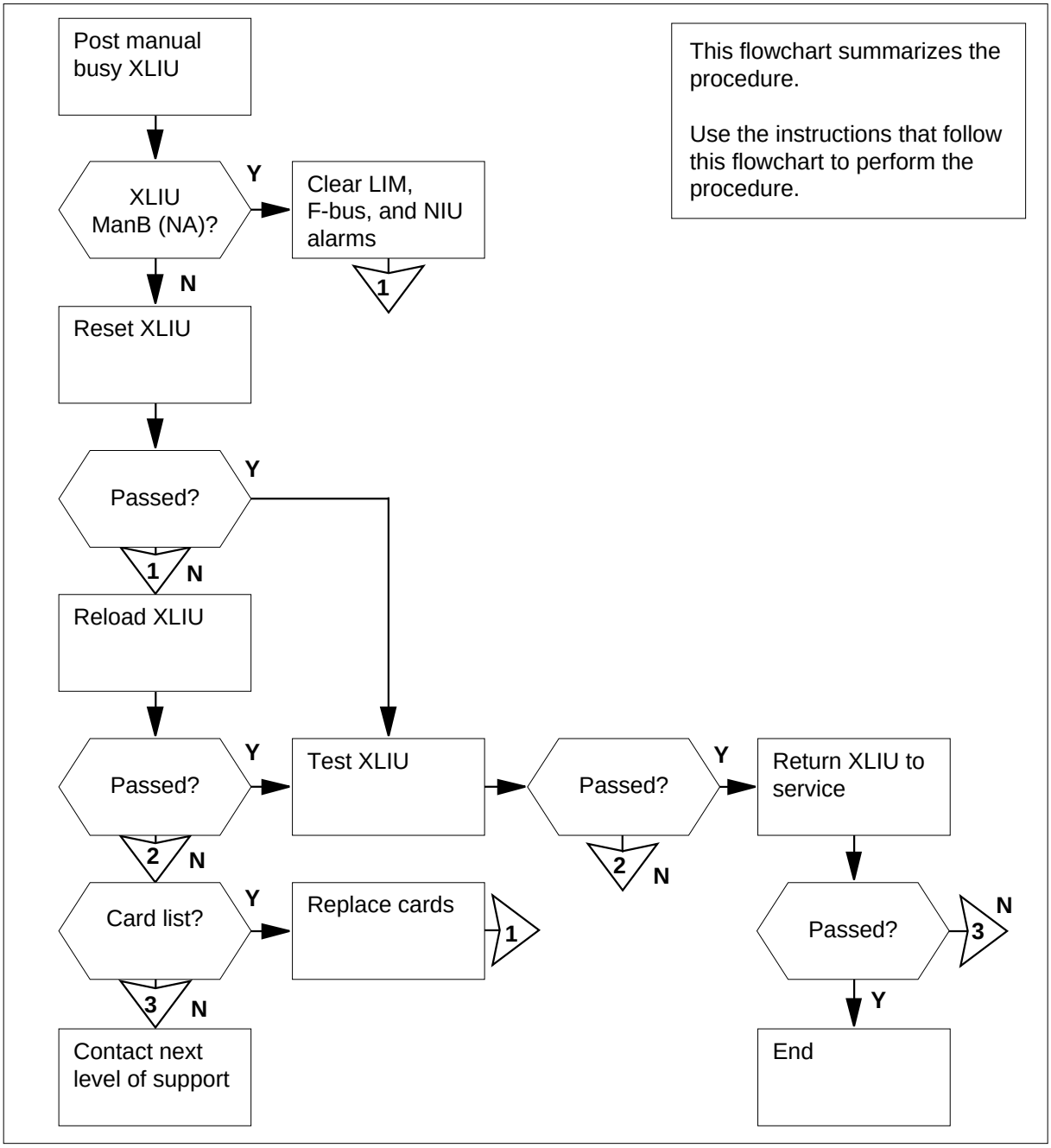
This procedure refers to *Moving an XSG to a spare XLIU*.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM XLIU
major (continued)

Summary of clearing a PM XLIU major alarm



PM XLIU
major (continued)

How to clear a PM XLIU major alarm

At the MAP terminal

1 Determine if all MS alarms cleared.

If all MS alarms	Do
cleared	step 3
did not clear	step 2

2 Perform the correct MS alarm clearing procedure in this document. Complete the procedure and return to this point.

3 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP response:

```
              SysB    ManB    OffL    CBsy    ISTb    InS
PM             38       1       3      30      16      16
```

4 To display the manual busy XLIUs, type

>DISP STATE MANB XLIU

and press the Enter key.

Example of MAP response:

```
ManB XLIU: 121,312
```

5 Record the numbers of the manual busy XLIUs.

6 Select a manual-busy XLIU to work on from the list that you recorded in step 5.

7 To post the manual-busy XLIU, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no
is the number of the selected XLIU (0 to 511)

Example of a MAP response:

```
XLIU   121 ManB      Spre
```

PM XLIU
major (continued)

8 To determine if the XLIU is in a link peripheral processor (LPP), type

>QUERYPM

and press the Enter key.

Note: The code LIM can appear on the far left side of the response on the third line. If the code LIM appears in this location, the XLIU is in an LPP.

Example of a MAP response:

```
PM type: XLIU  PM No.: 121  Status: ManB
Node Number 81 XSG 1
LIM: 0  Shelf: 2  Slot: 12     XLIU FTA:  424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
    Loadname Mismatch
    CBUS PORT for NIU Unit 0 is not inservice
    CBUS PORT for NIU Unit 1 is not inservice
               Unit 0        Unit 1
LMS States  :  InSv          InSv
Auditing    :  No            No
Msg Channels:  Acc           Acc
TAP 9       :  .             .
NIU 1       :  InSv          InSv
```

If the XLIU	Do
is in an LPP	step 10
is other than listed here	step 9

9 Determine if other manual busy XLIUs are present that you did not work on.

If other manual busy XLIUs	Do
are present that you did not work on	step 6
are not present	step 51

10 Determine from office records or operating company personnel why the XLIU is manual busy.

When you have permission, continue as directed.

11 Determine if the XLIU is a spare.

Note: The code Spre that appears on the right of the service condition identifies a spare XLIU. The code Spre appears in the display in step 7.

PM XLIU
major (continued)

The code Rsvd that appears on the right of the service condition identifies XLIUs that are not spares.

If the XLIU	Do
is a spare	step 14
is not a spare	step 12

12 Perform the procedure *Moving an XSG to a spare XLIU* in this document. Complete the procedure and return to this point.

Note: The spare XLIU must be in service.

13 To post the XLIU, type

>POST XLIU liu_no

and press the Enter key.

where

liu_no
is the number of the XLIU (0 to 511)

Example of a MAP response:

```
XLIU   121 ManB      Spre
```

14 Determine the state of the XLIU.

Note: The state of the XLIU appears on the right of the XLIU number. In the example that appears in step 13, the state of XLIU 121 is ManB.

If the XLIU	Do
is ManB	step 31
is ManB (NA)	step 15

15 To query the XLIU to determine if any related C-side faults occurred, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

PM XLIU
major (continued)

```
PM type: XLIU  PM No.: 121  Status: ManB(NA)
Node Number 81 XSG 1
LIM: 0  Shelf: 2  Slot: 12     XLIU FTA:  424E
1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
    Loadname Mismatch
    Msg Channel #0 NA
    Msg Channel #1 NA
    TAP #0 OOS/NA
    TAP #1 OOS/NA
    CBUS PORT for NIU Unit 0 is not inservice
    CBUS PORT for NIU Unit 1 is not inservice
               Unit 0        Unit 1
LMS States  :  InSv          InSv
Auditing    :  No            No
Msg Channels:  NA            NA
TAP 9       :  M(NA)         M(NA)
NIU 1       :  InSv          InSv
```

16 Record the number of the LIM and the number of the F-bus tap.

Note: The number of the LIM appears on the right of the LIM header on the MAP response. You obtained the MAP response in step 15. The number of the F-bus tap appears on the right of the TAP header.

17 To post the LIM for the XLIU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 16)

Example of a MAP response:

```
LIM  0 ISTb
                    Links_OOS Taps_OOS
Unit0: ISTb             .         12
Unit1: ISTb             .         12
```

18 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP response:

PM XLIU
major (continued)

```
LIM  0 ISTb
                    Links_OOS Taps_OOS
Unit0: ISTb             .         12
Unit1: ISTb             .         12

                Tap: 0    4    8    12   16   20   24   28   32
FBus0: ManB          BBBB BBBB BBBB BBBB.---- ---- ---- ---- ----
FBus1: ManB          BBBB BBBB BBBB BBBB.---- ---- ---- ---- ----
```

Note: In the example, B under a tap number indicates that the F-bus is manually busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An *M* indicates a manual-busy tap. An I indicates an in-service trouble tap. An S indicates a system-busy tap. A dash (-) indicates a tap that is not equipped.

19 Determine the state of the LIM and both F-buses.

If the state of the LIM and both F-buses	Do
is InSv and ISTb	step 23
is other than listed here	step 20

20 Record the state of the defecive LIM and F-buses.

21 A problem with the LIM produces a PM LIM alarm. A problem with the F-bus produces a PM LIMF alarm. Perform the correct alarm clearing procedures in this document. Complete the procedure and return to this point.

22 Go to step 33.

23 Determine the state of the F-bus taps.

Note: The tap state appears on the right of the TAP header in the MAP response. You obtained the MAP response in step 15. The tap number applies to both F-buses.

If the state of	Do
one or both F-bus taps is *M*	step 26
one F-bus tap is M and the other F-bus tap is *S*	step 26
one or both F-bus taps is *S*	step 24
both F-bus taps is *I* or dot (.)	step 46

24 Select a system busy tap on which to work.

25 To manually busy the system busy F-bus tap, type

>BSY FBUS fbus_no tap_no FORCE

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

Go to step 28.

26 Select a manual-busy tap on which to work.

27 Determine from office records or operating company personnel why the tap is busy.

When you have permission, continue as directed.

28 To return the F-bus tap to service, type

`>RTS FBUS fbus_no tap_no`

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

If the RTS command	Do
passed	step 29
failed, and the system generated a card list	step 35
failed, and the system did not generate a card list	step 35
failed, with the response `local maintenance not accessible`	step 35
failed for any other reason, and you did not work on the other tap	step 29
failed for any other reason, and you worked on the other tap	step 50

29 Determine the state of the other tap.

If the state of the other tap	Do
is dot (.) (in service) or *I* (in-service trouble)	step 30
is *M* (manual busy)	step 27

PM XLIU
major (continued)

If the state of the other tap	Do
is S (system busy)	step 25

30 To quit from the F-bus level of the MAP display, type

>QUIT

and press the Enter key.

Go to step 33.

31 To return the XLIU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed, and the state is `InSv` or `ISTb`	step 51
failed, and the state is `SysB`	step 32

32 To reset the XLIU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 34
failed	step 33

33 To load the XLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 34
failed, without a card list	step 15
fails, with a card list that contains NTEX22 as the first card on the list	step 15
fails, with a card list that contains NTFX09 or NTFX10 as the first card on the list	step 34

If the LOADPM command	Do
failed, without a card list and you already cleared LIM, F-bus, NIU alarms	step 50

34 To test the XLIU, type

>TST

and press the Enter key.

If the TST command	Do
failed, with a card list	step 42
failed, and the message `NIU resources currently unavailable` appears	step 39
passed	step 49
other than listed here	step 50

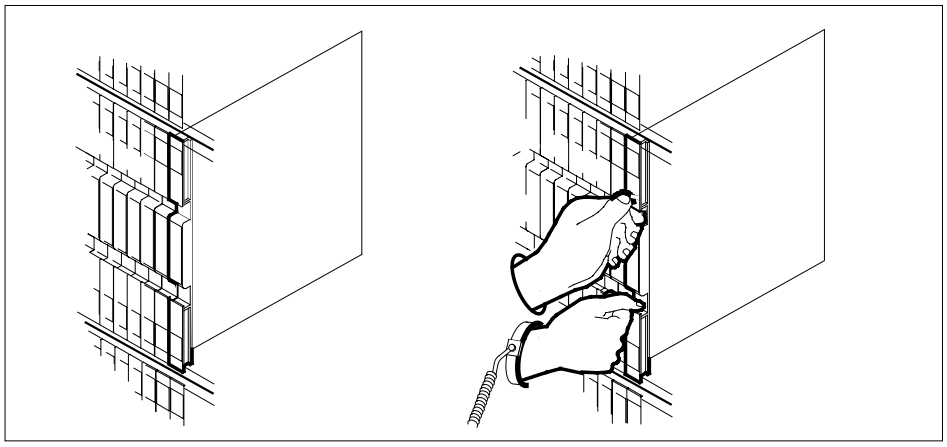
At the frame

35

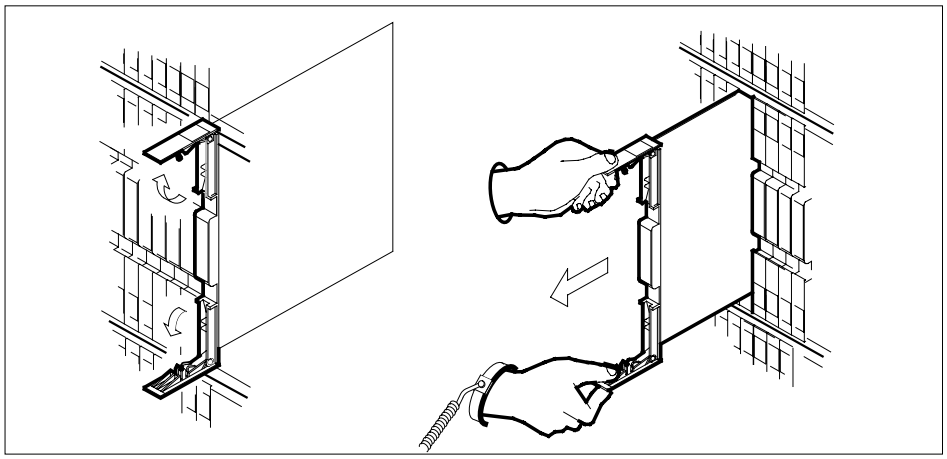
DANGER
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point on the frame supervisory panel (FSP) to handle cards. The wrist strap protects the cards against static electricity damage.

Locate the NTFX10 card for the XLIU.

PM XLIU
major (continued)



36 Carefully lift the locking levers. Pull the card toward you 25 mm (1 in.).

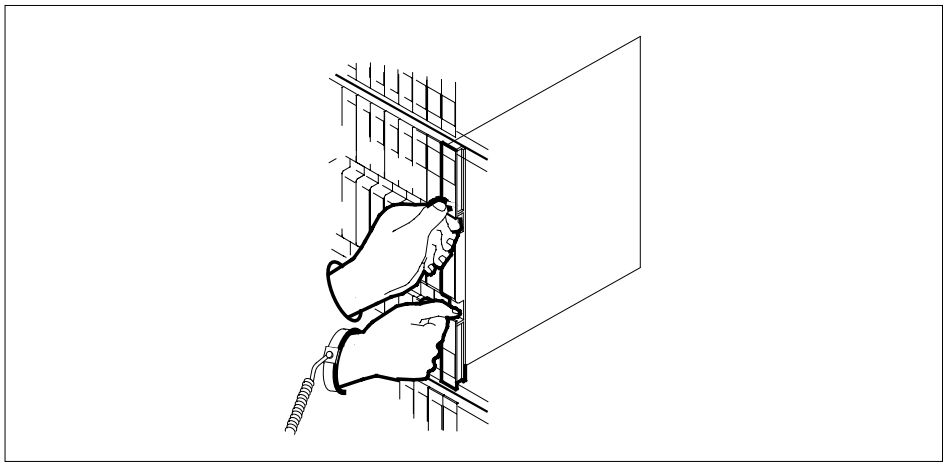


37

Seat and lock the card, as follows:

a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.



38 Repeat steps 35 to 37 for the NTEX22 and NTFX09 cards for the XLIU.

Go to step 33.

39 Query the state of the XLIU to determine if faults are present that relate to the NIU. To query the state of the XLIU, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

```
PM type: XLIU  PM No.: 121  Status: ManB
Node Number 81 XSG 1
LIM: 0  Shelf: 2  Slot: 12     XLIU FTA:  424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Potential service affecting conditions:
    NIU Unit 0 is not inservice
    CBUS PORT for NIU Unit 0 is not inservice
    NIU Unit 1 is not inservice
    CBUS PORT for NIU Unit 1 is not inservice
                Unit 0        Unit 1
LMS States  :   InSv          InSv
Auditing    :   No            No
Msg Channels:   Acc           Acc
TAP 9       :   .             .
NIU 1       :   SysB          SysB
```

If the NIU	Do
is out of service	step 40

PM XLIU
major (end)

If the NIU	Do
is in service	step 50

40 A problem with the NIU produces a PM NIU alarm. Perform the correct alarm clearing procedures in this document. Complete the procedure and return to this point.

41 Go to step 32.

42 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

43 Determine if you replaced one or more cards.

If	Do
you did not use this procedure to replace one or more of the cards on the list	step 44
you used the procedure to replace all cards on the list	step 50

44 Replace the first card on the list that you did not replace as a result of this alarm clearing procedure. Perform the correct procedure in *Card Replacement Procedures.* Complete the procedure and return to this point.

45 Go to step 32 .

46 Determine if you already replaced the NTEX22 card.

If you	Do
already replaced the NTEX22 card	step 50
did not replace the NTEX22 card	step 47

47 To replace the NTEX22 card, perform the correct procedure in *Card Replacement Procedures.*. Complete the procedure and return to this point.

48 Go to step 33.

49 To return the XLIU to service, type

>RTS F0RCE

and press the Enter key.

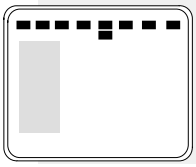
If the RTS command	Do
passed	step 51
failed	step 50

50 For additional help, contact the next level of support.

51 The procedure is complete.

PM XLIU minor

Alarm display



CM	MS	IOD	Net	**PM**	CCS	Lns	Trks	Ext	APPL
.	.	.	.	**1XLIU**	.	.	.	.	.

Indication

At the MTC level of the MAP display, XLIU (preceded by a number) appears under the PM header of the alarm banner. The XLIU indicates a minor alarm for an X.25/X.75 link interface unit (XLIU).

Meaning

One or more XLIUs are in-service trouble for one of the following reasons:

- load name does not match
- one tap is out of service
- one link interface module (LIM) unit is out of service
- one F-bus is out of service
- one network interface unit (NIU) is out of service

The number under the PM header of the alarm banner indicates the number of affected XLIUs.

Result

The XLIUs with in-service trouble continue to function. The condition does not affect traffic on X.25/X.75 links that connect to XLIUs with minor alarms.

Common procedures

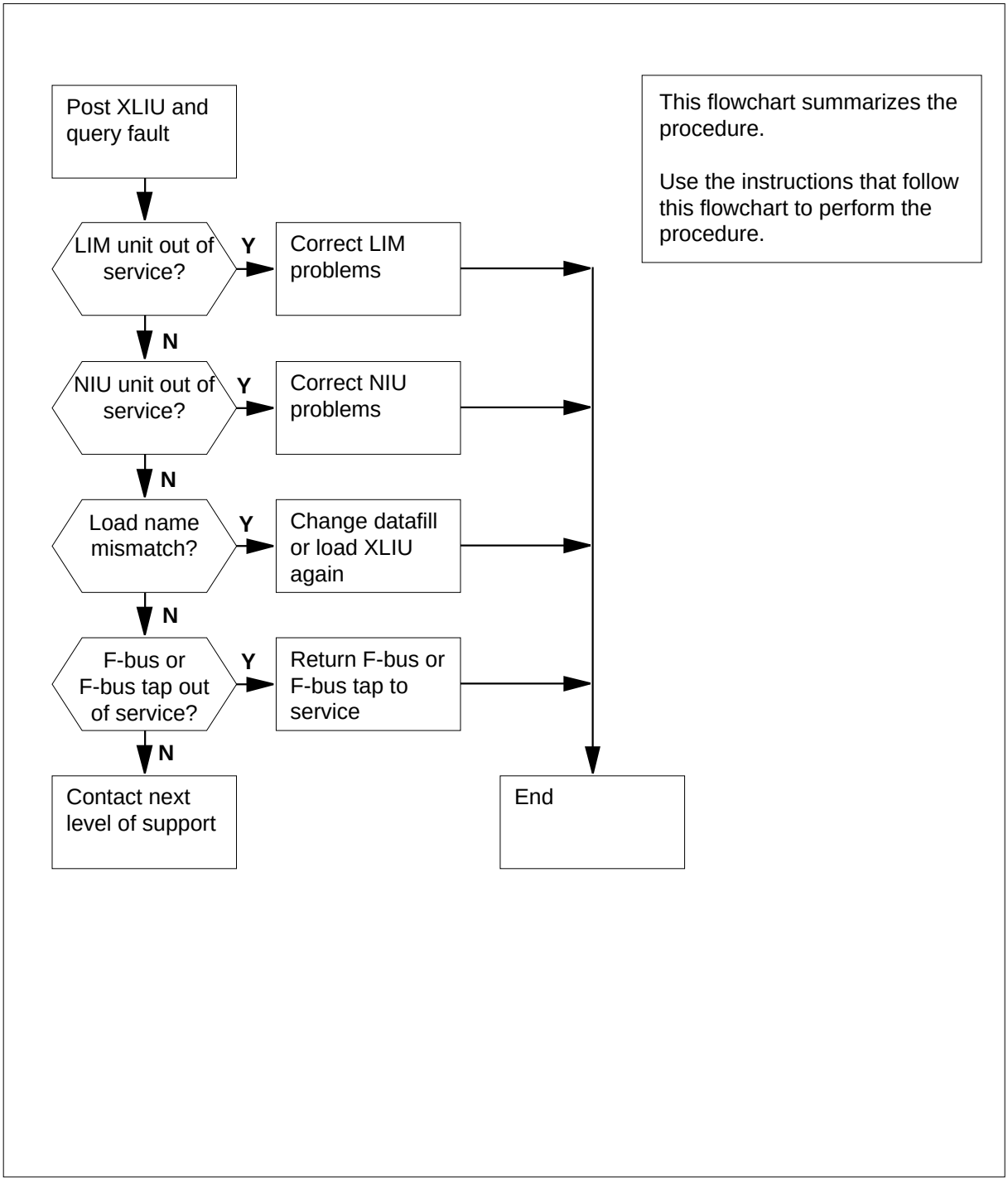
This procedure refers to *Moving an XSG to a spare XLIU*.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

PM XLIU
minor (continued)

Summary of Clearing a PM XLIU minor alarm



Clearing a PM XLIU minor alarm

At the MAP terminal

1

> **CAUTION**
> **Possible action that affects service**
> The completion of the following procedure can require the removal of an XLIU from service. The removal results in loss of service on the associated X.25/X.75 channels. If instructions direct you to busy an XLIU, busy the XLIU during a period of low traffic.

Determine if all MS alarms cleared.

If all MS alarms	Do
cleared	step 3
did not clear	step 2

2 Perform the correct MS alarm clearing procedure in this document. Complete the procedure and return to this point.

3 To access the PM level of the MAP display, type

`>MAPCI;MTC;PM`

and press the Enter key.

Example of a MAP response:

```
          SysB    ManB    OffL    CBsy    ISTb    InSv
PM          38       1       3      30      16      16
```

4 To display the in-service trouble XLIUs, type

`>DISP  STATE  ISTB  XLIU`

and press the Enter key.

Example of a MAP response:

```
ISTb XLIU: 121,312
```

5 Record the numbers of the in-service trouble XLIUs.

6 Select an in-service trouble XLIU to work on from the list that you recorded in step 5.

PM XLIU
minor (continued)

7 To post the in-service trouble XLIU, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no
is the number of the selected XLIU (0 to 511)

Example of a MAP display:

```
XLIU   121 ISTb      Rsvd
```

8 To determine if the XLIU is in a link peripheral processor (LPP), type

>QUERYPM

and press the Enter key.

Note: The code LIM can appear on the far left of the response on the third line. If the code LIM appears in this location, the XLIU is in an LPP.

Example of a MAP response:

```
PM type: XLIU  PM No.: 121  Status: ISTb
Node Number 81 XSG 1
LIM: 0  Shelf: 2  Slot: 12     XLIU FTA:  424E 1000
Default load: XRX36CJ
Running load: XRX36CJ
Istb conditions:
    Msg Channel #0 NA
    TAP #0 OOS/NA
                Unit 0        Unit 1
LMS States  :  InSv           InSv
Auditing    :  No             Yes
Msg Channels:  NA             Acc
TAP 9       :  M              .
NIU 1       :  InSv           InSv
```

If the XLIU	Do
is in an LPP	step 10
is in other than listed here	step 9

9 Determine if other in-service trouble XLIUs that you did not work on are present.

If other in-service trouble XLIUs	Do
that you did not work on are present	step 6

PM XLIU
minor (continued)

If other in-service trouble XLIUs	Do
are not present	step 85

10 To query the fault reason, type

>QUERYPM FLT

and press the Enter key.

Note: The fault reason appears below the Istb conditions header in the MAP response.

Example of a MAP response:

```
Istb conditions:
    Msg Channel #0 NA
    TAP #0 OOS/NA
```

11 Determine the fault reason for the post XLIU.

If the fault reason	Do
is `Msg Channel #x NA TAP #x OOS/NA Host Unit x is not inservice`	step 12
is `NIU unit x is not inservice CBUS PORT for NIU Unit x is not inservice`	step 20
is `Loadname mismatch`	step 28
is `Msg Channel #x NA TAP #x OOS/NA`	step 42
repeatedly switches between two or more of the above reasons	step 85

12 Determine from the MAP response that you obtained in step 8 the number of the LIM for the XLIU.

If the response cleared from the MAP display, obtain another query result. To obtain another query result, type

>QUERYPM

and press the Enter key.

Note: The LIM number appears on the third line of the MAP response.

13 To post the LIM for the in-service trouble XLIU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the LIM number (0 to 16)

PM XLIU
minor (continued)

Example of a MAP response:

```
LIM  0 ISTb
                  Links_OOS
Taps_OOS
Unit0: ISTb           .         2
Unit1: InSv           .         0
```

14 Determine the state of both LIM units.

If the state of	Do
both LIM units is InSv or ISTb	step 17
one LIM unit is in any other state	step 15

15 Record the number and the state of the LIM unit that has faults.

16 A problem with the LIM unit produces a PM LIM alarm. Perform the correct LIM alarm clearing procedure in this document. Complete the procedure and return to this point.

17 To post the XLIU, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no
is the number of the selected XLIU (0 to 511)

Example of a MAP response:

```
XLIU   121 InSv      Rsvd
```

If the state of the XLIU	Do
is InSv	step 86
is ISTb	step 18
is other than listed here	step 19

18 To query the fault reason, type

>QUERYPM FLT

and press the Enter key.

If the fault reason	Do
changed	step 11

PM XLIU
minor (continued)

If the fault reason	Do
did not change	step 86

19 The state of the XLIU deteriorated. Alarm severity increased. Perform the correct XLIU alarm clearing procedure in this document.

20 Determine from the MAP response that you obtained in step 8 the number of the NIU for the XLIU.

If the response cleared from the MAP display, obtain another query result. To obtain another query result, type

>QUERYPM

and press the Enter key.

Note: The NIU number appears on the last line of the MAP response.

21 To post the NIU for the in-service trouble XLIU, type

>POST NIU niu_no

and press the Enter key.

where

niu_no
is the NIU number (0 to 29)

Example of a MAP response:

```
NIU 1:  ISTb
Unit 0:  InAct ManB
Unit 1:  Act   ISTb
```

22 Determine the state of the NIU units.

Note: The state of the NIU units appears on the left side of the activity status for each unit. In the example, Unit 0 is ManB and Unit 1 is InSv.

If the state of	Do
both NIU units is `InSv` or `ISTb`	step 25
one NIU unit is in any other state	step 23

23 Record the number and the state of the NIU unit that has faults.

24 A problem with the NIU unit produces a PM NIU alarm. Perform the correct NIU alarm clearing procedure in this document. Complete the procedure and return to this point.

25 To post the XLIU, type

>POST XLIU xliu_no

and press the Enter key.

where

PM XLIU
minor (continued)

xliu_no
is the number of the selected XLIU (0 to 511)

Example of a MAP response

```
XLIU   121 InSv      Rsvd
```

If the state of the XLIU	Do
is InSv	step 86
is ISTb	step 26
is other than listed here	step 27

26 To query the fault reason, type

>QUERYPM FLT

and press the Enter key.

If the fault reason	Do
changed	step 11
did not change	step 86

27 The state of the XLIU deteriorated. Alarm severity increased. Perform the correct XLIU alarm clearing procedure in this document.

28 Determine the default load and the running load for the XLIU from the MAP response that you obtained in step 8.

If the response cleared from the MAP display, obtain another query result. To obtain another query result, type

>QUERYPM

and press the Enter key.

Note: The name of the default load appears next to the Default Load header in the MAP response. The name of the running load appears on the right of the Running Load header.

29 Determine from office records or operating company personnel the correct name for the load.

If	Do
both the default load name and the running load name do not match the load name that you obtained from office records	step 30
only the default load name does not match the load name that you obtained from office records	step 30

PM XLIU
minor (continued)

If	Do
only the running load name does not match the load name that you obtained from office records	step 38

30 To access table LIUINV, type

>TABLE LIUINV

and press the Enter key.

Example of a MAP response:

```
TABLE: LIUINV
```

31 To position on the datafill for the XLIU, type

>POSITION xliu_no

and press the Enter key.

where

xliu_no
is the number of the XLIU (0 to 511)

Example of a MAP response:

```
XLIU 121   LIM  0 2 12  XRX35CJ    NTEX22BB
                                      NTFX10AA NTFX09AA
```

32 Change the load name that you datafilled for the XLIU to match the name that you obtained from office records. To change the load name, type

>CHANGE LOAD

and press the Enter key

Example of a MAP response:

```
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
```

33 To confirm the command, type

>Y

and press the Enter key.

34 To enter the correct load name, type

>loadname

and press the Enter key.

where

loadname
is the name of the correct load

Example of a MAP response:

PM XLIU
minor (continued)

```
TUPLE TO BE CHANGED:
XLIU 121   LIM  0 2 12  XRX36CJ    NTEX22BB
                                       NTFX10AA NTFX09AA
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

35 To confirm the command, type

>Y

and press the Enter key.

36 To quit table LIUINV, type

>QUIT

and press the Enter key.

37 Determine if the name of the running load matches the load name that you obtained from office records.

If the running load name	Do
does not match the name that you obtained from office records	step 38
matches the name that you obtained from office records	step 86

38 Determine if the XLIU is a spare.

Note: The code Spre that appears on the right of the service condition identifies a spare XLIU. The code Spre appears in the MAP display in step 8. The code Rsvd that appears on the right of the service condition identifies XLIUs that are not spares.

If the XLIU	Do
is a spare	step 41
is not a spare	step 39

39 Perform the procedure *How to move an XSG to a spare XLIU* in this document. Complete the procedure and return to this point.

Note: The spare XLIU must be in service.

40 Determine the state of the XLIU.

Note: The XLIU is the one with the fault. The X.25/X.75 service group (XSG) moved to another in-service XLIU.

If the XLIU	Do
is ManB	step 82
is other than listed here	step 41

PM XLIU
minor (continued)

41 To manually busy the XLIU, type

>BSY FORCE

and press the Enter key

Go to step 82.

42 Determine the number of the LIM from the MAP response that you obtained in step 8. The LIM associates with the XLIU and the tap number.

If the response cleared from the MAP display, obtain another query result. To obtain another query result, type

>QUERYPM

and press the Enter key

Note: The LIM number appears on the third line of the MAP response. The tap number appears on the right of the TAP header of the MAP response.

43 Record the number of the LIM and the number of the F-bus tap.

Note: The number of the LIM appears on the right of the LIM header on the MAP response. You obtained the MAP response in step 8. The number of the F-bus tap appears on the right of the TAP header.

44 To post the LIM for the XLIU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 16)

Example of a MAP response:

```
LIM  0 ISTb
                    Links_OOS Taps_OOS
Unit0: ISTb             .         12
Unit1: InSv             .         0
```

45 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP response:

```
LIM  0 ISTb
                    Links_OOS Taps_OOS
Unit0: ISTb             .         12
Unit1: InSv             .         0

                 Tap: 0    4    8    12   16   20   24   28   32
FBus0: ManB          BBBB BBBB BBBB BBBB.---- ---- ---- ---- ----
FBus1: InSv          .... .... .... .....---- ---- ---- ---- ----
```

PM XLIU
minor (continued)

Note: In the example, B under a tap number indicates that the F-bus is manual busy. The letter B also can indicate that the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual busy tap. An L indicates an in-service trouble tap. An S indicates a system busy tap. A dash (-) indicates a tap that is not equipped.

46 Determine the state of the F-buses.

Note: The state of the F-buses appears on the right side of the F-bus header on the MAP display.

If the state of	Do
one of the F-buses is SysB or ManB and the other is InSv or ISTb	step 47
both F-buses is ManB or ISTb	step 54

47 Record the state of the F-bus that has faults

48 A problem with an F-bus produces a PM LIMF alarm. Perform the correct PM LIMF alarm clearing procedures in this document. Complete the procedure and return to this point.

49 To post the XLIU, type

>PM;POST XLIU xliu_no

and press the Enter key.

where

xliu_no
is the number of the selected XLIU (0 to 511)

Example of a MAP response:

```
XLIU   121 InSv      Rsvd
```

If the state of the XLIU	Do
is InSv>	step 86
is ISTb	step 51
is other than listed here	step 50

50 The state of the XLIU deteriorated. Alarm severity increased. Perform the correct XLIU alarm clearing procedure in this document.

51 To query the fault reason, type

>QUERYPM FLT

and press the Enter key.

If the fault reason	Do
changed	step 11
did not change	step 52

52 To post the LIM for the XLIU, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 16)

Example of a MAP response:

```
LIM  0 InSv
                    Links_OOS Taps_OOS
Unit0: InSv             .         1
Unit1: InSv             .         0
```

53 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP response:

```
LIM  0 InSv
                   Links_OOS Taps_OOS
Unit0: InSv            .         1
Unit1: InSv            .         0

               Tap: 0    4    8    12   16   20   24   28   32
FBus0: InSv         .... .... .S.. .....---- ---- ---- ---- ----
FBus1: InSv         .... .... .... .....---- ---- ---- ---- ----
```

If the state of both F-buses	Do
is InSv or ISTb	step 54
is other than listed here	step 85

PM XLIU
minor (continued)

54 Determine the state of the F-bus taps for the XLIU from the MAP response that you obtained in the previous step.

Note: The tap state appears on the right of the TAP header in the MAP response in the previous step. The tap number applies to both F-buses.

If the state of	Do
both F-bus taps is *I* or dot (.) and the state of the associated XLIU is not *InSv*	step 55
both F-bus taps is *I* or dot (.) and the state of the associated XLIU is *InSv*	step 56
one F-bus tap is *S*	step 58
one F-bus tap is *M*	step 61

55 To query the fault reason, type

>QUERYPM FLT

and press the Enter key.

If the fault reason	Do
changed	step 11
did not change	step 85

56 The system corrected the cause of the XLIU minor alarm. The alarm cleared.

Go to step 86.

57 Select a system busy tap on which to work.

58 To manually busy the system busy F-bus tap, type

>BSY FBUS fbus_no tap_no FORCE

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

Go to step 61.

59 Select a manual-busy tap on which to work

60 Determin from office records or operating company personnel why the tap is busy.

When you have permission, continue this procedure.

PM XLIU
minor (continued)

61 To return the F-bus tap to service, type

>RTS FBUS fbus_no tap_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

tap_no
is the number of the F-bus tap (0 to 35)

If the command	Do
passed	step 62
failed, and the system generated a card list	step 74
failed, and the system did not generate a card list	step 65
failed, with the response `local maintenance not accessible`	step 65
failed, with any other response	step 85

62 To post the XLIU, type

>PM;POST XLIU xliu_no

and press the Enter key.

where

xliu_no
is the number of the selected XLIU (0 to 511)

Example of a MAP response:

```
XLIU   121 InSv      Rsvd
```

If the state of the XLIU	Do
is `InSv`	step 86
is `ISTb`	step 63
is other than listed here	step 64

63 To query the fault reason, type

>QUERYPM FLT

PM XLIU
minor (continued)

and press the Enter key.

If the fault reason	Do
changed	step 11
did not change	step 85

64 The state of the XLIU deteriorated. Alarm severity increased. Exit this procedure and perform the correct XLIU alarm clearing procedure in this document. Do not return to this procedure.

65 To post the XLIU, type

>PM;POST XLIU xliu_no

and press the Enter key.

where:

xliu_no
is the number of the selected XLIU (0 to 511)

Example of a MAP display:

```
XLIU   121 ISTb      Rsvd
```

66 Determine if the XLIU is a spare.

Note: The code Spre that appears on the right of the service condition identifies a spare XLIU. The code appears in the MAP in step 65. The code Rsvd that appears on the right of the service condition identifies XLIUs that are not spares.

If the XLIU	Do
is a spare	step 69
is not a spare	step 67

67 Perform the procedure *How to move an XSG to a spare XLIU* in this document. Complete the procedure and return to this point.

Note: The spare XLIU must be in service.

68 Determine the state of the XLIU.

Note: The XLIU that you are working on is the one with the fault. The X.25/X.75 service group (XSG) moved to another in-service XLIU.

If the XLIU	Do
is ManB	step 70
is other than listed here	step 69

69 To manually busy the XLIU, type

>BSY FORCE

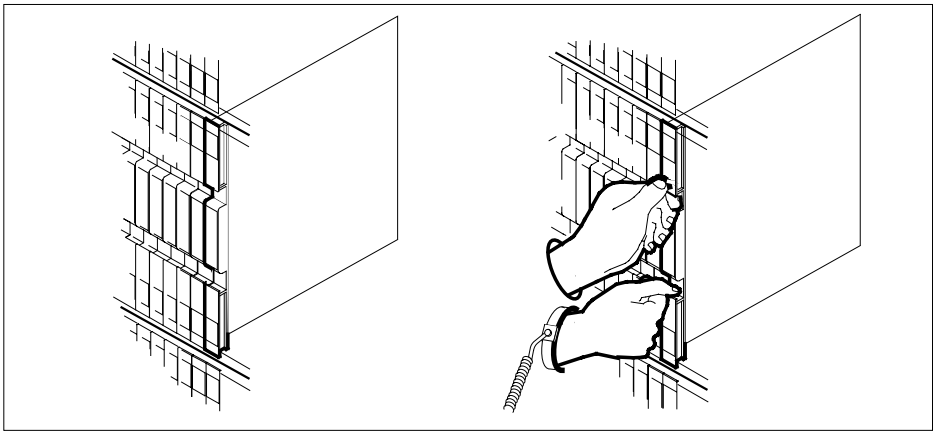
and press the Enter key.

At the frame

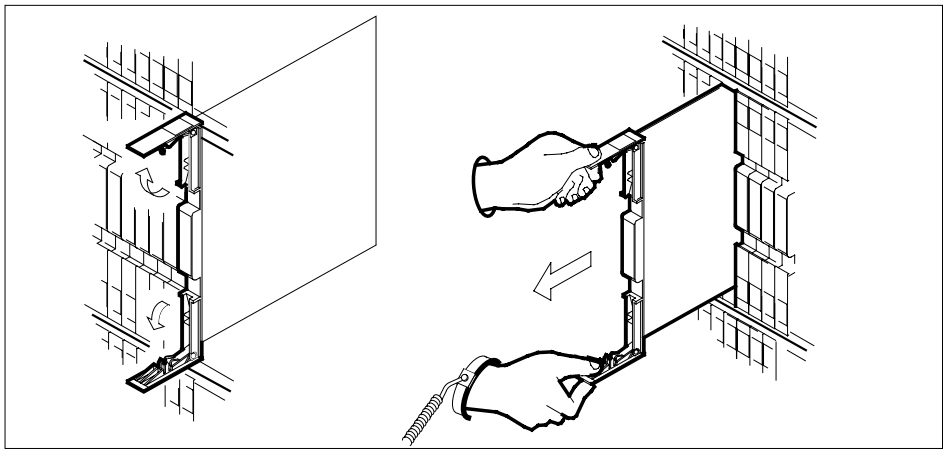
70

WARNING
Static electricity damage
Wear a wrist strap that connects to the wrist-strap grounding point of the frame supervisory panel (FSP) to handle cards. The wrist strap protects the cards against static electricity damage.

Locate the NTFX10 card for the XLIU that you are working on.



71 Carefully lift the locking levers. Pull the card toward you 25 mm (1 in.).

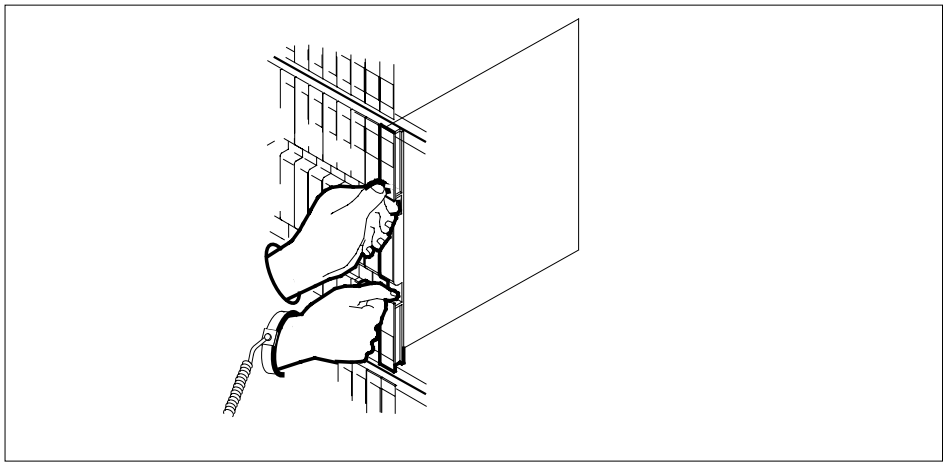


72 Seat and lock the card, as follows:

PM XLIU
minor (continued)

a Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

b Close the locking levers.



73 Repeat steps 70 to 72 for the NTEX22 and NTFX09 card for the XLIU.

Go to step 82.

74 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

75 To post the XLIU, type

`>PM;POST XLIU xliu_n`

and press the Enter key.

where

xliu_no
is the number of the selected XLIU (0 to 511)

Example of a MAP display:

```
XLIU   121 ISTb      Rsvd
```

76 Determine if the XLIU is a spare.

Note: The code Spre that appears on the right of the service condition identifies a spare XLIU. The code appears in the MAP display in step 65. The code Rsvd that appears on the right of the service condition identifies the XLIUs that are not spares.

If the XLIU	Do
is a spare	step 79
is not a spare	step 77

PM XLIU
minor (continued)

77 Perform the procedure *How to move an XSG to a spare XLIU* in this document. Complete the procedure and return to this point.

Note: The spare XLIU must be in service.

78 Determine the state of the XLIU.

If the XLIU	Do
is ManB	step 80
is other than listed here	step 79

79 To manually busy the XLIU, type

>BSY FORCE

and press the Enter key

80 Replace the first card on the list that you did not replace as a result of this alarm clearing procedure. Perform the correct procedure in *Card Replacement Procedures.* Complete the procedure and return to this point.

81 Go to step 82.

82 To load the XLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 83
failed without a card list, and you reseated all cards	step 85
failed without a card list, and you did not reseat all cards	step 70
fails with a card list, and you did not replace one or more of the cards on the list	step 80
failed with a card list and you replaced all cards on the list	step 85

83 To test the XLIU, type

>TST

and press the Enter key.

If the TST command	Do
passed	step 84

PM XLIU
minor (end)

If the TST command	Do
fails with a card list and you did not replace one or more of the cards on the list	step 80
failed with a card list and you replaced all cards on the list	step 85

84 To return the XLIU to service, type

>RTS F0RCE

and press the Enter key.

If the RTS command	Do
passed	step 86
failed	step 85

85 For additional help, contact the next level of support.

86 The procedure is complete.

2 Trunks alarm clearing procedures

Introduction

This chapter contains trunks alarm clearing procedures. Trunks alarms appear under the Trks header of the alarm banner in the MAP display. All procedures contain the following sections:

- Alarm display
- Indication
- Meaning
- Result
- Common procedures
- Action

Alarm display

This section indicates how the alarm appears at the MAP terminal.

Indication

This section indicates:

- the location of the alarm indicator
- the representation of the alarm
- the affected subsystem
- the alarm severity

Meaning

This section indicates the cause of the alarm.

Result

This section describes the results of the alarm condition.

Common procedures

This section lists common procedures used during the alarm clearing procedure. A common procedure is a series of steps repeated in maintenance

procedures. The removal and replacement of a card is an example of a common procedure. The common procedures chapter in this NTP contains common procedures.

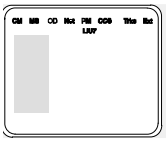
Do not go to the common procedure unless the step-action procedure directs you to go.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

TRKS 62CG AIS SPM minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks 62CG**	Ext	APPL
.	.	.	.	.	.	.		.	.
.	.	.	.	.	.	.		.	.

Indication

At the carrier level of the MAP teminal, a CG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects an alarm indication signal (AIS). The SPM generates the AIS alarm when an unbroken sequence of frames with AIS signals is detected for a duration of 2.5 s. The SPM clears the alarm when an AIS is not detected for 10 s.

Logs CARR300 and CARR310 relate to the AIS alarm. Table MNHSCARR contains datafill related to the AIS alarm.

Impact

Service is not affected.

The AIS alarm applies to the following carrier types:

- STS-3L
- STS-1P
- VT-1.5P
- DS-3P
- DS-1P

Common procedures

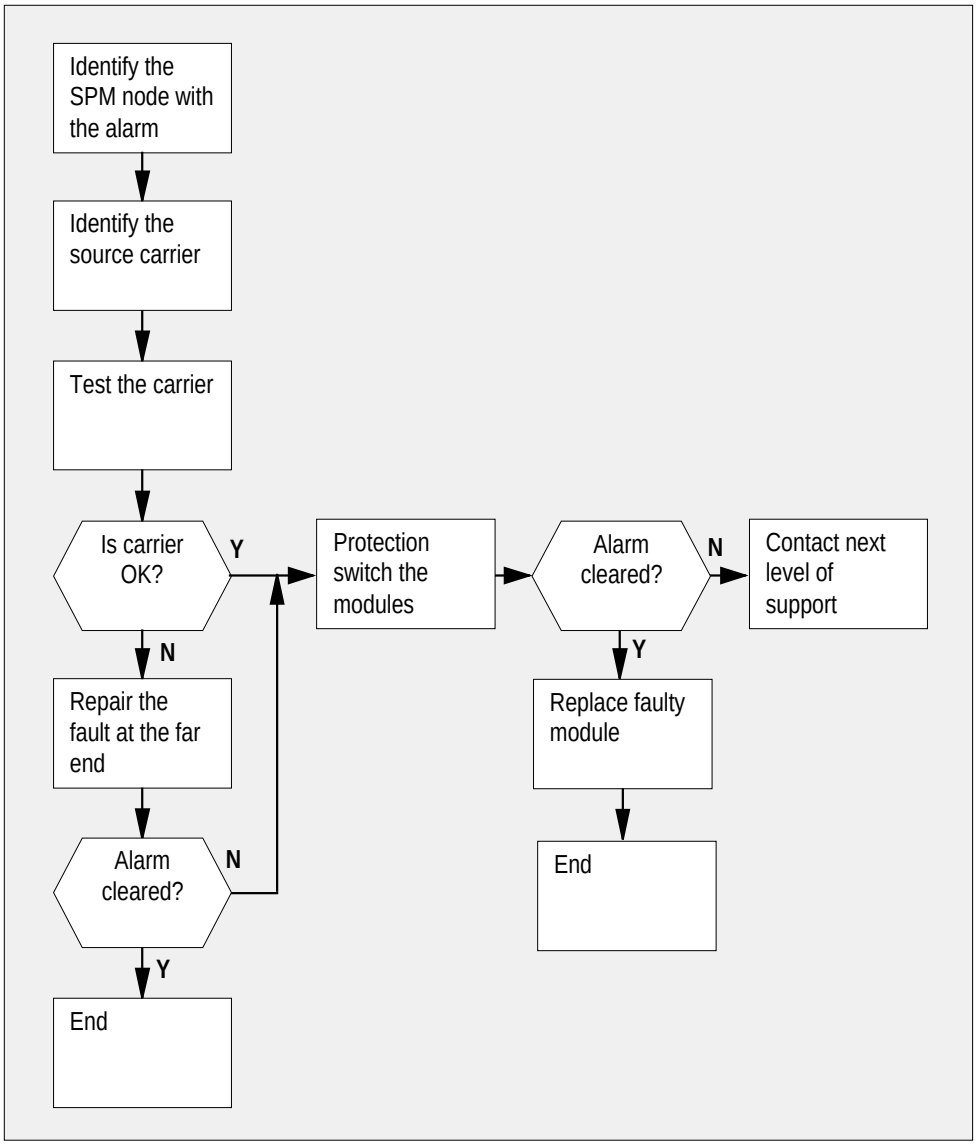
See “Accessing SPM alarms."

TRKS 62CG AIS SPM
minor (continued)

Action

The following flowchart is only a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing an AIS alarm



TRKS 62CG AIS SPM
minor (continued)

Clearing an AIS alarm

At the MAP terminal

1 Access the carrier level of the MAP screen by typing

> MAPCI;MTC;TRKS;CARRIER

and pressing the Enter key.

Example of a MAP screen:

```
CLASS    ML   OS ALRM  SYSB  MANB UNEQ OFFL  CBSY PBSY  INSV
TRUNKS    1    0   28    28     0    0    0     0    0    50
TIMING    0    0    0     0     0    0    0     0    0     2
HSCARR    0    0    0     1     3    0    1     0    0   180

MTC:
TRKS:
CARRIER:
```

2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

```
PM    NO CKT     PM    NO CKT     PM    NO CKT     PM    NO CKT
DTC    0  13     DTC    0  14     DTC    0  15     DTC    0  18
SPM   20  29     SPM   20  30     SPM   20  31     SPM   20  32


DISPLAYED BY CONDITION : ALARM
DISP:
MORE...
```

3 Record the SPM number (NO) and circuit (CKT) number combinations.

4 Post each SPM carrier circuit with an alarm by typing

>POST SPM spm_no ckt_no

and pressing the Enter key.

where

spm_no
is the number of the SPM (0 to 63)

TRKS 62CG AIS SPM
minor (continued)

ckt_no
is the number of the circuit (0 to 181)

Example of a MAP screen:

```
STS1P
N  CLASS  SITE SPM STS1P  DS3P VT15P  DS1P CKT STATE  MA
0  HSCARR HOST  20     2     –     –     –  33 InSv   --


SIZE OF POSTED SET  :  30                    MORE...
```

5 Test the carrier by typing

`>TST carrier_no`

and pressing the Enter key.

where

carrier_no
is the number of the carrier (0 to 4)

6 Determine whether the carrier signal is valid.

If the test result shows	Do
test passed	step 9
test failed	step 7

7 Troubleshoot the carrier circuit according to your company procedures. When you have completed the procedure, return to this point.

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits.

8 List the alarms on the carrier by typing

`>LISTALM carrier_no`

and pressing the Enter key.

where

carrier_no
is the number of the carrier (0 to 4)

If the alarm list shows	Do
None	step 18
AIS	step 9

TRKS 62CG AIS SPM
minor (continued)

9 Access the PM level of the MAP screen by typing

>MAPCI;MTC;PM

and pressing the Enter key.

Example of a MAP screen:

```
      SysB    ManB    OffL    CBsy    ISTb    InSv
PM     1       1       1       3       2      12
```

10 Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no
refers to number of the SPM (0 to 63)

Example of a MAP screen:

```
          SysB    ManB    OffL    CBsy    ISTb    InSv
 PM         7       2       2       2       9      16
 SPM        0       2       1       0       0       0

SPM   20  InSv  Loc: Site HOST Floor  1 Row A  FrPos 13

Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
-----  1 - ----  CEM 1  8 I InSv  -----  1 - ----  -----  8 - ----
-----  2 - ----  OC3 0  9 A InSv  -----  2 - ----  -----  9 - ----
DSP 3  3 I InSv  OC3 1 10 I InSv  -----  3 - ----  ----- 10 - ----
-----  4 - ----  ----- 11 - ----  -----  4 - ----  ----- 11 - ----
-----  5 - ----  DSP12 12 A InSv  -----  5 - ----  ----- 12 - ----
-----  6 - ----  DSP13 13 A InSv  -----  6 - ----  ----- 13 - ----
CEM 0  7 A InSv  ----- 14 A InSv  -----  7 - ----  ----- 14 - ----
```

11 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no
is the number of the OC3 module (0 to 27)

Example of a MAP screen:

TRKS 62CG AIS SPM
minor (continued)

```
SPM 20    OC3 1      Act  InSv

Loc : Row E  FrPos  8 ShPos 24 ShId 0 Slot 10   Prot Grp : 1
Default Load: SPMLOAD                           Prot Role: Spare
```

12 Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

13 Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no
is the number (0 to 27) of the module with the alarm

to_unit_no
is the number (0 to 27) of the inactive module in the same protection group

Example of a MAP screen:

```
SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.
```

14 Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

15 Determine whether the alarm has cleared.

If the alarm list shows	Do
AIS	step 16
None	step 18

TRKS 62CG AIS SPM **minor** (end)

16 Replace the OC3 module. For detailed instructions, see “SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you have completed the procedure, go to Step 18.

17 For further assistance, contact the personnel responsible for the next level of support.

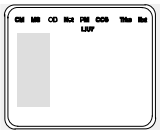
18 You have completed this procedure. Return to the CI level of the MAP screen by typing

```
>QUIT  ALL
```

and pressing the Enter key.

TRKS 62G BERSF SPM minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**62 G**	.	.
.	.	.	.	.	.	.		.	.

Indication

At the carrier level of the MAP terminal, a TG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a bit-error-rate signal failure (BERSF). The SPM generates the BERSF alarm when the bit error rate exceeds the datafilled value for a duration of 2.5 s. The bit-error-rate limit is datafilled in field SFBERLIM in table MNHSCARR. The SPM clears the alarm when the BERSF indication is not detected for 10 s.

Logs CARR300 and CARR310 relate to the BERSF alarm. Table MNHSCARR contains datafill related to the BERSF alarm.

Impact

Service is not affected.

The BERSF alarm generates for the STS-3L carrier class.

Common procedures

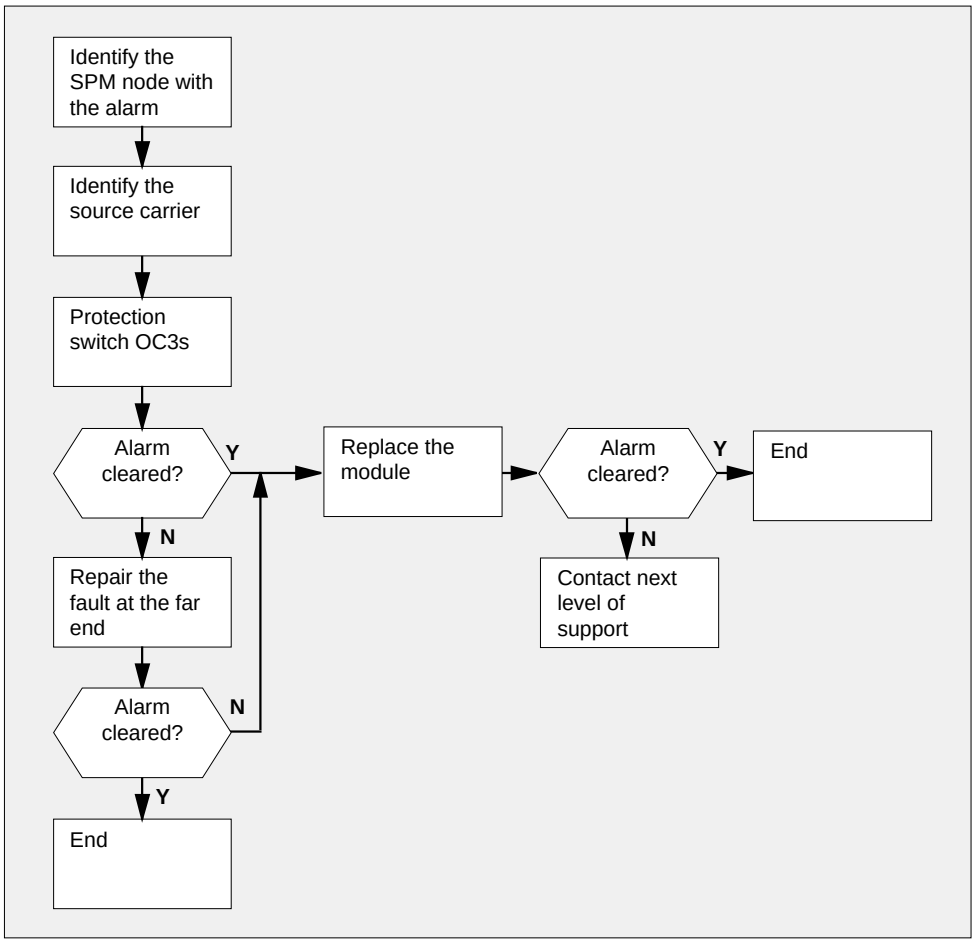
See “Accessing SPM alarms."

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing a BERSF alarm

TRKS 62G BERSF SPM
minor (continued)



Clearing a BERSF alarm

At the MAP terminal

1 Access the carrier level of the MAP screen by typing

`> MAPCI;MTC;TRKS;CARRIER`

and pressing the Enter key.

Example of a MAP screen:

TRKS 62G BERSF SPM
minor (continued)

```
CLASS     ML    OS ALRM   SYSB   MANB UNEQ OFFL   CBSY PBSY   INSV
TRUNKS     1     0   28     28      0    0    0      0    0     50
TIMING     0     0    0      0      0    0    0      0    0      2
HSCARR     0     0    0      1      3    0    1      0    0    180

MTC:
TRKS:
CARRIER:
```

2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

```
PM    NO CKT     PM    NO CKT     PM    NO CKT     PM    NO CKT
DTC    0  13     DTC    0  14     DTC    0  15     DTC    0  18
SPM   20  29     SPM   20  30     SPM   20  31     SPM   20  32


DISPLAYED BY CONDITION : ALARM
DISP:
MORE...
```

3 Record the SPM number (NO) and circuit (CKT) number combinations.

4 Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no
refers to number of the SPM (0 to 63)

Example of a MAP screen:

TRKS 62G BERSF SPM
minor (continued)

```
           SysB    ManB    OffL    CBsy    ISTb    InSv
  PM         7       2       2       2       9      16
 SPM         0       2       1       0       0       0

SPM   20  InSv  Loc: Site HOST Floor  1 Row A  FrPos 13

Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
-----  1 - ----  CEM 1  8 I InSv  -----  1 - ----  -----  8 - ----
-----  2 - ----  OC3 0  9 A InSv  -----  2 - ----  -----  9 - ----
DSP 3  3 I InSv  OC3 1 10 I InSv  -----  3 - ----  ----- 10 - ----
-----  4 - ----  ----- 11 - ----  -----  4 - ----  ----- 11 - ----
-----  5 - ----  DSP12 12 A InSv  -----  5 - ----  ----- 12 - ----
-----  6 - ----  DSP13 13 A InSv  -----  6 - ----  ----- 13 - ----
CEM 0  7 A InSv  ----- 14 A InSv  -----  7 - ----  ----- 14 - ----
```

5 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no
is the number of the OC3 module (0 to 27)

Example of a MAP screen:

```
SPM 20    OC3 1      Act  InSv

Loc : Row E  FrPos  8 ShPos 24 ShId 0 Slot 10   Prot Grp : 1
Default Load: SPMLOAD                           Prot Role: Spare
```

6 Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

7 Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no
is the number (0 to 27) of the module with the alarm.

to_unit_no
is the number (0 to 27) of the inactive module in the same protection group

Example of a MAP screen:

TRKS 62G BERSF SPM
minor (continued)

```
SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.
```

8 Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

`>LISTALM carrier_no`

and pressing the Enter key.

where

carrier_no
is the number of the carrier (0 to 4)

9 Determine whether the alarm has cleared.

If the alarm list shows	Do
BERSF	step 12
None	step 10

10 Replace the OC3 module. For detailed instructions, see “SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you complete the card replacement procedure, return to this point.

11 List the alarms on the carrier by typing

`>LISTALM carrier_no`

and pressing the Enter key.

If the alarm list shows	Do
None	step 15
BERSF	step 14

12 Troubleshoot the carrier circuit according to your company procedures. When you complete the troubleshooting procedure, return to this point.

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits.

13 List the alarms on the carrier by typing

`>LISTALM carrier_no`

and pressing the Enter key.

If the alarm list shows	Do
None	step 15

TRKS 62G BERSF SPM **minor** (end)

If the alarm list shows	Do
BERSF	step 14

14 For further assistance, contact the personnel responsible for the next level of support.

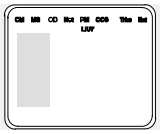
15 You have completed this procedure. Return to the CI level of the MAP screen by typing

```
>QUIT  ALL
```

and pressing the Enter key.

TRKS 62GC LOS SPM critical

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**62 GC.**	.	.
.	.	.	.	.	.	.	***C*.**	.	.

Indication

At the carrier level of the MAP display, a TG preceded by a number appears under the Trks header of the alarm banner and a critical alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a loss of signal (LOS). The SPM generates the LOS alarm when there is a continuous absence of any detectable transmission pulses at the receiving end for a duration of 2.5 s. The SPM clears the alarm when transmission pulses are detected for 10 s.

Logs CARR300 and CARR310 relate to the LOP alarm. Table MNHSCARR contains datafill related to the LOP alarm.

Impact

This alarm indicates that a severe, service-affecting condition exists. Immediate corrective action is required.

The LOS alarm generates for OC3 Section carrier types only.

Common procedures

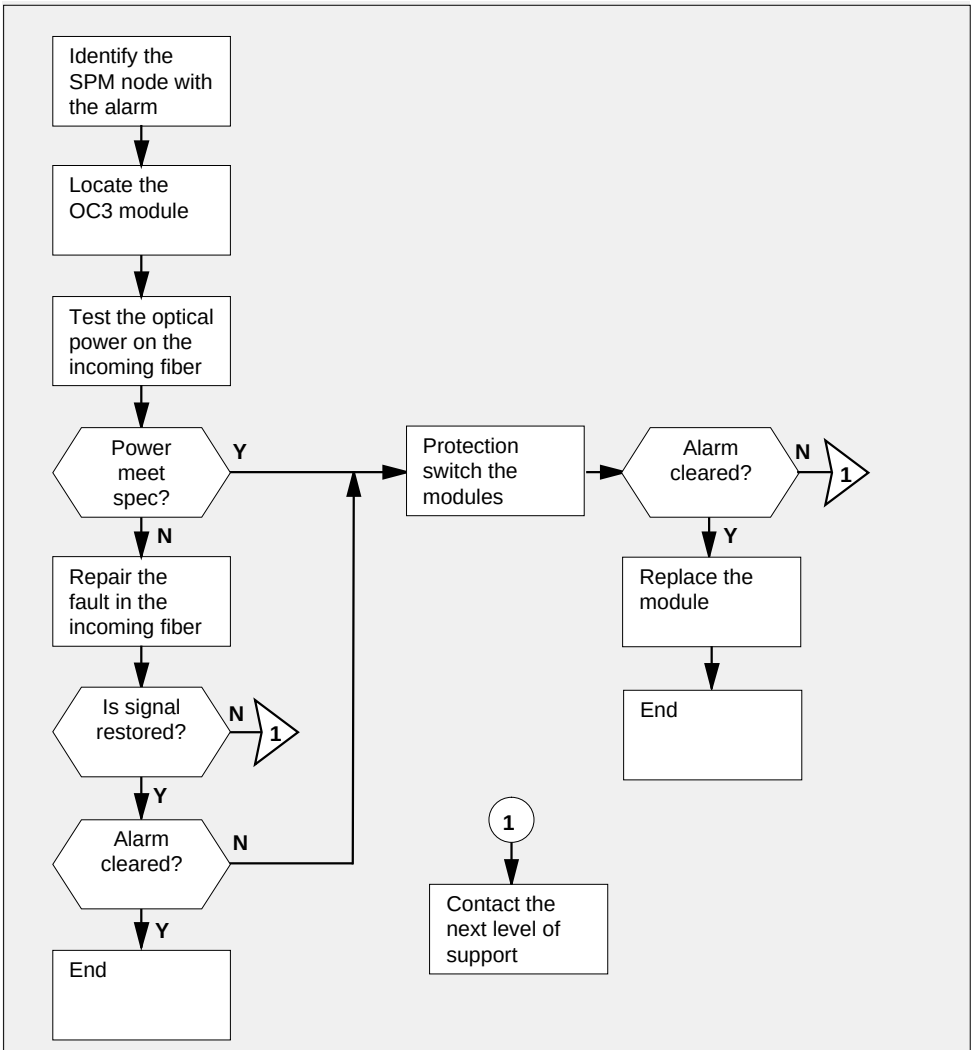
See “Accessing SPM alarms."

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing an LOS alarm

TRKS 62GC LOS SPM **critical** (continued)



Clearing an LOS alarm

At the MAP terminal

1 Access the carrier level of the MAP screen by typing

```
> MAPCI;MTC;TRKS;CARRIER
```

and pressing the Enter key.

Example of a MAP screen:

TRKS 62GC LOS SPM
critical (continued)

```
CLASS    ML   OS ALRM  SYSB  MANB UNEQ OFFL  CBSY PBSY  INSV
TRUNKS    1    0   28    28     0    0    0     0    0    50
TIMING    0    0    0     0     0    0    0     0    0     2
HSCARR    0    0    0     1     3    0    1     0    0   180

MTC:
TRKS:
CARRIER:
```

2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

```
PM    NO CKT     PM    NO CKT     PM    NO CKT     PM    NO CKT
DTC    0  13     DTC    0  14     DTC    0  15     DTC    0  18
SPM   20  29     SPM   20  30     SPM   20  31     SPM   20  32


DISPLAYED BY CONDITION : ALARM
DISP:
MORE...
```

3 Record the SPM number (NO) and circuit (CKT) number combinations.

4 Access the PM level of the MAP screen by typing

>MAPCI;MTC;PM

and pressing the Enter key.

Example of a MAP screen:

```
    SysB    ManB    OffL    CBsy    ISTb    InSv
PM   1       1       1       3       2      12
```

5 Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no
refers to number of the SPM (0 to 63)

TRKS 62GC LOS SPM
critical (continued)

Example of a MAP screen:

```
           SysB    ManB    OffL    CBsy    ISTb    InSv
   PM        7       2       2       2       9      16
  SPM        0       2       1       0       0       0

SPM   20  InSv  Loc: Site HOST Floor  1 Row A  FrPos 13

Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
-----  1 - ----  CEM 1  8 I InSv  -----  1 - ----  -----  8 - ----
-----  2 - ----  OC3 0  9 A InSv  -----  2 - ----  -----  9 - ----
DSP 3  3 I InSv  OC3 1 10 I InSv  -----  3 - ----  ----- 10 - ----
-----  4 - ----  ----- 11 - ----  -----  4 - ----  ----- 11 - ----
-----  5 - ----  DSP12 12 A InSv  -----  5 - ----  ----- 12 - ----
-----  6 - ----  DSP13 13 A InSv  -----  6 - ----  ----- 13 - ----
CEM 0  7 A InSv  ----- 14 A InSv  -----  7 - ----  ----- 14 - ----
```

6 Use the SPM shelf and slot numbers to locate the OC3 module with the LOS alarm. Locate the OC3 module with the illuminated LOS alarm indicator (yellow circle).

7 Remove the fiber connector from the receiver socket on the OC3 module. Clean the socket and the connector with compressed air. Use an optical power meter to measure the power at the receiver connector.

If the power is	Do
above -34 dBm (for example, -30 dBm)	step 10
below -34 dBm	step 8

8 Troubleshoot the fiber optic cable according to your company procedures. When you have completed the procedure, return to this point.

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot fiber optic cables.

9 Use an optical power meter to measure the power at the receiver connector.

If the power is	Do
above -34 dBm (for example, -30 dBm)	step 10
below -34 dBm	step 17

TRKS 62GC LOS SPM
critical (continued)

10 Plug the fiber optic connector into the receiver socket. Check to see if the alarm has cleared.

If the alarm lamp on the module is	Do
off	step 18
illuminated	step 11

11 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no
is the number of the OC3 module (0 to 27)

Example of a MAP screen:

```
SPM 20    OC3 1      Act  InSv

Loc : Row E  FrPos  8 ShPos 24 ShId 0 Slot 10   Prot Grp : 1
Default Load: SPMLOAD                           Prot Role: Spare
```

12 Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

13 Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no
is the number (0 to 27) of the module with the alarm.

to_unit_no
is the number (0 to 27) of the inactive module in the same

protection group

Example of a MAP screen:

TRKS 62GC LOS SPM **critical** (end)

```
SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.
```

14 List the alarms on the module by typing

>LISTALM

and pressing the Enter key.

15 Determine whether the alarm has cleared.

If the alarm list indicates	Do
LOS	step 17
None	step 16

16 Replace the OC3 module. For detailed instructions, see “SPM NTLX71AA OC3 card” in the appropriate *Card Replacement Procedures*. When you complete the card replacement procedure, go to step 18 of this procedure.

17 For further assistance, contact the personnel responsible for the next level of support.

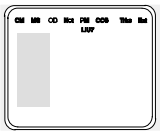
18 You have completed this procedure. Return to the CI level of the MAP screen by typing

>QUIT ALL

and pressing the Enter key.

TRKS 62TG BERSD SPM minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**62TG**	.	.
.	.	.	.	.	.	.		.	.

Indication

At the carrier level of the MAP teminal, a TG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a bit-error-rate signal degradation (BERSD). The SPM generates the BERSD alarm when the bit error rate exceeds the datafilled value for a duration of 2.5 s. The bit-error-rate limit is datafilled in field SDBERLIM in table MNHSCARR. The SPM clears the alarm when the BERSD indication is not detected for 10 s.

Logs CARR300 and CARR310 relate to the BERSD alarm. Table MNHSCARR contains datafill related to the BERSD alarm.

Impact

Service is not affected.

The BERSD alarm generates for the STS-3L carrier type.

Common procedures

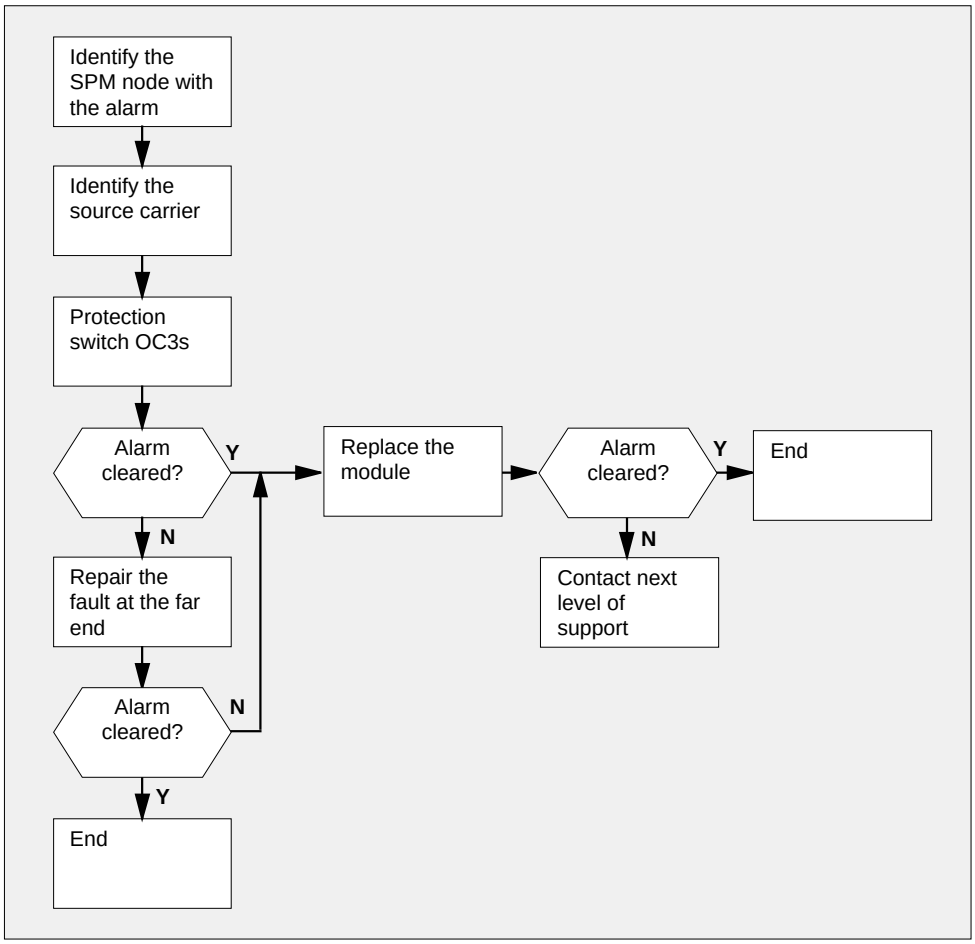
See “Accessing SPM alarms."

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing a BERSD alarm

TRKS 62TG BERSD SPM
minor (continued)



Clearing a BERSD alarm

At the MAP terminal

1 Access the carrier level of the MAP screen by typing

```
> MAPCI;MTC;TRKS;CARRIER
```

and pressing the Enter key.

Example of a MAP screen:

TRKS 62TG BERSD SPM
minor (continued)

```
CLASS    ML   OS ALRM  SYSB  MANB UNEQ OFFL  CBSY PBSY  INSV
TRUNKS    1    0   28    28     0    0    0     0    0    50
TIMING    0    0    0     0     0    0    0     0    0     2
HSCARR    0    0    0     1     3    0    1     0    0   180

MTC:
TRKS:
CARRIER:
```

2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

```
PM    NO CKT     PM    NO CKT     PM    NO CKT     PM    NO CKT
DTC    0  13     DTC    0  14     DTC    0  15     DTC    0  18
SPM   20  29     SPM   20  30     SPM   20  31     SPM   20  32


DISPLAYED BY CONDITION : ALARM
DISP:
MORE...
```

3 Record the SPM number (NO) and circuit (CKT) number combinations.

4 Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no
refers to number of the SPM (0 to 63)

Example of a MAP screen:

TRKS 62TG BERSD SPM
minor (continued)

```
           SysB    ManB    OffL    CBsy    ISTb    InSv
   PM        7       2       2       2       9      16
  SPM        0       2       1       0       0       0

SPM   20  InSv  Loc: Site HOST Floor  1 Row A  FrPos 13

Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
-----  1 - ----  CEM 1  8 I InSv  -----  1 - ----  -----  8 - ----
-----  2 - ----  OC3 0  9 A InSv  -----  2 - ----  -----  9 - ----
DSP 3  3 I InSv  OC3 1 10 I InSv  -----  3 - ----  ----- 10 - ----
-----  4 - ----  ----- 11 - ----  -----  4 - ----  ----- 11 - ----
-----  5 - ----  DSP12 12 A InSv  -----  5 - ----  ----- 12 - ----
-----  6 - ----  DSP13 13 A InSv  -----  6 - ----  ----- 13 - ----
CEM 0  7 A InSv  ----- 14 A InSv  -----  7 - ----  ----- 14 - ----
```

5 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no
is the number of the OC3 module (0 to 27)

Example of a MAP screen:

```
SPM 20    OC3 1      Act  InSv

Loc : Row E  FrPos  8 ShPos 24 ShId 0 Slot 10   Prot Grp : 1
Default Load: SPMLOAD                           Prot Role: Spare
```

6 Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

7 Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no
is the number (0 to 27) of the module with the alarm.

to_unit_no
is the number (0 to 27) of the inactive module in the same protection group

TRKS 62TG BERSD SPM
minor (continued)

Example of a MAP screen:

```
SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.
```

8 Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

where

carrier_no
is the number of the carrier (0 to 4)

9 Determine whether the alarm has cleared.

If the alarm list shows	Do
BERSD	step 12
None	step 10

10 Replace the OC3 module. For detailed instructions, see “SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you complete the card replacement procedure, return to this point.

11 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

If the alarm list shows	Do
None	step 15
BERSD	step 14

12 Troubleshoot the carrier circuit according to your company procedures. When you complete the troubleshooting procedure, return to this point.

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits.

13 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

If the alarm list shows	Do
None	step 15

TRKS 62TG BERSD SPM **minor** (end)

If the alarm list shows	Do
BERSD	step 14

14 For further assistance, contact the personnel responsible for the next level of support.

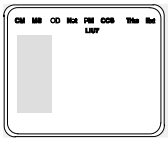
15 You have completed this procedure. Return to the CI level of the MAP screen by typing

```
>QUIT  ALL
```

and pressing the Enter key.

TRKS 62TG LOP SPM minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**62TG.**	.	.
.	.	.	.	.	.	.	.	.	.

Indication

At the carrier level of the MAP display, a TG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a loss of pointer (LOP). The SPM generates the LOP alarm when an unbroken sequence of frames with invalid pointers is detected for a duration of 2.5 s. The SPM clears the alarm when valid pointers are detected for 10 s.

Logs CARR300 and CARR310 relate to the LOP alarm. Table MNHSCARR contains datafill related to the LOP alarm.

Impact

Service is not affected.

The LOF alarm generates for the STS-1P and VT1.5P carrier types.

Common procedures

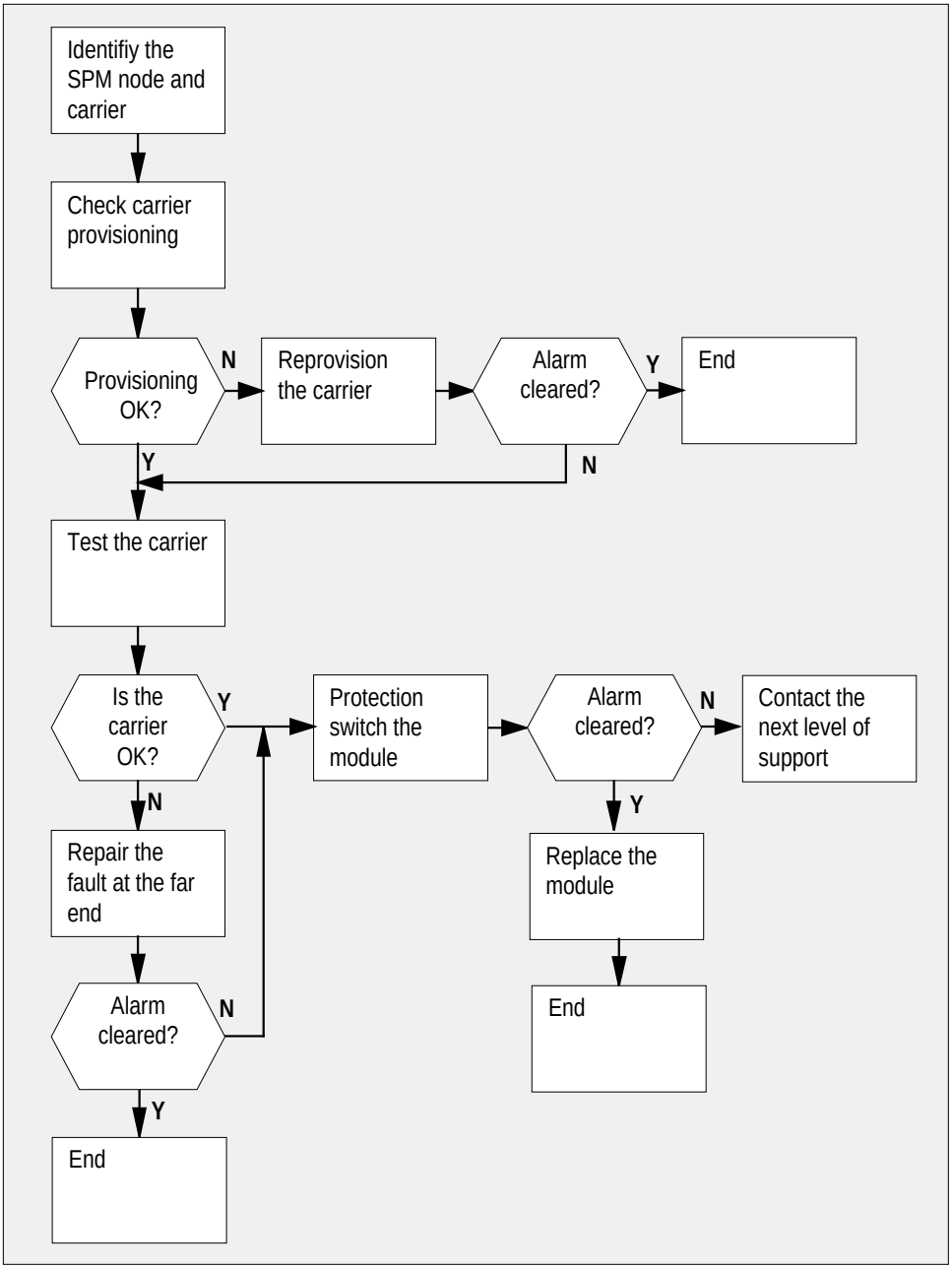
See “Accessing SPM alarms."

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing an LOP alarm

TRKS 62TG LOP SPM
minor (continued)



TRKS 62TG LOP SPM
minor (continued)

Clearing an LOP alarm

At the MAP terminal

1 Access the carrier level of the MAP screen by typing

> MAPCI;MTC;TRKS;CARRIER

and pressing the Enter key.

Example of a MAP screen:

```
CLASS    ML   OS ALRM  SYSB  MANB UNEQ OFFL  CBSY PBSY  INSV
TRUNKS    1    0   28    28     0    0    0     0    0    50
TIMING    0    0    0     0     0    0    0     0    0     2
HSCARR    0    0    0     1     3    0    1     0    0   180

MTC:
TRKS:
CARRIER:
```

2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

```
PM    NO CKT     PM    NO CKT     PM    NO CKT     PM    NO CKT
DTC    0  13     DTC    0  14     DTC    0  15     DTC    0  18
SPM   20  29     SPM   20  30     SPM   20  31     SPM   20  32


DISPLAYED BY CONDITION : ALARM
DISP:
MORE...
```

3 Record the SPM number (NO) and circuit (CKT) number combinations.

4 Determine whether the carrier provisioning is correct. Confirm that the carrier has been provisioned with STS-1P or VT15P signal types by verifying the datafill for the carrier in table MNHSCARR and related tables. For more information about table MNHSCARR, refer to the *Data Schema Reference Manual* or the data schema section of the *Translation Guide*, as appropriate.

If the signal type is	Do
STS-1P or VT15P	step 8

TRKS 62TG LOP SPM
minor (continued)

If the signal type is	Do
not STS-1P or VT15P	step 5

5 Datafill the correct carrier signal types in table MNHSCARR. For datafill information, refer to the *Data Schema Reference Manual* or the data schema section of the *Translation Guide*, as appropriate.

6 Post each SPM carrier circuit with an alarm by typing

`>POST SPM spm_no ckt_no`

and pressing the Enter key.

where

spm_no
is the number of the SPM (0 to 63)

ckt_no
is the number of the circuit (0 to 181)

Example of a MAP screen:

```
STS1P
N  CLASS  SITE SPM STS1P  DS3P VT15P  DS1P CKT STATE  MA
0  HSCARR HOST  20     2     -     -     -  33 InSv   --



SIZE OF POSTED SET  :  30                    MORE...
```

7 List the alarms on the carrier by typing

`>LISTALM carrier_no`

and pressing the Enter key.

where

carrier_no
is the number of the carrier (0 to 4)

If the alarm list shows	Do
None	step 21
LOF	step 8

8 Test the carrier by typing

`>TST carrier_no`

and pressing the Enter key.

where

TRKS 62TG LOP SPM
minor (continued)

carrier_no
is the number of the carrier (0 to 4)

9 Determine whether the carrier signal is valid.

If the test result is	Do
OK	step 12
Test failed.	step 10

10 Troubleshoot the carrier circuit according to your company procedures. When you have completed the procedure, return to this point.

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits.

11 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

where

carrier_no
is the number of the carrier (0 to 4)

If the alarm list shows	Do
None	step 21
LOF	step 12

12 Type

> MAPCI;MTC;PM

and press the Enter key.

Example of a MAP screen:

```
    SysB    ManB    OffL    CBsy    ISTb    InSv
PM   1       1       1       3       2       12
```

13 Post the SPMs by typing

> POST SPm spm_no

and pressing the Enter key.

where

spm_no
refers to number of the SPM (0 to 63)

Example of a MAP screen:

TRKS 62TG LOP SPM
minor (continued)

```
            SysB    ManB    OffL    CBsy    ISTb    InSv
  PM          7       2       2       2       9      16
 SPM          0       2       1       0       0       0

SPM   20  InSv  Loc: Site HOST Floor  1 Row A  FrPos 13

Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
-----  1 - ----  CEM 1  8 I InSv  -----  1 - ----  -----  8 - ----
-----  2 - ----  OC3 0  9 A InSv  -----  2 - ----  -----  9 - ----
DSP 3  3 I InSv  OC3 1 10 I InSv  -----  3 - ----  ----- 10 - ----
-----  4 - ----  ----- 11 - ----  -----  4 - ----  ----- 11 - ----
-----  5 - ----  DSP12 12 A InSv  -----  5 - ----  ----- 12 - ----
-----  6 - ----  DSP13 13 A InSv  -----  6 - ----  ----- 13 - ----
CEM 0  7 A InSv  ----- 14 A InSv  -----  7 - ----  ----- 14 - ----
```

14 Select the active OC3 module by typing

`> SELECT OC3 module_no`

and pressing the Enter key.

where

module_no
is the number of the OC3 module (0 to 27)

Example of a MAP screen:

```
SPM 20    OC3 1      Act  InSv

Loc : Row E  FrPos  8 ShPos 24 ShId 0 Slot 10   Prot Grp : 1
Default Load: SPMLOAD                           Prot Role: Spare
```

15 Access the protection level of the MAP screen by typing

`> PROT`

and pressing the Enter key.

16 Do a manual protection switch with a module in the same protection group by typing

`> MANUAL from_unit_no to_unit_no`

and pressing the Enter key.

where

from_unit_no
is the number (0 to 27) of the module with the alarm.

to_unit_no
is the number (0 to 27) of the inactive module in the same protection group

TRKS 62TG LOP SPM
minor (end)

Example of a MAP screen:

```
SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.
```

17 Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

`> LISTALM carrier_no`

and pressing the Enter key.

18 Determine whether the alarm has cleared.

If the alarm list shows	Do
LOF	step 20
None	step 19

19 Replace the OC3 module. For detailed instructions, see “SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you have completed the procedure, go to Step 21.

20 For further assistance, contact the personnel responsible for the next level of support.

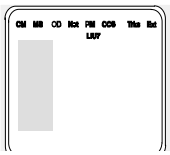
21 You have completed this procedure. Return to the CI level of the MAP screen by typing

`> QUIT ALL`

and pressing the Enter key.

TRKS 62TG RAI SPM minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**62TG**	.	.
.	.	.	.	.	.	.		.	.

Indication

At the carrier level of the MAP display, a TG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a remote alarm indication (RAI). The SPM generates the RAI alarm when an unbroken sequence of frames with RAI signals is detected for a duration of 2.5 s. The SPM clears the alarm when an RAI is not detected for 10 s.

Logs CARR300 and CARR310 relate to the RAI alarm. Table MNHSCARR contains datafill related to the RAI alarm.

Impact

Service is not affected.

The RAI alarm applies to DS-1P and DS-3P carrier types.

Common procedures

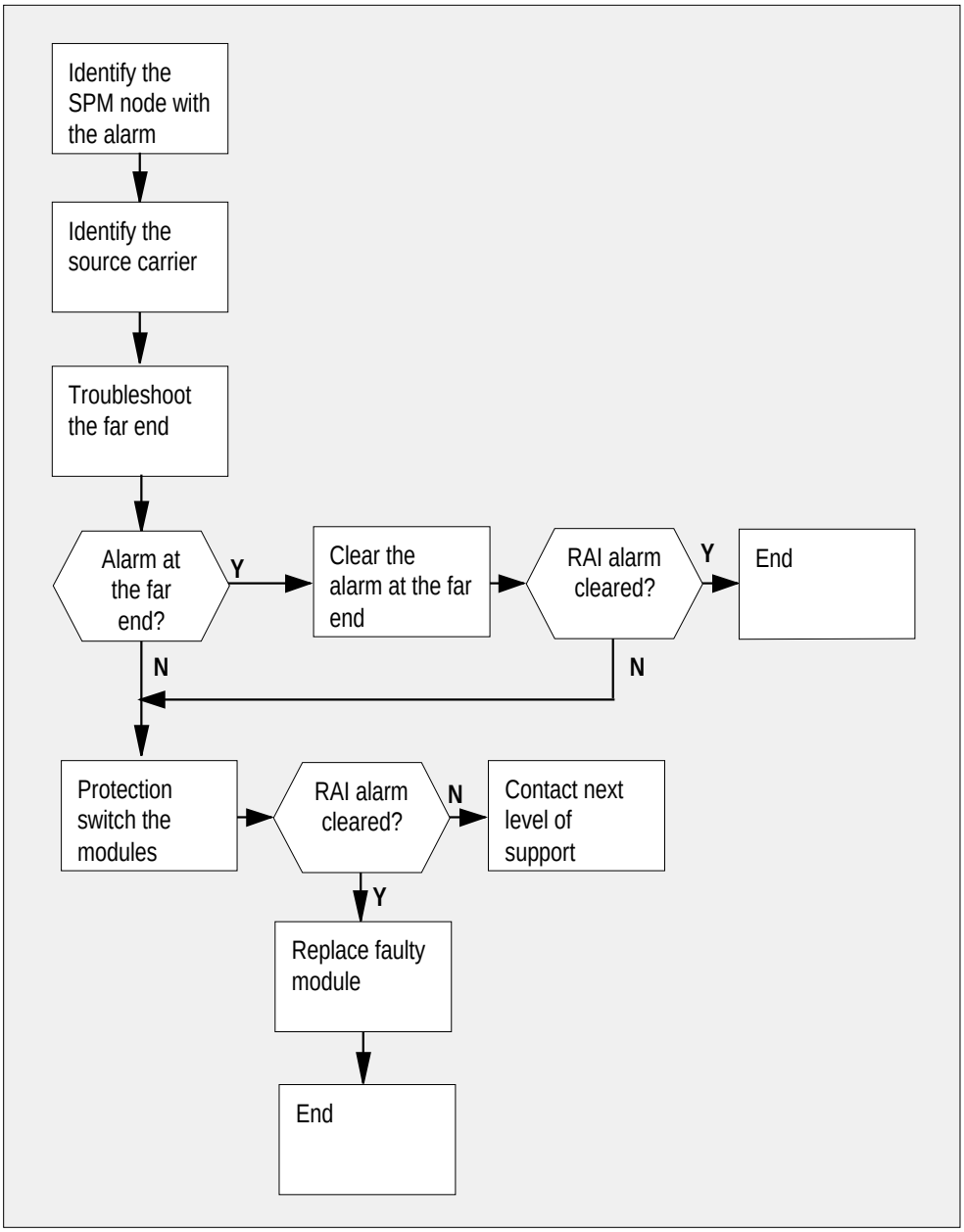
See “Accessing SPM alarms."

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

Summary of clearing an RAI alarm

TRKS 62TG RAI SPM
minor (continued)



TRKS 62TG RAI SPM
minor (continued)

Clearing an RAI alarm

At the MAP terminal

1 Access the carrier level of the MAP screen by typing

> MAPCI;MTC;TRKS;CARRIER

and pressing the Enter key.

Example of a MAP screen:

```
CLASS    ML   OS ALRM  SYSB  MANB UNEQ OFFL  CBSY PBSY  INSV
TRUNKS    1    0   28    28     0    0    0     0    0    50
TIMING    0    0    0     0     0    0    0     0    0     2
HSCARR    0    0    0     1     3    0    1     0    0   180

MTC:
TRKS:
CARRIER:
```

2 Display all carrier alarms by typing

>DISP ALARM

and pressing the Enter key.

Example of a MAP screen:

```
PM    NO CKT     PM    NO CKT     PM    NO CKT     PM    NO CKT
DTC    0  13     DTC    0  14     DTC    0  15     DTC    0  18
SPM   20  29     SPM   20  30     SPM   20  31     SPM   20  32


DISPLAYED BY CONDITION : ALARM
DISP:
MORE...
```

3 Record the SPM number (NO) and circuit (CKT) number combinations.

4 Post each SPM carrier circuit with an alarm by typing

>POST SPM spm_no ckt_no

and pressing the Enter key.

where

TRKS 62TG RAI SPM
minor (continued)

spm_no
is the number of the SPM (0 to 63)

ckt_no
is the number of the circuit (0 to 181)

Example of a MAP screen:

```
STS1P
N  CLASS  SITE SPM STS1P  DS3P VT15P  DS1P CKT STATE  MA
0  HSCARR HOST  20     2     –     –     –  33 InSv   --


SIZE OF POSTED SET  :  30                    MORE...
```

5 Troubleshoot the carrier circuit according to your company procedures.

Determine whether there is an alarm on the far-end device.

If there is an alarm on the far-end device?	Do
YES	Clear the alarm according to your company's procedures. When you have completed the procedure, return to this point.
NO	step 7

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits and clear alarms at the far end.

At the MAP terminal

6 List the alarms on the carrier by typing

```
>LISTALM  carrier_no
```

and pressing the Enter key.

where

carrier_no
is the number of the carrier (0 to 4)

If the alarm list shows	Do
None	step 16
RAI	step 7

TRKS 62TG RAI SPM
minor (continued)

7 Access the PM level of the MAP screen by typing

>MAPCI;MTC;PM

and pressing the Enter key.

Example of a MAP screen:

```
     SysB     ManB     OffL     CBsy     ISTb     InSv
PM    1        1        1        3        2       12
```

8 Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no
refers to number of the SPM (0 to 63)

Example of a MAP screen:

```
           SysB    ManB    OffL    CBsy    ISTb    InSv
  PM         7       2       2       2       9      16
 SPM         0       2       1       0       0       0

SPM   20  InSv  Loc: Site HOST Floor  1 Row A  FrPos 13

Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
-----  1 - ----  CEM 1  8 I InSv  -----  1 - ----  -----  8 - ----
-----  2 - ----  OC3 0  9 A InSv  -----  2 - ----  -----  9 - ----
DSP 3  3 I InSv  OC3 1 10 I InSv  -----  3 - ----  ----- 10 - ----
-----  4 - ----  ----- 11 - ----  -----  4 - ----  ----- 11 - ----
-----  5 - ----  DSP12 12 A InSv  -----  5 - ----  ----- 12 - ----
-----  6 - ----  DSP13 13 A InSv  -----  6 - ----  ----- 13 - ----
CEM 0  7 A InSv  ----- 14 A InSv  -----  7 - ----  ----- 14 - ----
```

9 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no
is the number of the OC3 module (0 to 27)

TRKS 62TG RAI SPM
minor (continued)

Example of a MAP screen:

```
SPM 20    OC3 1      Act  InSv

Loc : Row E  FrPos  8 ShPos 24 ShId 0 Slot 10   Prot Grp : 1
Default Load: SPMLOAD                           Prot Role: Spare
```

10 Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

11 Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no
is the number (0 to 27) of the module with the alarm

to_unit_no
is the number (0 to 27) of the inactive module in the same protection group

Example of a MAP screen:

```
SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.
```

12 Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

13 Determine whether the alarm has cleared.

If the alarm list shows	Do
RAI	step 15
None	step 14

TRKS 62TG RAI SPM **minor** (end)

14 Replace the OC3 module. For detailed instructions, see “SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you have completed the procedure, go to Step 16.

15 For further assistance, contact the personnel responsible for the next level of support.

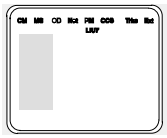
16 You have completed this procedure. Return to the CI level of the MAP screen by typing

```
>QUIT  ALL
```

and pressing the Enter key.

TRKS 62TG RFI SPM minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks 62TG.**	Ext	APPL
.	.	.	.		.	.	.	.	.
.		.	.		.	.	.	.	.

Indication

At the carrier level of the MAP display, a TG preceded by a number appears under the Trks header of the alarm banner and a minor alarm indicator appears beneath it.

Meaning

The DMS-Spectrum Peripheral Module (SPM) alarm system detects a remote failure indication (RFI). The SPM system generates the RFI alarm when an unbroken sequence of frames with RFI signals is detected for a duration of 2.5 s. The SPM system clears the alarm when an RFI is not detected for 10 s.

Logs CARR300 and CARR310 relate to the RFI alarm. Table MNHSCARR contains datafill related to the RFI alarm.

Impact

Service is not affected.

The RFI alarm applies to the following carrier types:

- STS-3P
- STS-1P
- VT-1.5P

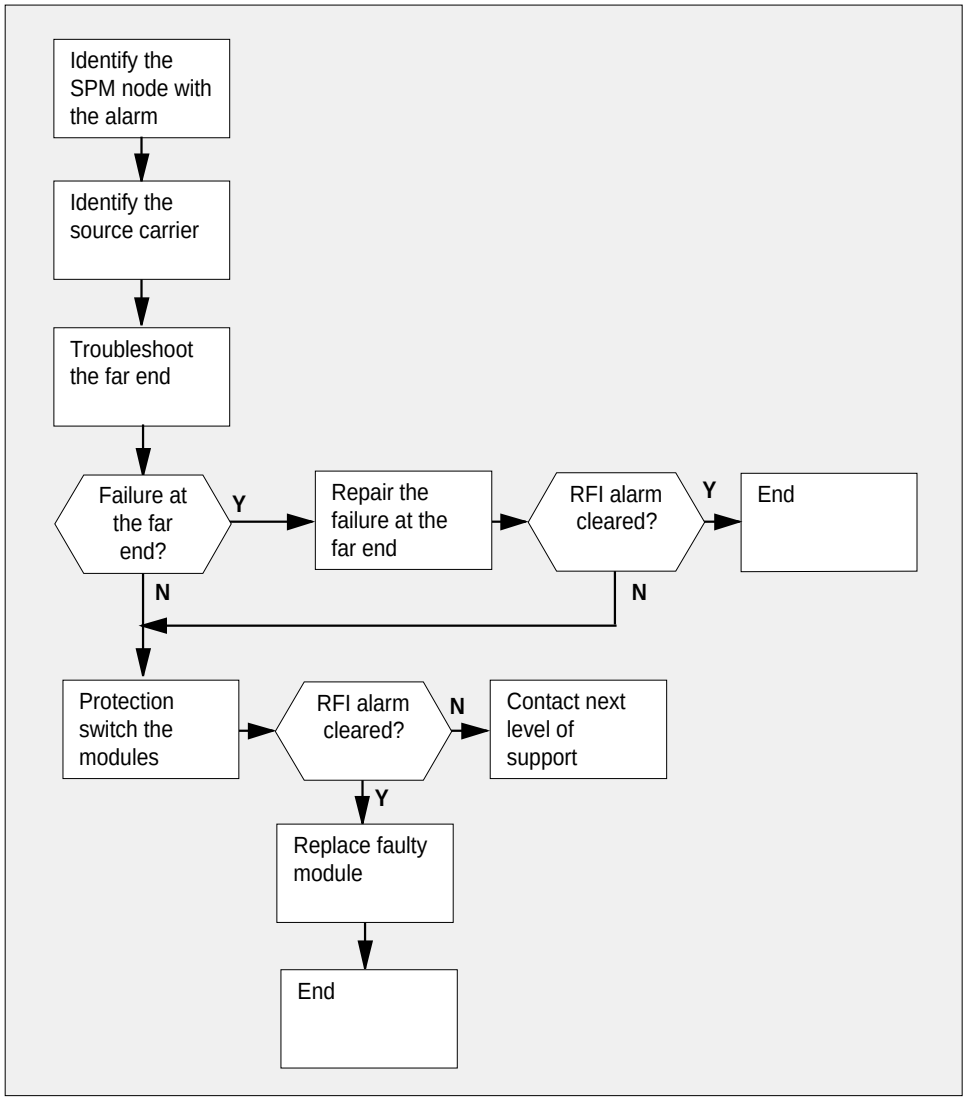
Common procedures

See “Accessing SPM alarms."

Action

The following flowchart is only a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to clear the alarm.

TRKS 62TG RFI SPM
minor (continued)



TRKS 62TG RFI SPM
minor (continued)

Clearing an RFI alarm

At the MAP terminal

1 Access the carrier level of the MAP screen by typing

`> MAPCI;MTC;TRKS;CARRIER`

and pressing the Enter key.

Example of a MAP screen:

```
CLASS    ML   OS ALRM  SYSB  MANB UNEQ OFFL  CBSY PBSY  INSV
TRUNKS    1    0   28    28     0    0    0     0    0    50
TIMING    0    0    0     0     0    0    0     0    0     2
HSCARR    0    0    0     1     3    0    1     0    0   180

MTC:
TRKS:
CARRIER:
```

2 Display all carrier alarms by typing

`>DISP  ALARM`

and pressing the Enter key.

Example of a MAP screen:

```
PM    NO CKT     PM    NO CKT     PM    NO CKT     PM    NO CKT
DTC    0  13     DTC    0  14     DTC    0  15     DTC    0  18
SPM   20  29     SPM   20  30     SPM   20  31     SPM   20  32


DISPLAYED BY CONDITION : ALARM
DISP:
MORE...
```

3 Record the SPM number (NO) and circuit (CKT) number combinations.

4 Post each SPM carrier circuit with an alarm by typing

`>POST  SPM  spm_no  ckt_no`

and pressing the Enter key.

where

spm_no
is the number of the SPM (0 to 63)

TRKS 62TG RFI SPM
minor (continued)

ckt_no
is the number of the circuit (0 to 181)

Example of a MAP screen:

```
STS1P
N  CLASS  SITE SPM STS1P  DS3P VT15P  DS1P CKT STATE  MA
0  HSCARR HOST  20     2     –     –     –  33 InSv   --


SIZE OF POSTED SET  :  30                    MORE...
```

5 Troubleshoot the carrier circuit according to your company procedures.

Determine if there is a failure of the far-end device.

If there is a failure at the far-end	Do
YES	Repair the failure of the far-end device according to your company procedures. When you have completed the procedure, return to this point.
NO	step 7

Note: Contact your next level of support if you are not familiar with the procedures required to troubleshoot carrier circuits and repair the far-end devices.

6 List the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

where

carrier_no
is the number of the carrier (0 to 4)

If the alarm list shows	Do
None	step
RFI	step 7

7 Access the PM level of the MAP screen by typing

>MAPCI;MTC;PM

and pressing the Enter key.

TRKS 62TG RFI SPM
minor (continued)

Example of a MAP screen:

```
    SysB    ManB    OffL    CBsy    ISTb    InSv
PM   1       1       1       3       2      12
```

8 Post the SPMs by typing

>POST SPM spm_no

and pressing the Enter key.

where

spm_no
refers to number of the SPM (0 to 63)

Example of a MAP screen:

```
          SysB    ManB    OffL    CBsy    ISTb    InSv
  PM        7       2       2       2       9      16
 SPM        0       2       1       0       0       0

SPM   20  InSv  Loc: Site HOST Floor  1 Row A  FrPos 13

Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
-----  1 - ----  CEM 1  8 I InSv  -----  1 - ----  -----  8 - ----
-----  2 - ----  OC3 0  9 A InSv  -----  2 - ----  -----  9 - ----
DSP 3  3 I InSv  OC3 1 10 I InSv  -----  3 - ----  ----- 10 - ----
-----  4 - ----  ----- 11 - ----  -----  4 - ----  ----- 11 - ----
-----  5 - ----  DSP12 12 A InSv  -----  5 - ----  ----- 12 - ----
-----  6 - ----  DSP13 13 A InSv  -----  6 - ----  ----- 13 - ----
CEM 0  7 A InSv  ----- 14 A InSv  -----  7 - ----  ----- 14 - ----
```

9 Select the active OC3 module by typing

>SELECT OC3 module_no

and pressing the Enter key.

where

module_no
is the number of the OC3 module (0 to 27)

Example of a MAP screen:

```
SPM 20    OC3 1      Act  InSv

Loc : Row E  FrPos  8 ShPos 24 ShId 0 Slot 10   Prot Grp : 1
Default Load: SPMLOAD                           Prot Role: Spare
```

TRKS 62TG RFI SPM
minor (continued)

10 Access the protection level of the MAP screen by typing

>PROT

and pressing the Enter key.

11 Do a manual protection switch with a module in the same protection group by typing

>MANUAL from_unit_no to_unit_no

and pressing the Enter key.

where

from_unit_no
is the number (0 to 27) of the module with the alarm

to_unit_no
is the number (0 to 27) of the inactive module in the same protection group

Example of a MAP screen:

```
SPM 20 OC3 1 Manual: Request has been submitted.
SPM 20 OC3 0 Manual: Command completed.
```

12 Return to the carrier level of the MAP screen and list the alarms on the carrier by typing

>LISTALM carrier_no

and pressing the Enter key.

13 Determine whether the alarm has cleared.

If the alarm list shows	Do
RFI	step 15
None	step 14

14 Replace the OC3 module. For detailed instructions, see “SPM NTLX71AA OC3 card" in the appropriate *Card Replacement Procedures*. When you have completed the procedure, go to Step 16.

15 For further assistance, contact the personnel responsible for the next level of support.

TRKS 62TG RFI SPM
minor (end)

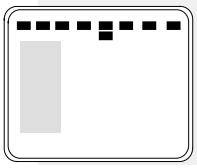
16 You have completed this procedure. Return to the CI level of the MAP screen by typing

```
>QUIT  ALL
```

and pressing the Enter key.

Trks C minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**C**	.	.

Indication

At the MTC level of the MAP display, C appears under the Trks header of the alarm banner. The C indicates a carrier (C) alarm.

Meaning

A minimum of one carrier is system busy and trunk group alarms are not present. The system busy carriers are out of service.

Carrier alarms include the following alarm types:

- AIS, AIS16
- BER, BPVTX, BPVRX
- CARD, CLKTX, CLKRX, CRC4, CRE
- DIAG
- LOS (see Note)
- LLFA, LLMA, LLCMA, RFAI, RMAI
- SLIPTX, SLIPRX

Note: The Loss Of Signal (LOS) alarm detection, as required by ITU-T Recommendation G.775, is supported by PMs DTCO2 and DTCO2i. These PMs have NTMX82CA cards which are designed to generate both LOS and RFAI alarms when a carrier is disconnected or is physically broken.

Result

The result of a C alarm depends on the following:

- the type of carrier
- the amount of traffic
- the alarm threshold set in Table TRKMTCE

Trks C
minor (continued)

Common procedures

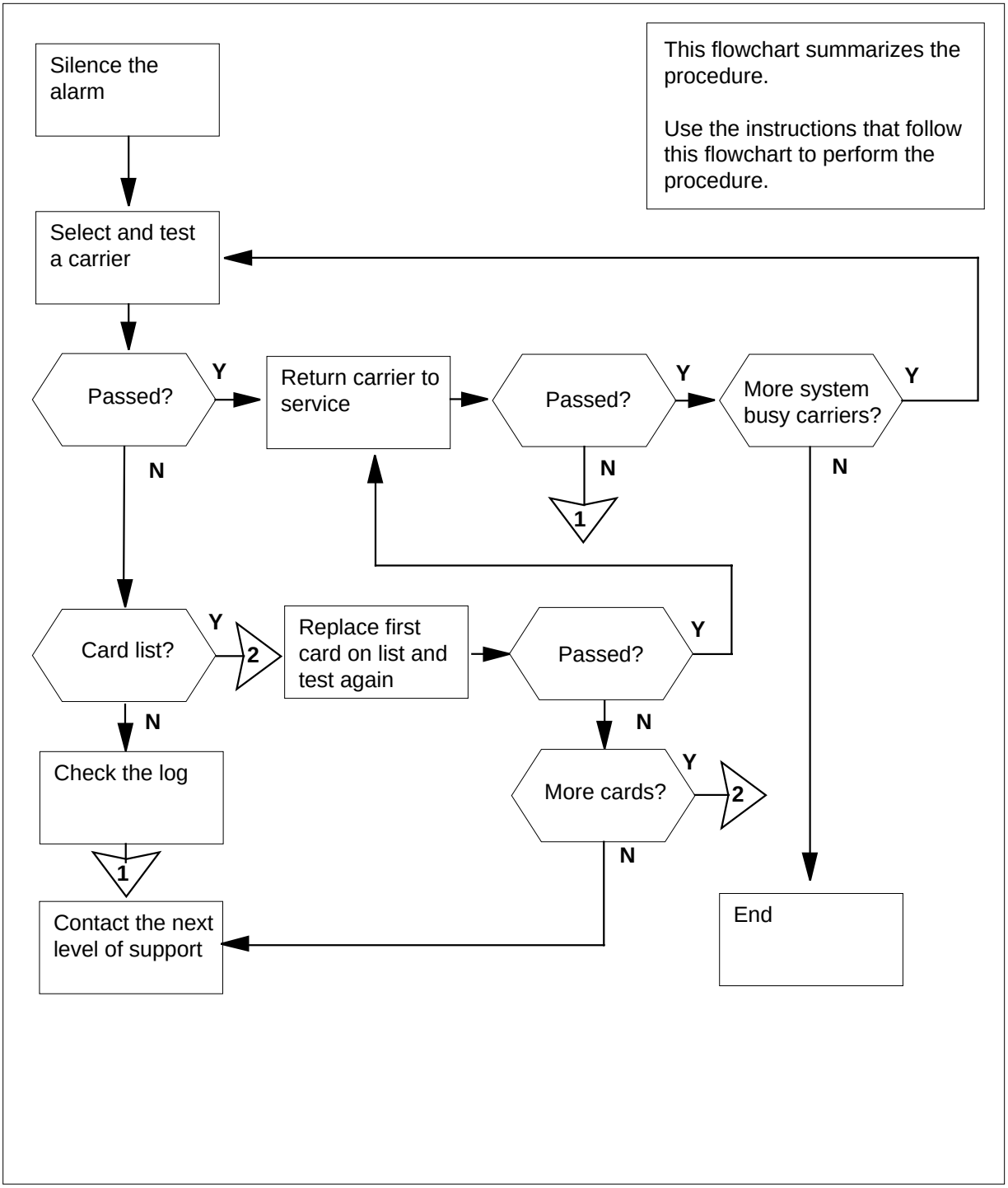
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks C
minor (continued)

Summary of clearing a Trks C minor alarm



Trks C
minor (continued)

Clearing a Trks C minor alarm

At the MAP terminal

1 To access the CARRIER level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;CARRIER;SIL

and press the Enter key.

Example of a MAP response:

```
CLASS    ML  OS  ALARM SYSB MANB  UNEQ OFFL  CBSY PBSY INSV
TRUNKS    0   3      7    5    0     0    0    58    0    8
REMOTE    0   0      0    0    0     0    0     6    6    0
TIMING    0   1      1    0    0     0    0     1    0    1
```

2 To post all system busy carriers, type

>POST SYSB

and press the Enter key.

Example of a MAP response:

```
CLASS     ML   OS   ALARM     SYSB MANB UNEQ OFFL CBSY PBSY INSV
TRUNKS    21   7    28        5    2    0    28   11   0    45
REMOTE    0    0    0         0    0    0    0    4    16   4
TIMING    1    0    1         0    0    0    1    0    0    1
DS1
N CLASS  SITE  LTC  CK  D  ALRM  SLIP  FRME  BER  ES  SES STATE
0 TRUNKS  HOST   4   1   C  LCGA   0   0-6.3   0  0   SYSB-T
1 TRUNKS  HOST   4   2   C  LCGA   0   0-6.3   0  0   SYSB-T
2 TRUNKS  HOST   4   4   C  LCGA   0   0-6.3   0  0   SYSB-T
3 TRUNKS  HOST   4   5   C  LCGA   0   0-6.3   0  0   SYSB-T
4 TRUNKS  HOST   4   6   C  LCGA   0   0-6.3   0  0   SYSB-T
```

3 Record the carriers that appear under the N column from the MAP display example in step 2.

4 Select a carrier from the posted set.

5 To manually busy the first carrier in the posted set, type

>BSY carrier_no

and press the Enter key.

where

carrier_no
is the carrier number (0 to 4) selected from the posted set

MAP response:

```
OK
```

6 To test the carrier, type

>TST carrier_no

Trks C
minor (continued)

and press the Enter key.

where

carrier_no
is the carrier number (0 to 4) selected from the posted set

Example of a MAP response:

```
Carrier test failed.
MLNR35AT***+ TRK109 May19 11:43:19 3400 FAIL
   PM:LTC NO 4 CCT 1
   ERROR:ALARM:C-SIDE
   ACTION:CHEK ALARMS
   CARD:NIL
```

If the TST command	Do
passed	step 10
failed, and the system generated a card list	step 8
fails, and the system did not generate a card list	step 7

7 The system generated a log. Record the information in the log and go to step 13.

8 Record the location, description, slot number, product engineering code (PEC) and PEC suffix of all the cards on the list.

9 Perform the correct procedure in *Card Replacement Procedures* to replace the first card on the list. Complete the procedure and go to step 11.

10 To return the carrier to service, type

>RTS

and press the Enter key.

Example of a MAP response:

```
FAILED TO DO
```

If the RTS command	Do
passed	step 11
failed	step 13

Trks C
minor (end)

11 Determine from the list that you recorded in step 3 if more system busy (SysB) carriers are present.

If more SysB carriers	Do
are present	step 4
are not present	step 12

12 Check the status of the alarm banner under TRKS to determine if the C alarm cleared.

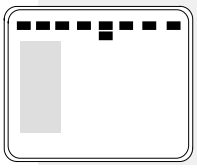
If the C alarm	Do
cleared	step 14
did not clear	step 13

13 For additional help, contact the next level of support.

14 The procedure is complete.

Trks CB
critical, major, or minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**9CB**	.	.

Indication

At the MTC level of the MAP display, CB (preceded by a number) appears under the Trks header of the alarm banner. The CB indicates a carrier busy (CB) critical, major, or minor alarm.

Meaning

One or more trunks in a trunk group is manual busy. One or more carriers is system busy. The system busy carriers and the manual-busy trunks are removed from service.

The number under the Trks header in the alarm banner indicates the number of affected CB trunks.

- For a critical alarm, *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, the area under the alarm indicator is blank.

Arrival at the critical alarm threshold set in Table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in Table TRKMTCE raises a major alarm. Arrival at the minor alarm threshold set in Table TRKMTCE raises a minor alarm.

Result

The result of a CB alarm depends on the following:

- the type of carrier
- the type of trunk
- the type and size of the trunk group
- the amount of traffic at the time
- the correct critical, major, and minor alarm thresholds in Table TRKMTCE for the trunk group(s)

Trks CB
critical, major, or minor (continued)

Common procedures

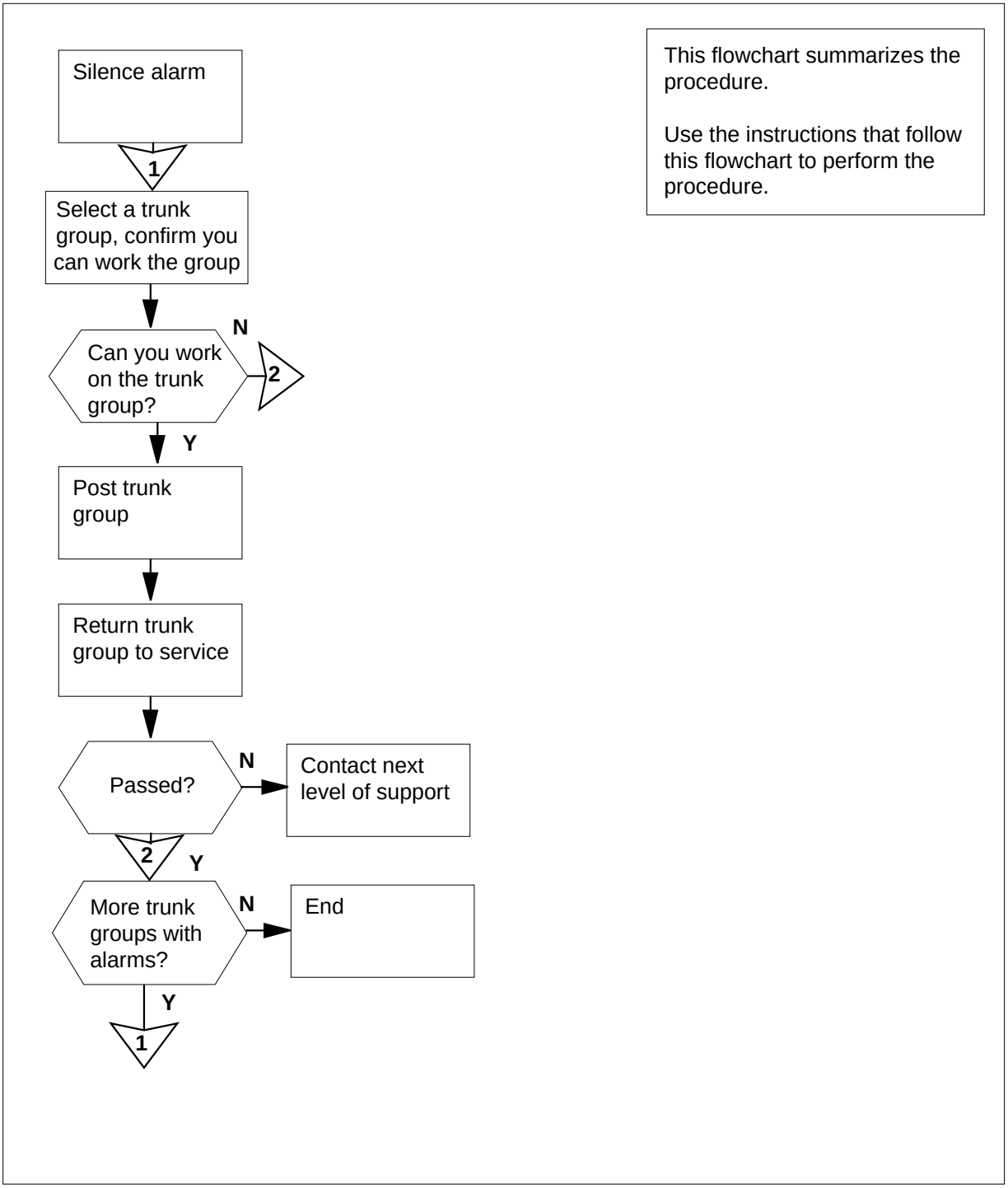
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CB
critical, major, or minor (continued)

Summary of clearing a Trks CB critical, major, or minor alarm



Trks CB
critical, major, or minor (continued)

Clearing a Trks CB critical, major, or minor alarm

At the MAP terminal

1 To access the STAT level of the MAP terminal and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP response:

```
    TWOWY        ITG         OTG        MISC
     36GC        49GC        62GC        19GC

 ITEM  TYPE   A      COMLANG      TOT     SB    MB    EX    %OS
 TRKS:
 STAT:
```

2 To display details of all trunk groups with manual-busy circuits, type

>DISPGRP ALL MB

and press the Enter key.

Example of a MAP response:

```
ITEM    TYPE    A   COMLANG TOT SB  MB      EX  %OS
0  MISC MB  DMODEMC 8   8   0   0   100
1  IC   MB  RSCITDP1    1   0   1   0       100
2  OG   MB  PDXP_RSC    1   0   1   0       100
```

3 Record the trunk groups that appear under the TYPE heading in step 2.

4 To select the first trunk group on the list, type

>ITEM item _no

and press the Enter key.

where

item_no
is the item number of the trunk you want to work on, as

indicated in the far-left column of the MAP display in step 2

5 To display details of the trunk circuit in the selected group, type

>DISALM MB

and press the Enter key.

Example of a MAP response:

```
  IC    MB    RSCITDP1     1    0  1      0      100

PM  NO  TRMNL CKTNO  STATE PM  NO  TRMNL  CKTNO  STATE
RCC 0   9 11    0    MB
```

Trks CB
critical, major, or minor (continued)

6 Maintenance personnel in your office can perform maintenance on the trunk or PMs related to the trunk at any time. Determine from other maintenance personnel in your office if you can return the trunk group to service.

If you	Do
have permission to return the trunk group to service	step 7
do not have permission to return the trunk group to service	step 12

7 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP response:

```
POST       DELQ            BUSYQ        DIG
TTP  6-030
CKT TYPE     PM NO.         COM LANG     STA S R  DOT TE  RESULT


TTP ID IS:  6-030
NO CKT,SET IS EMPTY
```

8 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name
is the name of the circuit that you must post, as indicated in the MAP display in step 5. Circuit RSCITDP1 is an example of a circuit.

Example of a MAP response:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK,CKT POSTED
```

9 To return this trunk group to service, type

>RTS ALL

and press the Enter key.

Example of a MAP response:

Trks CB
critical, major, or minor (end)

```
STATE CHANGED
```

If the RTS command	Do
passed	step 10
failed	step 11

10 Determine from the list recorded in step 3 if you must return more trunk groups to service.

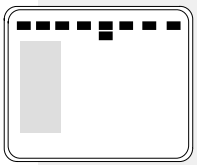
If more trunk groups to return to service	Do
are present	step 8
are not present	step 12

11 For additional help, contact the next level of support.

12 The procedure is complete.

Trks CC critical

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**2CC *C***	.	.

Indication

At the MTC level of the MAP display, CC (preceded by a number) appears under the Trks header of the alarm banner. The CC indicates a carrier critical (CC) alarm.

Meaning

One or more trunk groups has a critical alarm. A minimum of one carrier is system busy.

The number under the Trks header in the alarm banner indicates the number of affected CC cards.

Result

The result of a CC alarm depends on the following:

- the type of carrier
- the type of trunk
- the type and size of the trunk group
- the amount of traffic at the time
- the alarm threshold set in Table TRKMTCE for the trunk group(s)

Common procedures

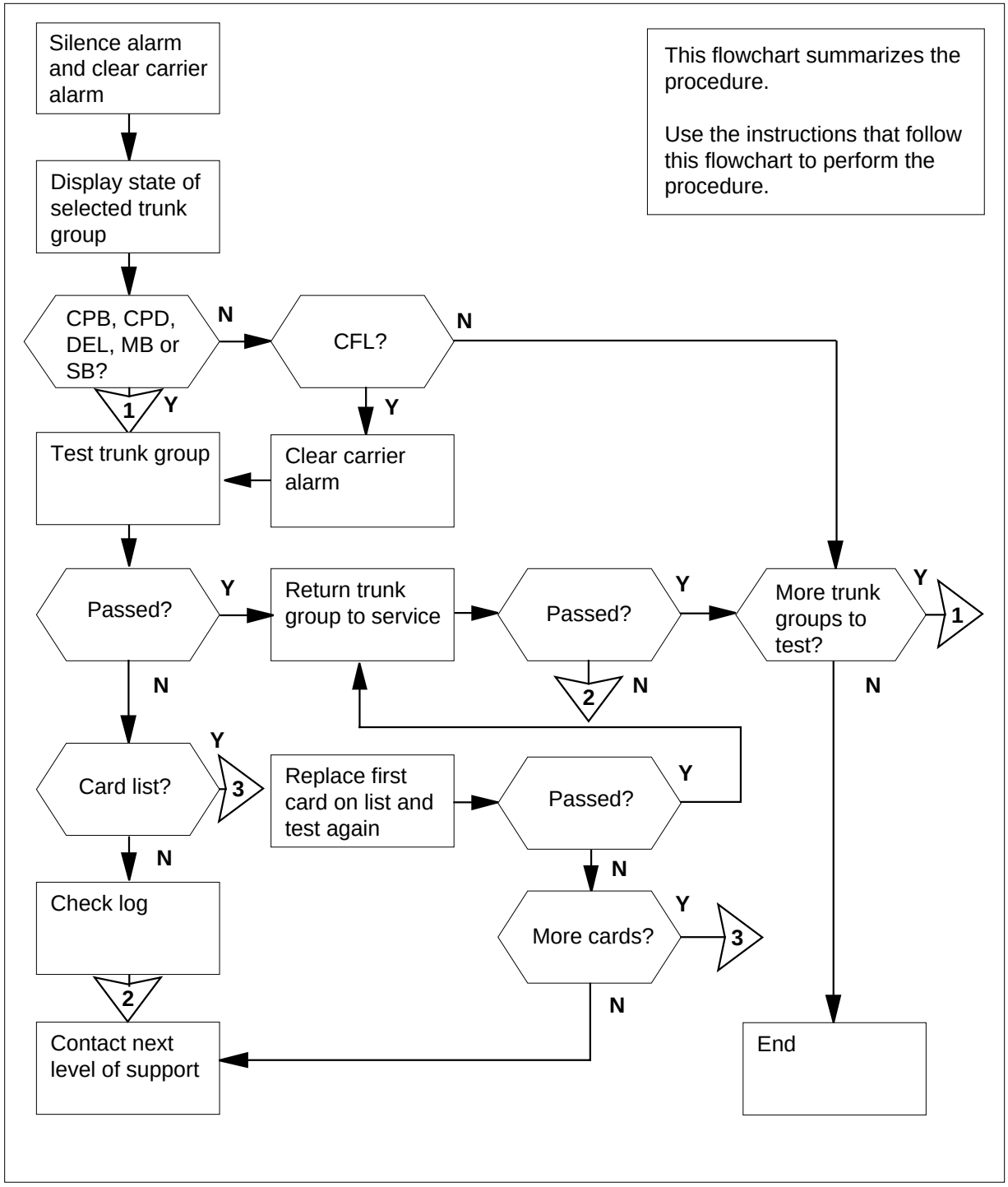
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CC
critical (continued)

Summary of clearing a Trks CC critical alarm



Trks CC
critical (continued)

Clearing a Trks CC critical alarm

At the MAP terminal

1 To access the STAT level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP response:

```
TWOWY         ITG          OTG         MISC
 36GC         49GC         62GC        19GC

ITEM  TYPE    A       COMLANG       TOT    SB    MB    EX    %OS
TRKS:
STAT:
```

2 To display details of all trunk groups with a critical alarm, type

>DISPGRP ALL GC

and press the Enter key.

Example of a MAP response:

```
ITEM  TYPE   A      COMLANG      TOT   SB    MB   EX   %OS
0      MISC    GC        DMODEMC         8      8       0    0     100
1      IC GC         RSCITDP1  1      0       1    0     100
2      OG GC         PDXP_RSC  1      0       1    0     100
```

3 Record the trunk groups displayed in step 2.

4 To select a trunk group on which to work, type

>ITEM item _no

and press the Enter key.

where

item_no
is the item number of the trunk group on which you want to begin work. The item number appears in the far-left column of the MAP display in step 2

5 To display details of trunk circuits in the trunk group, type

>DISALM GC

and press the Enter key.

Example of a MAP response:

Trks CC
critical (continued)

```
   IC   MB      RSCITDP1    1   0   1           0   100

PM NO   TRMNL   CKTNO STATE PM  NO  TRMNL   CKTNO   STATE
RCC 0   9 11      0    CFL
```

6 Record the name of the trunk group.

Note: The name of the trunk group appears in the top row of the display. An example of a trunk group name is RSCITCP1.

7 Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do
is CFL (carrier fail)	step 24
is CPD (call process deload)	step 11
is DEL (deload)	step 11
is IDL (idle)	step 21
is INB (installation busy)	step 21
is INI (initializing)	step 21
is LO (locked out)	step 8
is MB (manual busy)	step 11
is NEQ (not equipped)	step 21
is NMB (network management busy)	step 21
is PMB (peripheral module busy)	step 9
is RES (restricted)	step 21
is RMB (remote make busy)	step 10
is SB (system busy)	step 11
is SZD (seized)	step 21

8 The circuit is in a locked out state. Contact the far-end office to determine the cause of the circuit lock out. Make sure that the circuit returns to service.

Go to step 21.

Trks CC
critical (continued)

9 Perform the correct PM alarm clearing procedure in this document. Complete the procedure and return to this point.

Go to step 21.

10 Contact the far-end office to determine why the circuit is busy and to make sure that the circuit returns to service.

Go to step 21.

11 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP response:

```
POST        DELQ     BUSYQ       DIG
 TTP  6-030
 CKT TYPE    PM NO.   COM LANG     STA S R  DOT TE  RESULT


TTP ID IS:  6-030
12 NEXT      NO CKT,SET IS EMPTY
```

12 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name
is the name of the circuit to post, as indicated in the MAP display in step 5. RSCITDP1 is an example of a circuit name

Example of a MAP response:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK,CKT POSTED
```

13 To manually busy the first trunk in the posted group, type

>BSY

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

14 To test the trunk, type

>TST

and press the Enter key.

Trks CC
critical (continued)

Example of a MAP response:

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
   CKT   RSCITDP1   1
   DIAGNOSTIC RESULT CONNECTION FAILURE
   ACTION REQUIRED TRY AGAIN
   CARD TYPE
   ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 19
failed, and the system generated a card list	step 16
failed, and the system did not generate a card list	step 15
failed, connection failure, refer to TRK107 log	step 14

15 The system generated a trunk 101 log. Record the information in the log. Go to step 25.

16 Record the location, description, slot number, product engineering code (PEC) and PEC suffix of all the cards on the list.

17 Perform the correct procedure in *Card Replacement Procedures* to replace the first card on the list. Complete the procedure and return to this point.

18 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
    CKT   RSCITDP1   1
```

If the TST command	Do
passed	step 19
failed, and cards remain on the list	step 17

Trks CC
critical (continued)

If the TST command	Do
failed, and cards do not remain on the list	step 25

19 To return the trunk to service, type

>RTS

and press the Enter key.

Example of a MAP response:

```
FAILED TO DO
```

If the RTS command	Do
passed	step 20
failed	step 25

20 To determine if more trunks in the posted trunk group that continue to have an alarm are present, type

>NEXT

and press the Enter key.

If more trunks that continue to have an alarm	Do
are present	step 13
are not present	step 21

21 Determine from the list you recorded in step 3 if more trunk groups with a critical alarm are present.

If more trunk groups with a critical alarm	Do
are present	step 22
are not present	step 26

22 To select the next trunk group, type

>STAT

and press the Enter key.

23 Go to step 3.

24 Clear the *Trks C Minor alarm*. Perform the correct procedure to clear the alarm.

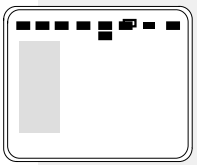
Trks CC
critical (end)

25 For additional help, contact the next level of support.

26 The procedure is complete.

Trks CE
critical, major, or minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**2CE**	.	.

Indication

At the MTC level of the MAP display, CE (preceded by a number) appears under the Trks header of the alarm banner. The CE indicates a carrier external (CE) critical, major, or minor alarm.

Meaning

One or more trunks in a trunk group is external busy. A minimum of one carrier is system busy. The external trunks and system busy carriers were removed from service.

The number under the Trks header in the alarm banner indicates the number of affected CE trunks.

- For a critical alarm, *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, the area under the alarm indicator is blank.

Arrival at the critical alarm threshold set in Table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in Table TRKMTCE raises a major alarm. Arrival at the minor alarm threshold set in Table TRKMTCE raises a minor alarm.

Result

The result of a CE alarm depends on the following:

- the type of carrier
- the type of trunk
- the amount of traffic at the time
- the correct critical, major, and minor alarm thresholds set in Table TRKMTCE for the trunk group(s)

Common procedures

There are no common procedures.

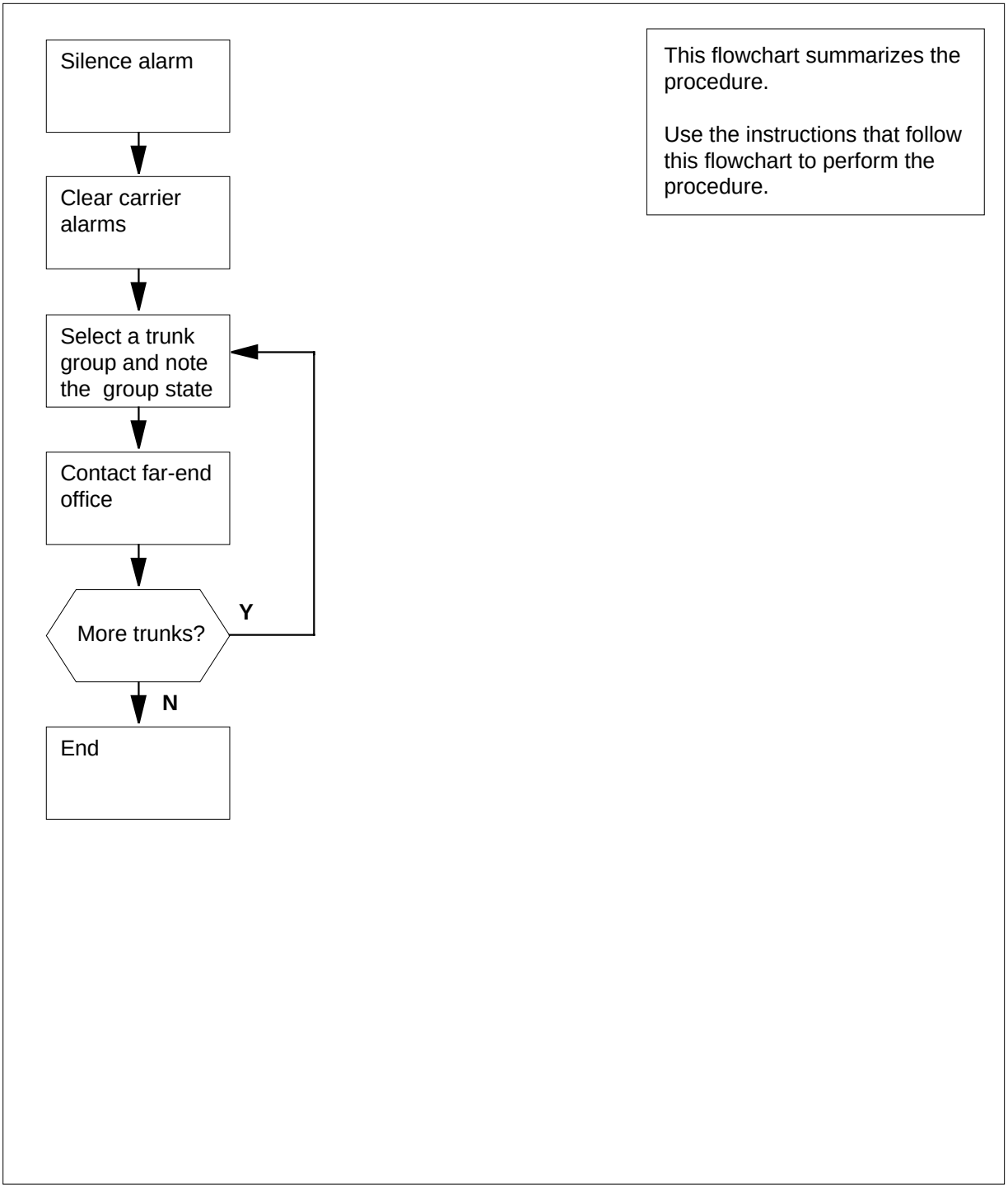
Trks CE
critical, major, or minor (continued)

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CE
critical, major, or minor (continued)

Summary of cleariong a Trks CE critical, major, or minor alarm



Trks CE
critical, major, or minor (continued)

Clearing a Trks CE critical, major, or minor alarm

At the MAP terminal

1 To access the STAT level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP display:

```
TWOWY       ITG        OTG       MISC
 36GC       49GC       62GC       19GC

 ITEM  TYPE  A    COMLANG    TOT   SB   MB   EX   %OS
 TRKS:
 STAT:
```

2 To display details of all trunk groups with external busy circuits, type

>DISPGRP ALL EX

and press the Enter key.

Example of a MAP display:

```
ITEM    TYPE    A   COMLANG TOT SB  MB      EX  %OS
0  MISC EX  DMODEMC 8   8   0   0   100
1  IC   EX  RSCITDP1    1   0   1   0       100
2  OG   EX  PDXP_RSC    1   0   1   0       100
```

3 Record the trunk groups displayed in step 2.

4 To select a trunk group on which to work and record the item number on the MAP display, type

>ITEM item _no

and press the Enter key.

where

item_no
is the item number of the trunk group on which you want to work.

The trunk group appears in the far-left column of the MAP display in

step 2

5 To display details of trunk circuits in the selected group, type

>DISALM EX

and press the Enter key.

Example of a MAP display:

Trks CE
critical, major, or minor (end)

```
   IC   MB     RSCITDP1      1   0   1           0       100

PM NO  TRMNL  CKTNO  STATE  PM  NO  TRMNL   CKTNO   STATE
RCC 0   9 11    0    LO
```

6 Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do
is RMB (remote make busy)	step 8
is LO (locked out)	step 7

7 The circuit is in a locked out state. Contact the far-end office to determine the cause of the circuit lock out. Make sure that the circuit returns to service.

Go to step 9.

8 Contact the far-end office to determine why the circuit is in a remote make busy state. Make sure that the circuit returns to service.

9 Determine from the list recorded in step 3 if more trunks with external busy circuits are present.

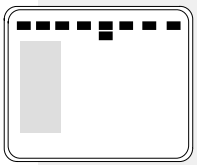
If more trunks with external busy circuits	Do
are present	step 4
are not present	step 11

10 For additional help, contact the next level of support.

11 The procedure is complete.

Trks CG
minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**7CG**	.	.

Indication

At the MTC level of the MAP display, CG (preceded by a number) appears under the Trks header of the alarm banner. The CG indicates a carrier trunk group (CG) minor alarm.

Meaning

One or more trunk groups has a minor alarm. A minimum of one carrier is system busy.

The number under the Trks header in the alarm banner indicates the number of affected CG trunk groups.

Result

The result of a CG alarm depends on the following:

- the application and size of the trunk group
- the amount of traffic at the time
- the minor alarm threshold set in Table TRKMTCE

Common procedures

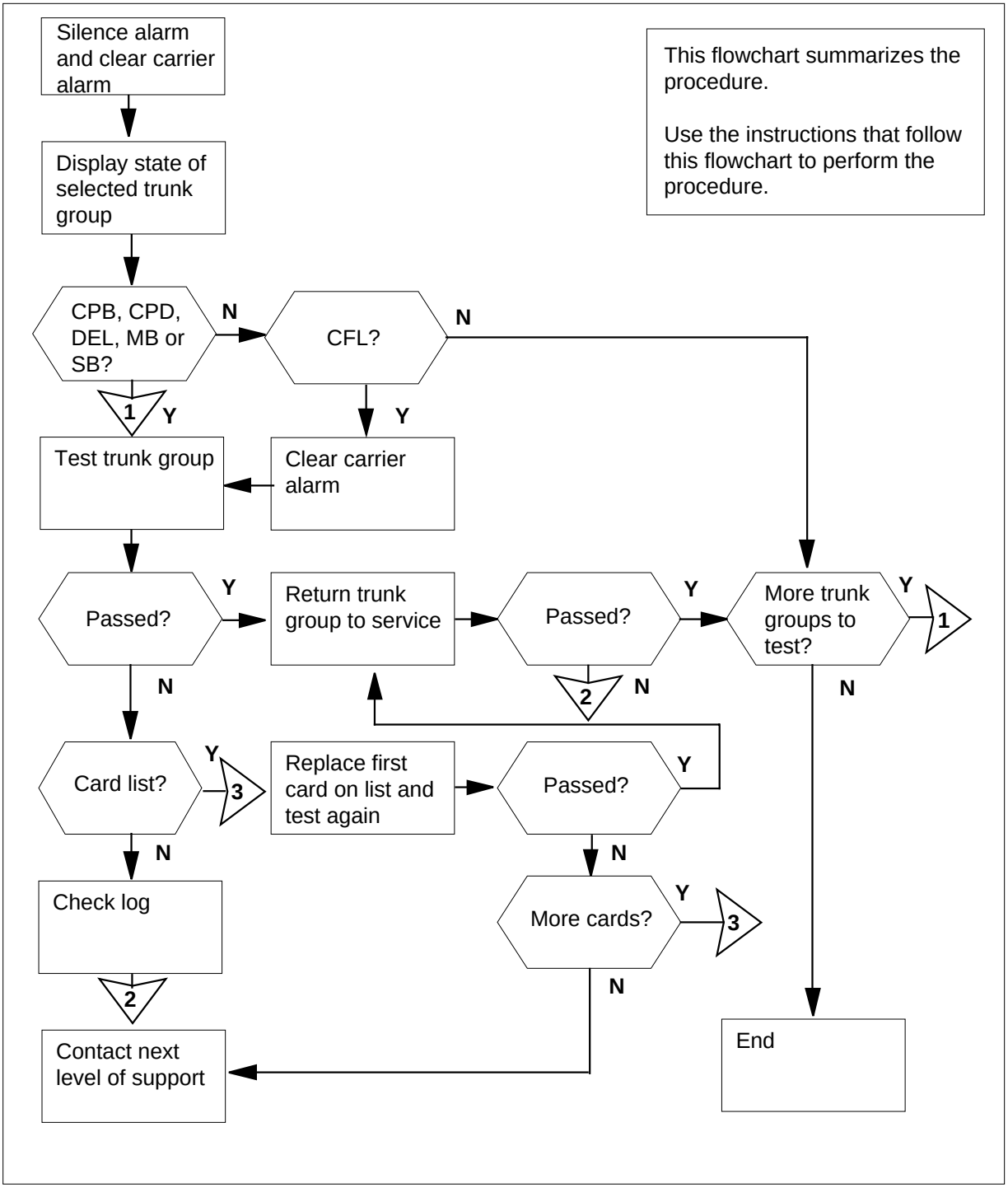
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CG
minor (continued)

Summary of clearing a Trks CG minor alarm



Trks CG
minor (continued)

Clearing a Trks CG minor alarm

At the MAP terminal

1 To access the STAT level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP display:

```
TWOWY         ITG          OTG         MISC
  36GC         49GC         62GC         19GC

 ITEM  TYPE    A    COMLANG    TOT   SB   MB   EX   %OS
 TRKS:
STAT:
```

2 To display details of all trunk groups with a minor alarm, type

>DISPGRP ALL G

and press the Enter key.

Example of a MAP display:

```
ITEM    TYPE    A   COMLANG     TOT SB  MB  EX  %OS
0       2W      G   XPMODD3     32  0   0   8   25
1       IC      G   RSCITDP1    1   0   1   0   100
2       OG      G   PDXP_RSC    1   0   1   0   100
```

3 Record the trunk groups displayed in step 2.

4 To select a trunk group on which you want to work, type

>ITEM item _no

and press the Enter key.

where

item_no
is the item number of the trunk group on which you want to work.The item number appears in the far-left column of the MAP display in step 2

5 To display details of trunk circuits in the trunk group, type

>DISALM G

and press the Enter key.

Example of a MAP display:

```
 OG    G       XPMODD1     33  0   0       8       24

PM NO   TRMNL   CKTNO STATE PM  NO  TRMNL   CKTNO   STATE
LTC 0   18  1     7   DEL
```

Trks CG
minor (continued)

6 Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do
is CFL (carrier fail)	step 23
is CPD (call process deload)	step 10
is DEL (deload)	step 10
is IDL (idle)	step 20
is INB (installation busy)	step 20
is INI (initializing)	step 20
is LO (locked out)	step 7
is MB (manual busy)	step 10
is NEQ (not equipped)	step 20
is NMB (network management busy)	step 20
is PMB (peripheral module busy)	step 8
is RES (restricted)	step 20
is RMB (remote make busy)	step 7
is SB (system busy)	step 10
is SZD (seized)	step 20

7 Contact the far-end office to determine the cause of the circuit lock out. Make sure that the circuit returns to to service.

Go to step 20.

8 Perform the correct procedure in this document to clear the alarm. Complete the procedure and return to this point.

9 Go to step 20.

10 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

Trks CG
minor (continued)

```
POST       DELQ     BUSYQ    DIG
TTP  6-052
CKT TYPE    PM NO.   COM LANG STA S R  DOT TE  RESULT


TTP ID IS:  6-052
NO CKT,SET IS EMPTY
```

11 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name
is the name of the circuit to post, as indicated in the MAP

display in step 5. An example of a circuit is XPMODD1

12 To manually busy the first trunk in the posted group, type

>BSY

and press the Enter key.

13 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP display:

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
   CKT   XPMODD1   1
   DIAGNOSTIC RESULT CONNECTION FAILURE
   ACTION REQUIRED TRY AGAIN
   CARD TYPE
   ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 19
failed, and the system generated a card list	step 15
fails, and the system did not generate a card list	step 14

Trks CG
minor (continued)

If the TST command	Do
failed, connection failure, see TRK107 log	step 13

14 The system generated a trunk 101 log. Record the information in the log. Go to step 23.

15 Record the location, description, slot number, product engineering code (PEC), and PEC of all the cards on the list.

16 Perform the correct procedure in *Card Replacement Procedures* to replace the first card on the list. Complete the procedure and return to this point.

17 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP display:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
    CKT   XPMODD1   1
```

If the TST command	Do
passed	step 18
failed, and more cards remain on the list	step 16
failed, and more cards do not remain on the list	step 23

18 To return the trunk to service, type

>RTS

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

If the RTS command	Do
passed	step 19
failed	step 20

Trks CG
minor (end)

19 To determine if more trunks in the posted trunk group that continue to have an alarm are present, type

>NEXT

and press the Enter key.

If more trunks that continue to have an alarm	Do
are present	step 12
are not present	step 20

20 Check the list recorded in step 3. Determine if more trunk groups with a critical alarm are present.

If more trunk groups with a critical alarm	Do
are present	step 21
are not present	step 24

21 To select the next trunk group, type

>STAT

and press the Enter key.

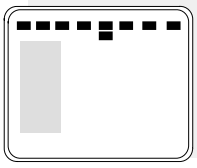
22 Go to step 2.

23 For additional help, contact the next level of support.

24 The procedure is complete.

Trks CM major

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**1CM**	.	.
							M		

Indication

At the MTC level of the MAP display, CM (preceded by a number) appears under the Trks header of the alarm banner. The CM indicates a carrier major (CM) alarm.

Meaning

At least one trunk group has a major alarm and at least one carrier is system busy.

The number that precedes CM indicates the number of trunk groups with a major alarm.

Result

The result of a trunk group major alarm on subscriber service depends on the following:

- the application and the size of the trunk group
- the amount of traffic at the time
- the major alarm threshold set in table TRKMTCE

Common procedures

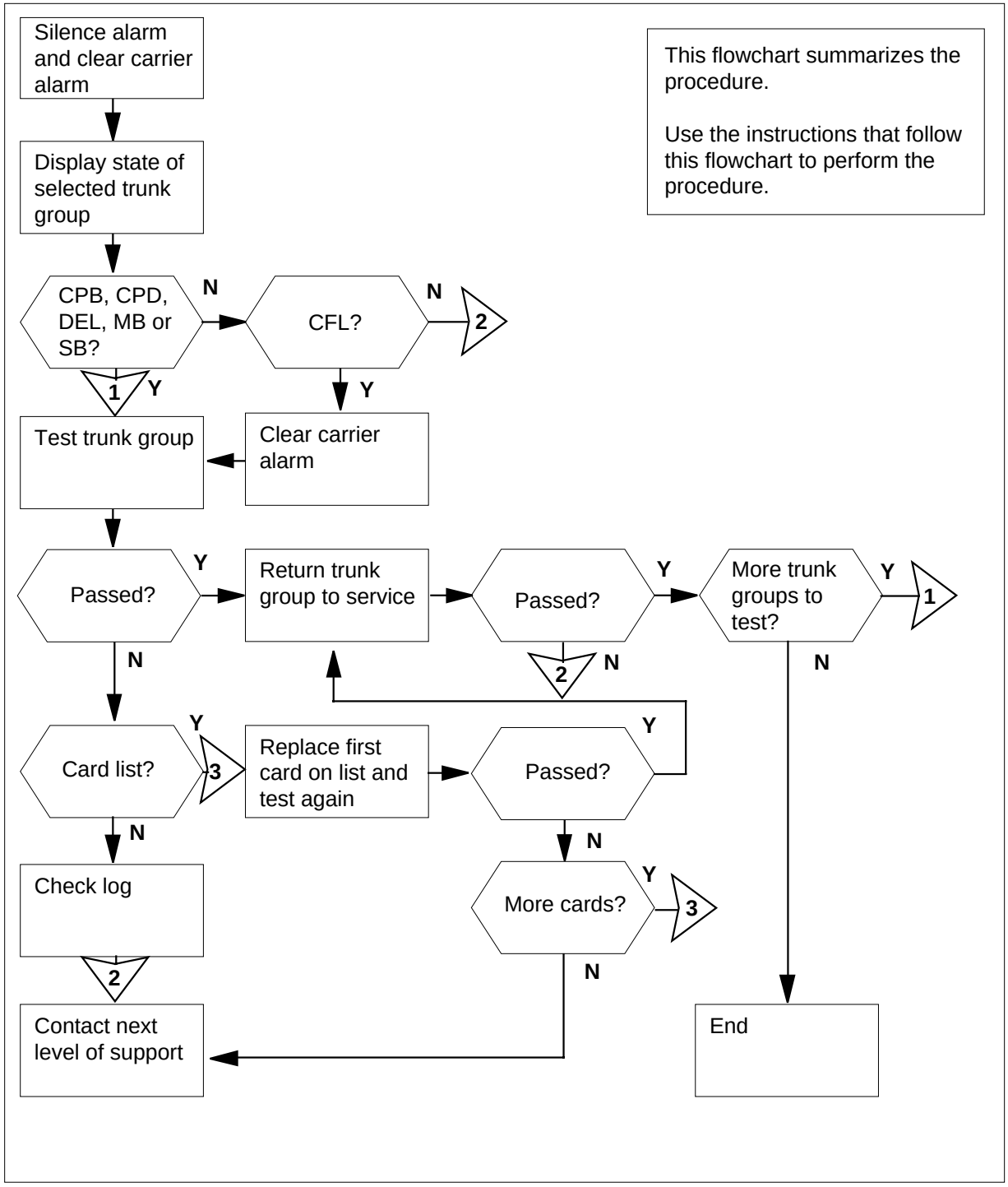
There are no common procedures.

Action

This flowchart contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CM
major (continued)

Summary of clearing a Trks CM major alarm



Trks CM
major (continued)

Clearing a Trks CM major alarm

At the MAP terminal

1 To access the STAT level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP display:

```
   TWOWY         ITG          OTG         MISC
    36GC         49GC         62GC          19GC

ITEM  TYPE    A      COMLANG     TOT    SB    MB    EX    %OS
TRKS:
STAT:
```

2 To display details of all trunk groups with a major alarm, type

>DISPGRP ALL GM

and press the Enter key.

Example of a MAP display:

```
ITEM  TYPE    A      COMLANG    TOT SB  MB    EX  %OS
 0    OG      GM     OTRAFLD    24  0   0     10  42
 1    IC      GM     RSCITDP1   1   0   1     0   100
 2    OG      GM     PDXP_RSC   1   0   1     0   100
```

3 Record the trunk groups displayed in step 2.

4 To select a trunk group on which to work, type

>ITEM item _no

and press the Enter key.

where

item_no
is the item number of the trunk group on which you want to work.

The trunk group appears in the far left column of the MAP display in

step 2

5 To display details of trunk circuits in the trunk group, type

>DISALM GM

and press the Enter key.

Example of a MAP display:

Trks CM
major (continued)

```
 IC     GM     OTRAFDD3    1   0   1     0     100

PM  NO  TRMNL  CKTNO STATE PM  NO  TRMNL CKTNO STATE
RCC 0   9 11     0    CFL
```

6 Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do
is CFL (carrier fail)	step 23
is CPD (call process deload)	step 10
is DEL (deload)	step 10
is IDL (idle)	step 20
is INB (installation busy)	step 20
is INI (initializating)	step 7
is LO (locked out)	step 8
is MB (manual busy)	step 10
is NEQ (not equipped)	step 20
is NMB (network management busy)	step 20
is PMB (peripheral module busy)	step 9
is RES (restricted)	step 20
is RMB (remote make busy)	step 8
is SB (system busy)	step 10
is SZD (seized)	step 20

7 The circuit is in an initializing (INI) state. There is no action required.

Go to step 20.

8 Contact the far-end office to determine why the circuit is busy. Make sure the circuit returns to service.

Go to step 20.

9 Perform the appropriate PM procedure in this document to clear the alarm. Complete the procedure and return to this point.

Go to step 20.

10 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

```
POST        DELQ        BUSYQ        DIG
TTP  6-030
CKT TYPE    PM NO.    COM LANG   STA S R  DOT TE  RESULT


TTP ID IS:  6-030
12 NEXT      NO CKT,SET IS EMPTY
```

11 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name is the name of the circuit to post, as indicated in the MAP display in step 5. An example of a circuit is OTRAFDD3.

Example of a MAP display:

```
LAST CKTN=24
 POSTED CKT IDLED
 SHORT CLLI IS: RSCIT
 OK,CKT POSTED
```

12 To manually busy the first trunk in the posted group, type

>BSY

and press the Enter key.

13 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP display:

Trks CM
major (continued)

```
TEST FL
 MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
    CKT   OTRAFDD3   1
    DIAGNOSTIC RESULT CONNECTION FAILURE
    ACTION REQUIRED TRY AGAIN
    CARD TYPE
    ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 18
failed, and the system generated a card list	step 15
failed, and the system did not generate a card list	step 14
failed, connection failure, see TRK107 log	step 13

14 The system generated a trunk 101 log. Record the information in the log. Go to step 23.

15 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.

16 Perform the appropriate procedure in *Card Replacement Procedures* to replace the first card on the list. Complete the procedure and return to this point.

17 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP display:

```
TEST OK
 MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
     CKT   OTRAFDD3   1
```

If the TST command	Do
passed	step 18
failed, and you did not replace all the cards on the list from step 15	step 16

If the TST command	Do
failed, and you replaced all the cards on the list from step 15	step 23

18 To return the trunk to service, type

>RTS

and press the Enter key.

Example of a MAP display:

```
STATE CHANGED
```

If the RTS command	Do
passed	step 19
failed	step 23

19 To determine if more trunks with an alarm are present in the posted trunk group, type

>NEXT

and press the Enter key.

If more trunks that continue to have an alarm	Do
are present	step 12
are not present	step 20

20 Check the list you recorded in step 3. Determine if more trunk groups with a critical alarm are present.

If more trunk groups with a critical alarm	Do
are present	step 21
are not present	step 24

21 To select the next trunk group, type

>STAT

and press the Enter key.

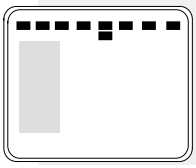
22 Go to step 2.

23 For additional help, contact the next level of support.

24 The procedure is complete.

Trks CR C and CR M critical

Alarm display



CM	MS	IOD	NET	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**CR C**	.	.

Indication

At the MTC level of the MAP display, CR C or CR M appear under the Trks header of the alarm banner. The CR C or the CR M indicates a critical alarm. The alarm changes at 30 s intervals with out-of-service alarms, like a GM.

Meaning

A CR C alarm indicates the Focused Trunks Maintenance system detected a critical number of failed call attempts. The attempts occurred through a trunk group.

A CR M alarm means the Focused Trunks Maintenance system detected a critical number of trouble reports against a trunk group.

Result

The result of a CR C alarm or a CR M alarm depends on the following:

- the type and the size of the trunk group
- the amount of traffic at the time
- the critical threshold for failed call attempts through a trunk group (table TRKMTCE)

Common procedures

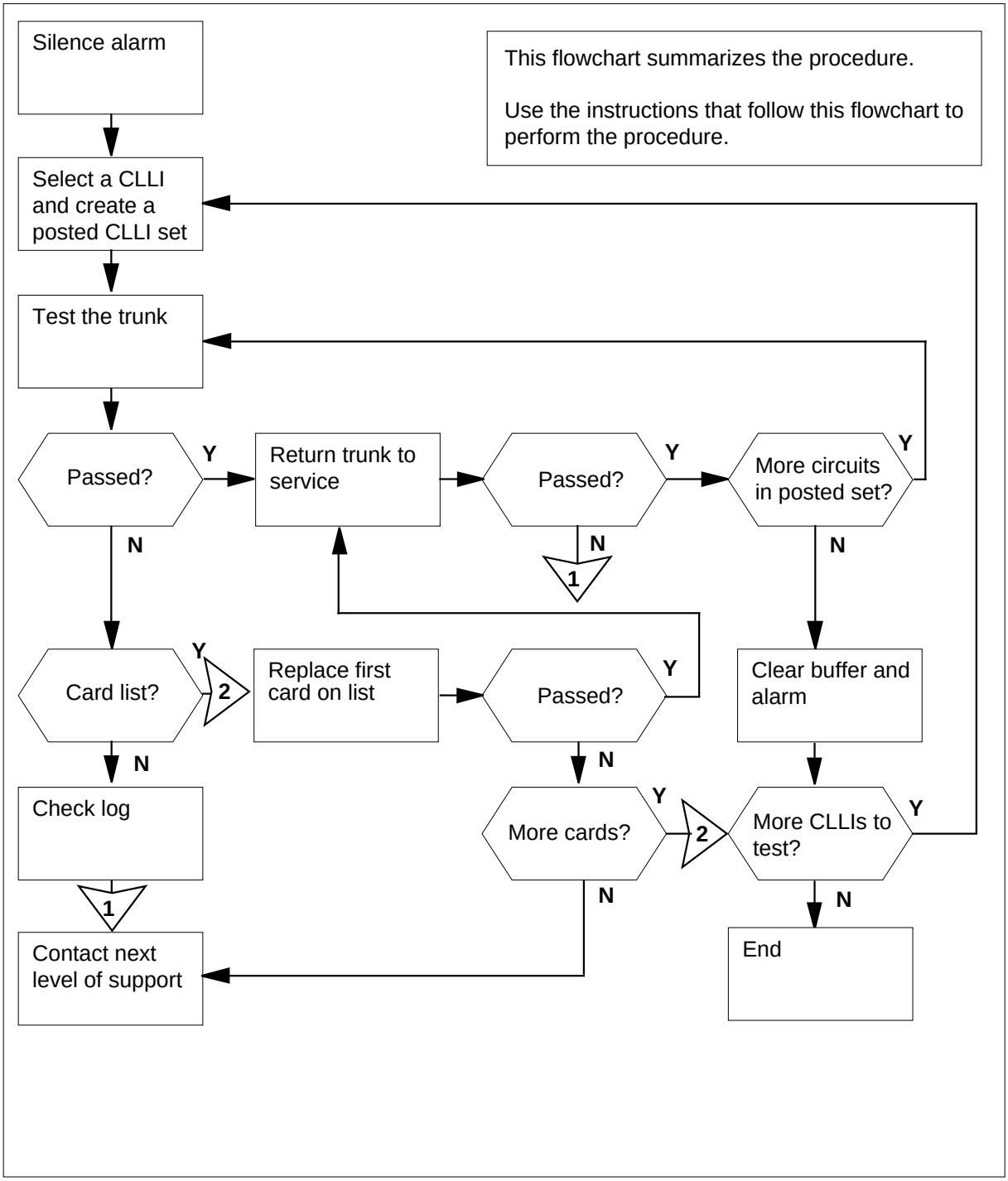
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks CR C and CR M critical (continued)

Summary of clearing a Trks CR C and CR M critical alarm



Trks CR C and CR M **critical** (continued)

Clearing a Trks CR C and CR M critical alarm

At the MAP terminal

1 To access the TRKSTRBL level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;TRKSTRBL;SIL

and press the Enter key.

Example of a MAP display:

```
     MN    MJ    CR           CLLI:                    BT:
M     0     0     0
CP    0     0     0

E#  ID   COUNT  LAST TROUBLE TIME...TROUBLE
DESCRIPTION...
 0
 1
 2
 3
 4
 5
 6
 7
 8
 9
```

2 To record the common-language location identifiers (CLLIs) of all the trunk groups in the maintenance buffer with critical alarms, type

>LISTALM alarm_type CR

and press the Enter key.

where

alarm_type
is CP if the alarm is CR C, or M if the alarm is CR M

```
 XPMIDD3      CR
  XPMIDD2     CR
  XPMIDD1     CR
```

3 Select a trunk group on which to work.

4 Record the CLLI of the trunk group you selected. An example of a CLLI is XPMIDD3 in the MAP display example in step 2.

Trks CR C and CR M critical (continued)

5 To display the contents of the maintenance buffer for the selected trunk group, type

>DISP clli alarm_type

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected.

(XPMIDD3 is an example of a CLLI)

alarm_type
is CP if the alarm is CR C, or M if the alarm is CR M

Example of a MAP display:

```
   MN MJ    CR    CLLI:XPMIDD3BT:CP
M  0  0      0
CP 1  3     10

E# ID COUNT LAST TROUBLE TIME..TROUBLE DESCRIPTION..
0  34  109   92/05/19   11:08:11    64.Lockout on
1  36  109   92/05/19   11:08:11    64.Lockout on
2
```

6 To create a posted set on which to work, type

>CREATSET clli CP format

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected

format
is the way trunks appear in the posted set (HC, MR, HC ALL, or 4 MR ALL)

7 Record all trunk groups that appear in the posted set.

8 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP response:

Trks CR C and CR M
critical (continued)

```
POST        DELQ      BUSYQ      DIG
TTP  6-030
CKT TYPE    PM NO.    COM LANG    STA S R  DOT TE  RESULT


TTP ID IS:  6-030
12 NEXT      NO CKT,SET IS EMPTY
```

9 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name
is the name of the circuit to post, as indicated in the MAP

display in step 2. An example of a circuit to post is XPMIDD3.

Example of a MAP response:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS:
XIDD3
OK,CKT POSTED
```

10 To manually busy the trunk in the control position, type

>BSY

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

11 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

Trks CR C and CR M critical (continued)

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
   CKT   XPMIDD3   1
   DIAGNOSTIC RESULT CONNECTION FAILURE
   ACTION REQUIRED TRY AGAIN
   CARD TYPE
   ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 16
failed, and the system generated a card list	step 13
failed, and the system did not generate a card list	step 12
failed, connection failure, refer to TRK107 log	step 11

12 The system generated a trunk 101 log. Record the information in the log. Go to step 25.

13 Record the location, description, slot number, PEC, and PEC suffix of all the cards on the list.

14 Perform the correct procedure in *Card Replacement Procedures* to replace the first card on the list. Complete the procedure and return to this point.

15 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
    CKT   XPMIDD3   1
```

If the TST command	Do
passed	step 16
fails, and more cards remain on the list	step 14
failed, and more cards do not remain on the list	step 25

16 To return the trunk to service, type

>RTS

and press the Enter key.

Example of a MAP response:

Trks CR C and CR M
critical (continued)

```
STATE CHANGED
```

If the RTS command	Do
passed	step 9
failed	step 25

17 To determine if any more trunks with an alarm are present in the posted trunk group, type

>NEXT

and press the Enter key.

If more trunks that continue to have an alarm	Do
are present	step 10
are not present	step 18

18 To return to the TRKSTRBL level of the MAP display, type

>TRKSTRB

and press the Enter key.

19 Clear a trunk group from the maintenance buffer. The trunk group returned to service earlier. To clear the trunk group, type

>CLRBUF clli alarm_type

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected in step 3.

An example of a CLLI is XPMIDD3

alarm_type
is CP if the alarm is CR C, or M if the alarm is CR M

Example of a MAP response:

```
Will clear entire CP upper buffer for XPMIDD3.
Please confirm (“YES” or “NO”):
```

20 To confirm the command, type

>YES

and press the Enter key.

Trks CR C and CR M critical (end)

21 To clear the alarm, type

>CLRALM clli alarm_type

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected in step 3.

An example of a CLLI is XPMIDD3

alarm_type
is CP if the alarm is CR C, or M if the alarm is CR M

Example of a MAP response:

```
Will clear CP alarm, reset attempt and failure counters
Please confirm ("YES" or "NO"):
```

22 To confirm the command, type

>YES

and press the Enter key.

Example of a MAP response:

```
CP alarm cleared, attempt and failure counters reset.
```

23 Determine if the alarm cleared.

Note: The status of the alarm appears in the MAP response, like the example in step 22.

If the alarm	Do
cleared	step 26
did not clear	step 24

24 Check the list that you recorded in step 2 to determine if there are more trunk groups to test.

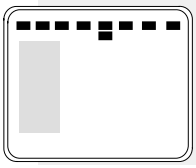
If more trunk groups to test	Do
are present	step 3
are not present	step 25

25 For additional help, contact the next level of support.

26 The procedure is complete.

Trks CS
critical, major, or minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**3CS**	.	.

Indication

At the MTC level of the MAP display, CS preceded by a number appears under the Trks header of the alarm banner. The CS indicates a carrier system busy (CS) critical, major, or minor alarm.

Meaning

One or more trunk groups have system busy trunks and at least one carrier is system busy.

The number under the Trks header in the alarm banner indicates the number of CS trunks affected.

- For a critical alarm, *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, there is no display under the alarm indicator.

When the critical alarm reaches the threshold set in table TRKMTCE, a critical alarm is raised. When the major alarm reaches the threshold set in table TRKMTCE, a major alarm is raised. When the minor alarm reaches the threshold set in table TRKMTCE, a minor alarm is raised.

Result

The result of a CS alarm depends on the following factors:

- the type and size of the trunk group(s)
- the amount of traffic at the time
- the correct critical, major, or minor alarm threshold set in table TRKMTCE for the trunk group(s)

Common procedures

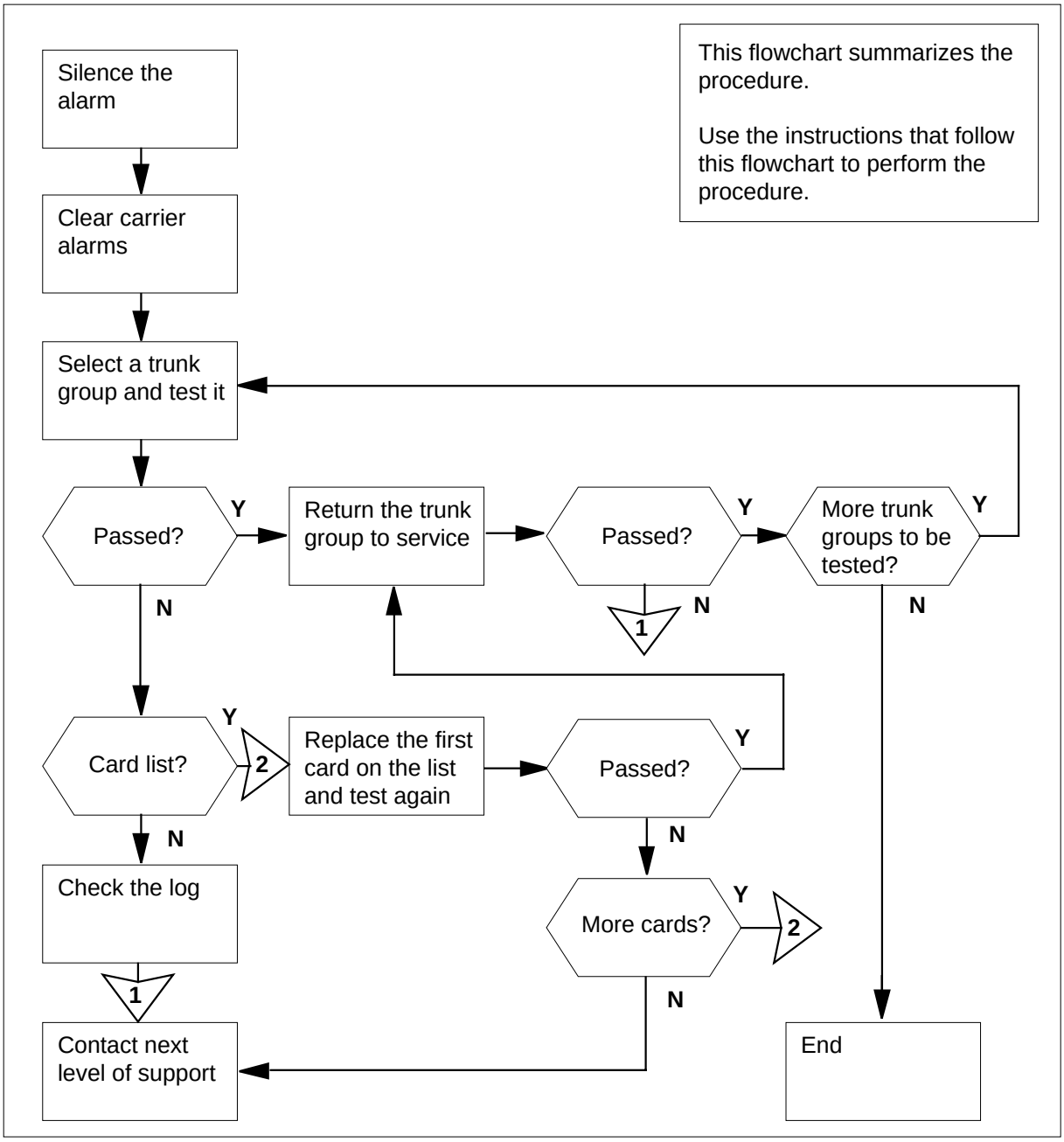
There are no common procedures.

Trks CS
critical, major, or minor (continued)

Action

The procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Summary of clearing a Trks CS critical, major, or minor alarm



Trks CS
critical, major, or minor (continued)

Clearing a Trks CS critical, major, or minor alarm

At the MAP terminal

1 Determine if an audible alarm is present.

If an audible alarm	Do
is present	step 2
is not present	step 3

2 To silence the alarm, type

>SIL

and press the Enter key.

3 Perform the procedure *Clearing a C. alarm* in this document. Complete the procedure and return to this point.

4 To access the STAT level of the MAP display, type

>MAPCI;MTC;TRKS;STAT

and press the Enter key.

Example of a MAP display:

```
TWOWY         ITG          OTG         MISC
 36GC         49GC         62GC         19GC

ITEM  TYPE   A    COMLANG    TOT     SB    MB    EX    %OS
TRKS:
STAT:
```

5 To display details of all alarm trunk groups, type

>DISPGRP ALL SB

and press the Enter key.

Example of a MAP display:

```
ITEM    TYPE    A   COMLANG     TOT SB      MB  EX  %OS
0       MISC    SB  DMODEMC     8   8       0   0   100
1       IC      SB  RSCITDP1    1   0       1   0   100
2       OG      SB  PDXP_RSC    1   0       1   0   100
```

6 Record the trunk groups that appear in step 5.

7 To select a trunk group on which to work, type

>ITEM item _no

and press the Enter key.

Trks CS
critical, major, or minor (continued)

where

item_no
is the item number of the trunk group you want work on, as

indicated in the left-most column of the MAP display in step 5

8 To display details of trunk circuits in the trunk group, type

>DISALM SB

and press the Enter key.

9 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

```
POST      DELQ      BUSYQ      DIG
TTP  6–030
CKT TYPE    PM NO.    COM LANG    STA S R  DOT TE  RESULT


TTP ID IS:  6–030
12 NEXT      NO CKT,SET IS EMPTY
```

10 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name
is the name of the circuit to be posted, as indicated in the MAP

display in step 5, for example, RSCITDP1

Example of a MAP display:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK,CKT POSTED
```

11 To manually busy the first trunk in the posted group, type

>BSY

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

Trks CS
critical, major, or minor (continued)

12 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
   CKT   RSCITDP1   1
   DIAGNOSTIC RESULT CONNECTION FAILURE
   ACTION REQUIRED TRY AGAIN
   CARD TYPE
   ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 17
failed, and the system generated a card list	step 14
failed, and the system did not generate a card list	step 13

13 The system generates a trunk 101 log. Record the information in the log, and go to step 22.

14 Record the location, description, slot number, and product engineering code (PEC), and the PEC suffix of all the cards on the list.

15 To replace the first card on the list, perform the correct card replacement procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

16 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
    CKT   RSCITDP1   1
```

If the TST command	Do
passed	step 17
failed, and more cards remain on the list	step 15
failed, and more cards do not remain on the list	step 22

Trks CS
critical, major, or minor (end)

17 To return the trunk group to service, type

>RTS

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

If the RTS command	Do
passed	step 18
failed	step 22

18 To determine if more trunks are present in the posted trunk group that continue to have an alarm, type

>NEXT

and press the Enter key.

If	Do
more trunks that still have an alarm are present	step 11
more trunks that still have an alarm are not present	step 19

19 Determine from the list that you recorded in step 6 more trunk groups with a critical alarm are present.

If	Do
more trunk groups with a critical alarm are present	step 20
more trunk groups with a critical alarm are not present	step 23

20 To select the next trunk group, type

>STAT

and press the Enter key.

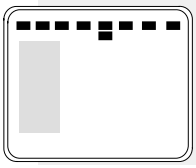
21 Go to step 5.

22 For additional help, contact the next level of support.

23 The procedure is complete.

Trks EX
critical, major, or minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**1EX**	.	.

Indication

At the MTC level of the MAP, EX (preceded by a number) appears under the Trks header of the alarm banner. The EX indicates a external busy (EX) critical, major, or minor alarm.

Meaning

One or more trunk groups have external busy trunks. Removal of these trunks from service occurred at the far end.

The number under the Trks header in the alarm banner indicates the number of external trunks affected.

- For a critical alarm, a *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, a number does not appear under the alarm indicator.

Arrival at the critical alarm threshold set in table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in table TRKMTCE raises a major alarm. Arrival at the minor alarm threshold set in table TRKMTCE raises a minor alarm.

Result

The affect of an EX alarm depends on the following causes:

- the type and the size of the trunk group(s)
- the amount of traffic at the time
- the correct critical, major, or minor alarm threshold set in table TRKMTCE for the trunk group(s)

Common procedures

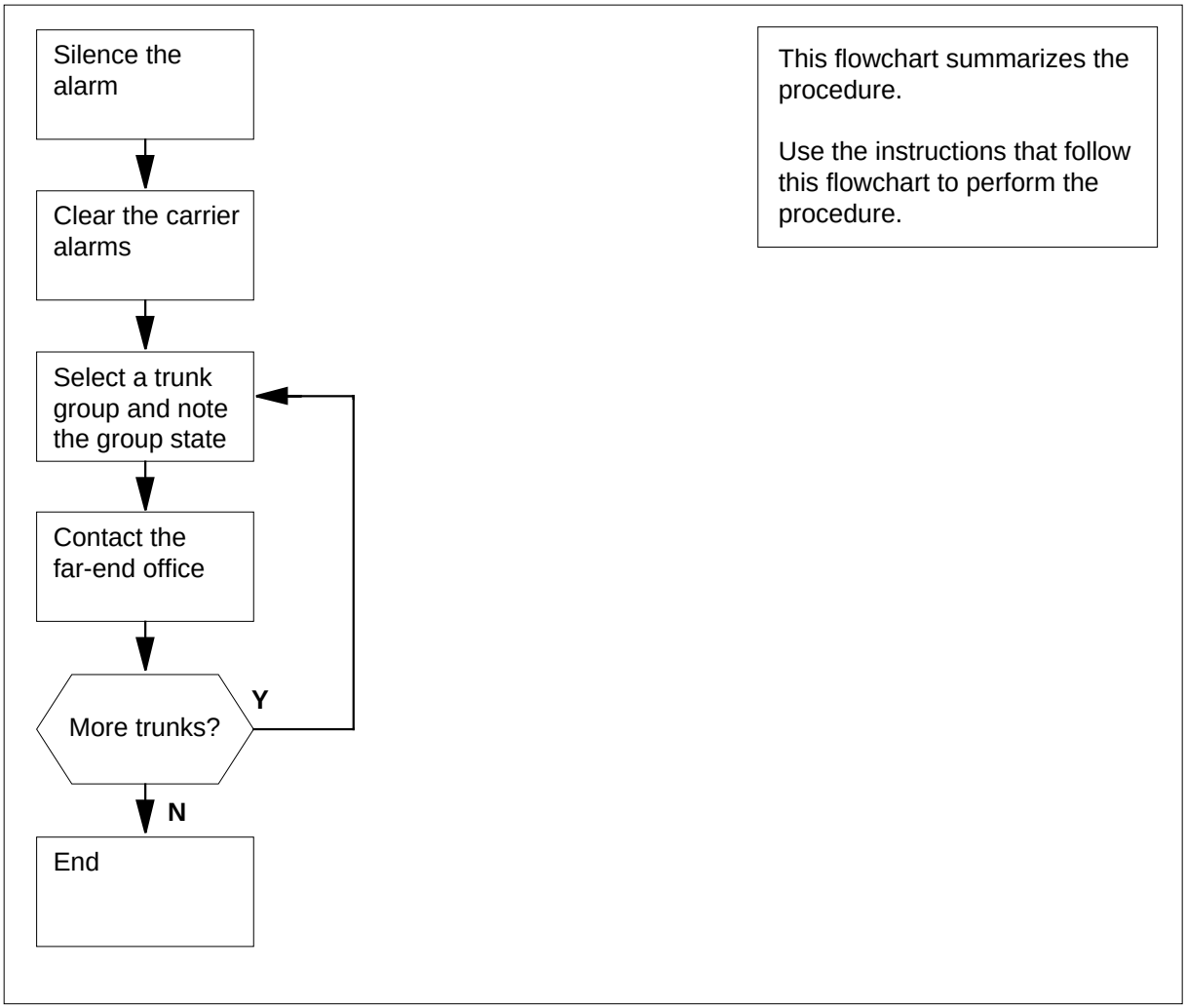
There are no common procedures.

Trks EX
critical, major, or minor (continued)

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Summary of clearing an Trks EX critical, major, or minor alarm



Trks EX
critical, major, or minor (continued)

Clearing an Trks EX critical, major, or minor alarm

At the MAP terminal

1 To access the STAT level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP display:

```
TWOWY         ITG          OTG         MISC
 36GC         49GC         62GC         19GC

ITEM  TYPE    A     COMLANG     TOT     SB     MB     EX     %OS
TRKS:
STAT:
```

2 To display details of all trunk groups with external busy circuits, type

>DISPGRP ALL EX

and press the Enter key.

Example of a MAP display:

```
ITEM    TYPE    A   COMLANG TOT SB  MB      EX  %OS
0  MISC ECX DMODEMC 8   8   0   0   42
1  IC   EX  RSCITDP1    1   0   1   0       100
2  OG   EX  PDXP_RSC    1   0   1   0       100
```

3 Record the trunk groups that appear in step 2.

4 To select a trunk group on which to work and record the item number on the display, type

>ITEM item _no

and press the Enter key.

where

item_no
is the item number of the trunk group on which you want to work. The trunk group appears in the far left column of the MAP display in step 2.

5 To display details of trunk circuits in the selected group, type

>DISALM EX

and press the Enter key.

Example of a MAP display:

Trks EX
critical, major, or minor (end)

```
  IC     EX  RSCITDP1     1   0   1   0        100

PM NO    TRMNL  CKTNO    STATE    PM  NO       TRMNL
CKTNO    STATE
RCC 0    9 11       0  RMB
```

6 Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do
is LO (locked out)	step 7
is RMB (remote make busy)	step 8

7 The circuit is in a locked out state. Contact the far-end office to determine the cause of the locked out circuit. Make sure that the circuit returns to service.

Go to step 9.

8 Contact the far-end office to determine why the circuit is remote make busy. Contact the far-end office to make sure that the circuit returns to service.

9 Check the list recorded in step 3. Determine if more trunk groups with external busy circuits are present.

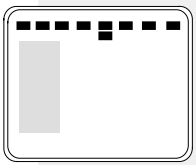
If more trunk groups with external busy circuits	Do
are present	step 4
are not present	step 11

10 For additional help, contact the next level of support.

11 The procedure is complete.

Trks GC, GM, and G critical, major, or minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**2GC**	.	.

Indication

At the MTC level of the MAP display, GC, GM, or G (preceded by a number) appears under the Trks header of the alarm banner. The GC, GM or G indicates a trunk group critical, major, or minor alarm.

Meaning

A minimum of one trunk group has a critical alarm. A GM alarm indicates that a minimum of one trunk group has a major alarm. A G alarm indicates that a minimum of one trunk group has a minor alarm.

The number under the Trks header in the alarm banner indicates the number of affected GC, GM and G trunks.

- For a critical alarm, a *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, the area under the alarm indicator is blank.

Arrival at the critical alarm threshold set in table CLLIMTCE raises a critical alarm. Arrival at the major alarm threshold set in table CLLIMTCE raises a major alarm. Arrival at the minor alarm threshold set in table CLLIMTCE raises a minor alarm.

Result

The result of a trunk group alarm depends on the following causes:

- the type and the size of the trunk group
- the amount of traffic at the time
- the correct critical, major, or minor alarm threshold set in table CLLIMTCE

Common procedures

There are no common procedures.

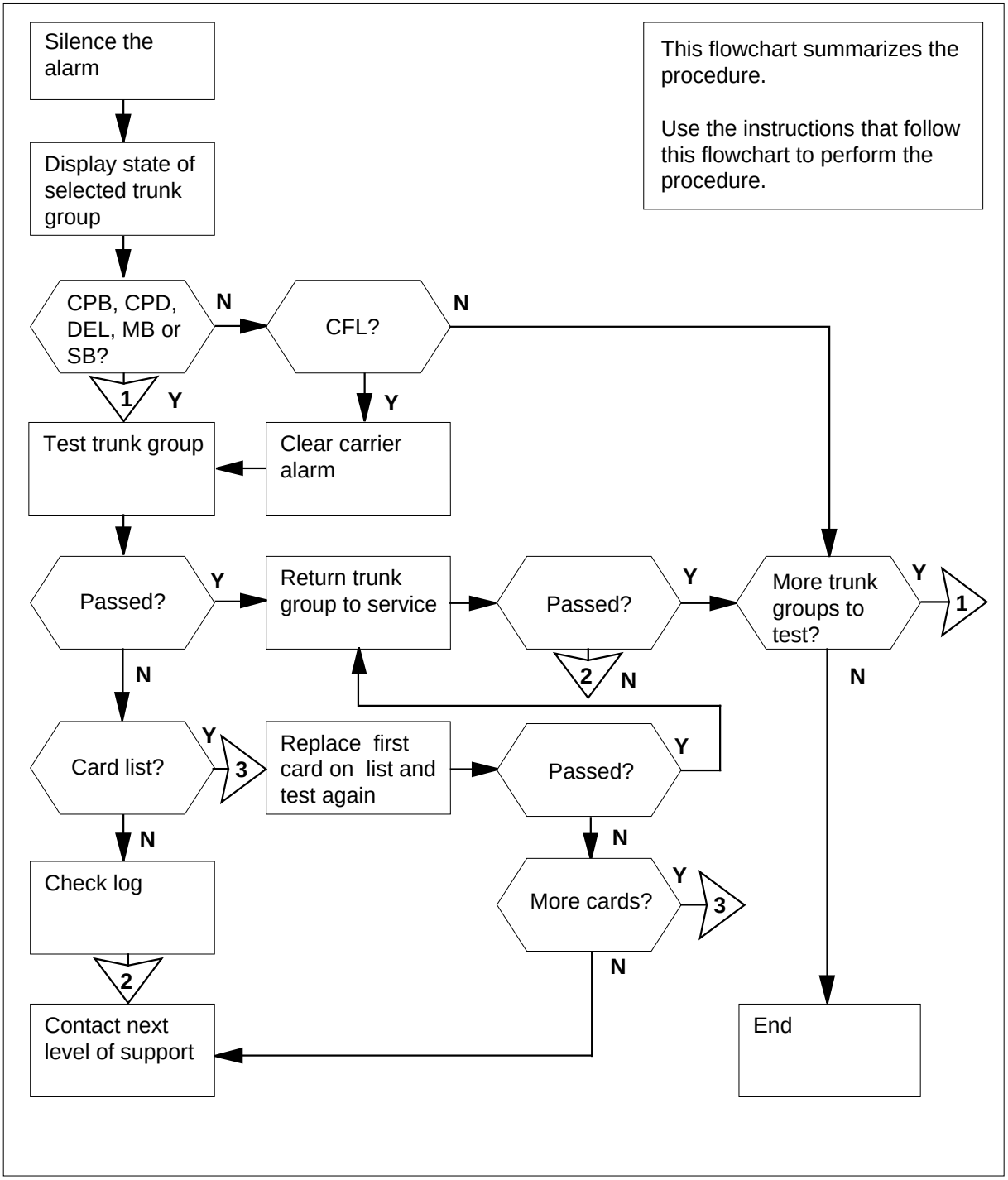
Trks GC, GM, and G critical, major, or minor (continued)

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks GC, GM, and G critical, major, or minor (continued)

Summary of clearing a Trks GC, GM, and G critical, major, or minor alarm



Trks GC, GM, and G critical, major, or minor (continued)

Clearing a Trks GC, GM, and G critical, major, or minor alarm

At the MAP terminal

1 To access the STAT level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP display:

```
TWOWY         ITG          OTG         MISC
 36GC         49GC         62GC         19GC

ITEM  TYPE    A     COMLANG     TOT     SB     MB     EX     %OS
TRKS:
STAT:
```

2 To display details of all trunk groups with a critical, major, or minor alarm, type

>DISPGRP ALL type

and press the Enter key.

where

type
is GC for critical alarms, GM for major alarms, or G for minor alarms

Example of a MAP display:

```
 ITEM     TYPE     A    COMLANG TOT SB  MB       EX  %OS
 0  MISC GC  DMODEMC 8    8    0   0   100
 1  IC   GC  RSCITDP1     1    0   1   0        100
 2  OG   GC  PDXP_RSC     1    0   1   0        100
```

3 Record the trunk groups displayed in step 2.

4 To select a trunk group on which to work, type

>ITEM item _no

and press the Enter key.

where

item_no
is the item number of the trunk group on which you want to work.

The trunk group appears in the far left column of the MAP display in step 2.

Trks GC, GM, and G critical, major, or minor (continued)

5 To display details of trunk circuits in the trunk group, type

`>DISALM type`

and press the Enter key.

where

type
is GC for critical alarms, GM for major alarms, or G for minor alarms

Example of a MAP display:

```
 IC    MB  RSCITDP1    1   0   1   0       100

PM NO   TRMNL   CKTNO   STATE  PM NO  TRMNL  CKTNO  STATE
RCC 0   9 11      0      CFL
```

6 Determine the state of the trunk group.

Note: The state of the trunk group appears under the first STATE header in the MAP display.

If the state of the trunk group	Do
is CFL (carrier fail)	step 10
is CPD (call process deload)	step 11
is DEL (deload)	step 11
is IDL (idle)	step 21
is INB (installation busy)	step 21
is INI (initializing)	step 21
is LO (locked out)	step 7
is MB (manually busy)	step 11
is NEQ (not equipped)	step 21
is NMB (network management busy)	step 21
is PMB (peripheral module busy)	step 8
is RES (restricted)	step 21
is RMB (remote make busy)	step 7
is SB (system busy)	step 11

Trks GC, GM, and G critical, major, or minor (continued)

If the state of the trunk group	Do
is SZD (seized)	step 21

7 Contact the far-end office to determine the cause of the locked out circuit. Make sure that the circuit returns to service.

Go to step 21.

8 Perform the correct alarm clearing procedure in this document. Complete the procedure and return to this point.

9 Go to step 21.

10 Perform the procedure *Clearing a Trks C Minor alarm* in this document. Complete the procedure and return to this point.

11 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

```
POST        DELQ        BUSYQ        DIG
TTP  6-030
CKT TYPE   PM NO.   COM LANG   STA S R  DOT TE  RESULT


TTP ID IS:  6-030
12 NEXT      NO CKT,SET IS EMPTY
```

12 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name
is the name of the circuit to post. The circuit appears in the MAP display in step 5. An example of a circuit is RSCITDP1.

Example of a MAP display:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK,CKT POSTED
```

13 To manually busy the first trunk in the posted group, type

>BSY

and press the Enter key.

Example of a MAP display:

Trks GC, GM, and G critical, major, or minor (continued)

```
STATE CHANGED
```

14 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP display :

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
   CKT   RSCITDP1   1
   DIAGNOSTIC RESULT CONNECTION FAILURE
   ACTION REQUIRED TRY AGAIN
   CARD TYPE
   ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 19
failed, and the system generated a card list	step 16
failed, and the system did not generate a card list	step 15
failed, connection failure, refer to TRK107 log	step 14

15 The system generated a trunk 101 log. Record the information in the log. Go to step 24.

16 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.

17 To replace the first card on the list,perform the correct procedure in *Card Replacement Procedures.* Complete the procedure and return to this point.

18 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP display:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
    CKT   RSCITDP1   1
```

If the TST command	Do
passed	step 19

Trks GC, GM, and G critical, major, or minor (continued)

If the TST command	Do
failed, and and you did not replace all the cards on the list recorded in step 16	step 17
failed, and you replaced all the cards on the list recorded in step 16	step 24

19 To return the trunk group to service, type

>RTS

and press the Enter key.

Example of a MAP display:

```
STATE CHANGED
```

If the RTS command	Do
passed	step 20
failed	step 24

20 To determine if more trunks in the posted trunk group that continue to have an alarm are present, type

>NEXT

and press the Enter key.

If more trunk groups that continue to have an alarm	Do
are present	step 13
are not present	step 21

21 Check the list recorded in step 3. Determine if more trunk groups with a critical, major, or minor alarm are present.

If more trunk groups with alarms	Do
are present	step 22
are not present	step 25

22 To go to the next trunk group, type

>STAT

and press the Enter key.

Example of a MAP display:

Trks GC, GM, and G critical, major, or minor (end)

```
TWOWY         ITG          OTG         MISC
 36GC         49GC         62GC         19GC

ITEM  TYPE    A     COMLANG     TOT     SB    MB    EX    %OS
TRKS:
STAT:
```

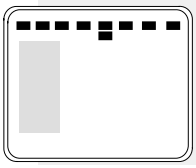
23 Go to step 2.

24 For additional help, contact the next level of support.

25 The procedure is complete.

Trks MB
critical, major, or minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**4MB**	.	.

Indication

At the MTC level of the MAP display, MB (preceded by a number) appears under the Trks header of the alarm banner. The MB indicates a manually-busy (MB) critical, major, or minor alarm.

Meaning

A minimum of one trunk in a trunk group is manual busy and removed from service.

The number under the Trks header in the alarm banner indicates the number of affected manual-busy trunk groups.

- For a critical alarm, *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, the space under the alarm indicator is blank.

Result

The impact of an MB alarm depends on the following factors:

- the type of trunk
- the size of the trunk group(s)
- the amount of traffic at the time
- the correct critical, major, or minor alarm threshold set in table TRKMTCE for the affected trunk group

Common procedures

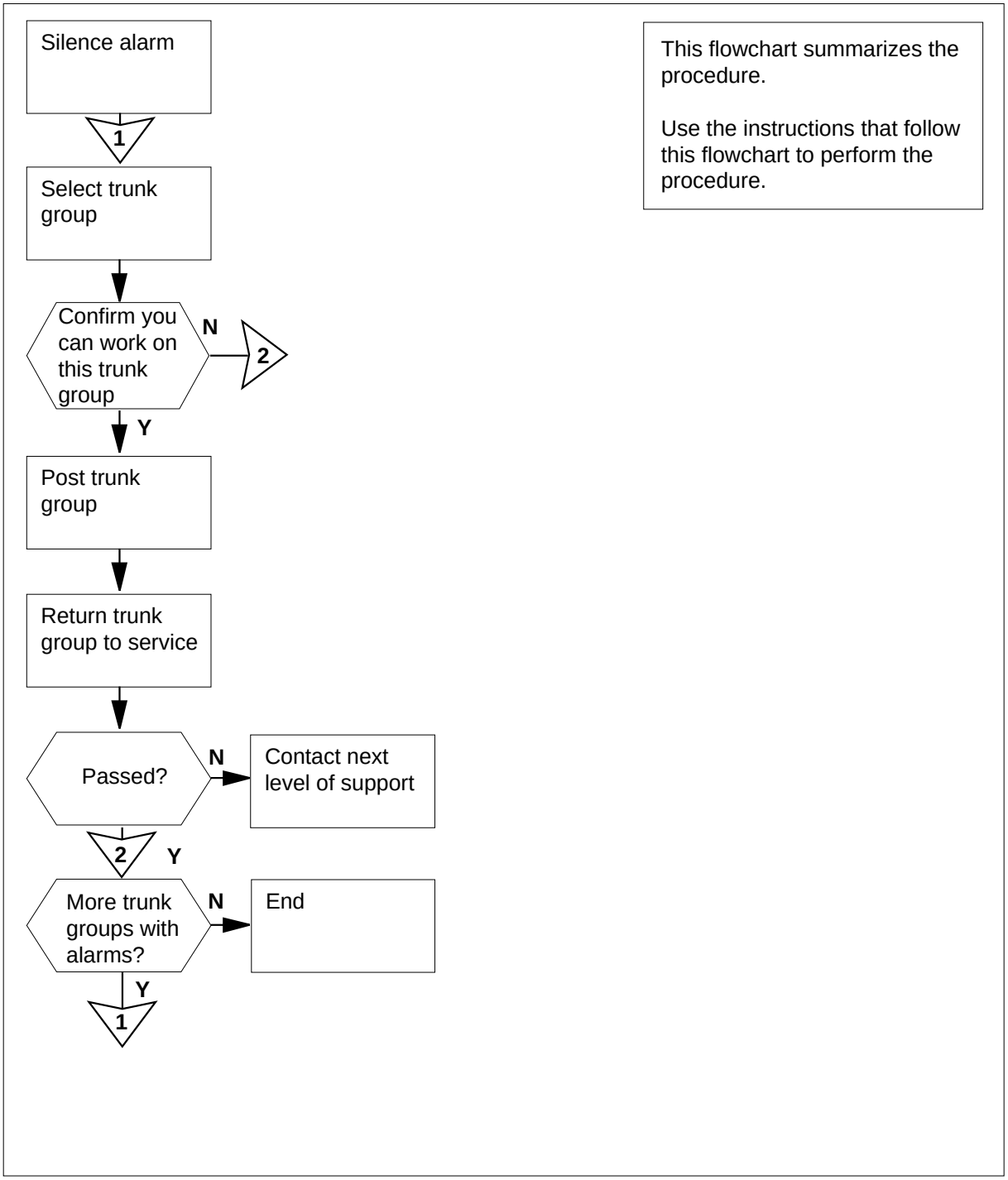
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks MB
critical, major, or minor (continued)

Summary of clearing a Trks MB critical, major, or minor alarm



Trks MB
critical, major, or minor (continued)

Clearing a Trks MB critical, major, or minor alarm

At the MAP terminal

1 To access the STAT level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP display:

```
 TWOWY         ITG          OTG         MISC
  36GC         49GC         62GC         19GC

 ITEM  TYPE    A    COMLANG    TOT    SB    MB    EX    %OS
 TRKS:
 STAT:
```

2 To display details of all trunk groups with a major alarm, type

>DISPGRP ALL MB

and press the Enter key.

Example of a MAP display:

```
ITEM    TYPE    A   COMLANG TOT SB  MB      EX  %OS
0  MISC MB  DMODEMC 8   8   0   0   24
1  IC   MB  RSCITDP1    1   0   1   0       36
2  OGC  MB  PDXP_RSC    1   0   1   0       100
```

3 Record the trunk groups displayed in step 2.

4 To select a trunk group to work on and record its item number on the display, type

>ITEM item _no

and press the Enter key.

where

item_no
is the item number of the trunk group you want to work on. The item number appears in the far left column of the MAP display in step 2.

5 To display details of trunk circuits in the trunk group, type

>DISALM MB

and press the Enter key.

Trks MB
critical, major, or minor (continued)

6 Maintenance personnel in your office can perform maintenance on this trunk or on PMs related to this trunk. Determine from other maintenance personnel if you can return this trunk group to service.

If you	Do
are permitted to return the trunk group to service	step 7
are not permitted to return the trunk group to service	step 10

7 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

```
POST        DELQ        BUSYQ        DIG
TTP  6-030
CKT TYPE   PM NO.    COM LANG   STA S R  DOT TE  RESULT


TTP ID IS:  6-030
12 NEXT      NO CKT,SET IS EMPTY
```

8 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name
is the name of the circuit to post. The name appears in the MAP display in step 5. The name RSCITDP1 is an example of a circuit.

Example of a MAP display:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK,CKT POSTED
```

9 To return the trunk group to service, type

>RTS ALL

and press the Enter key.

Trks MB
critical, major, or minor (end)

Example of a MAP response:

```
STATE CHANGED
```

If the RTS command	Do
passed	step 10
failed	step 13

10 Check the list recorded in step 3. Determine if more trunk groups have a critical, major, or minor alarm.

If more trunk groups	Do
have alarms	step 11
do not have alarms	step 14

11 To select the next trunk group, type

>NEXT

and press the Enter key.

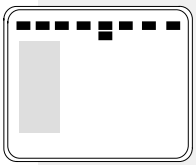
12 Go to step 4.

13 For additional help, contact the next level of support.

14 The procedure is complete.

Trks MJ C and MJ M critical or major

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**MJC**	.	.

Indication

At the MTC level of the MAP display, MJ C or MJ M appear under the Trks header of the alarm banner. The MJ C or MJ M indicates a trunk group critical or major alarm. The alarm changes at 30 s intervals with out-of-service alarms, like a GM.

Meaning

An MJ C alarm indicates that the Focused Trunks Maintenance system detected a critical number of failed call attempts. The attempts occurred through a trunk group.

An MJ M alarm indicates that the Focused Trunks Maintenance system detected a major number of failed call attempts. The attempts occurred through a trunk group.

Arrival at the critical alarm threshold set in table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in table TRKMTCE raises a major alarm.

Result

The result of an MJ C or an MJ M alarm depends on the following:

- the type and the size of the trunk group
- the amount of traffic at the time
- the critical or major threshold for failed call attempts by way of a trunk group set in table TRKMTCE

Common procedures

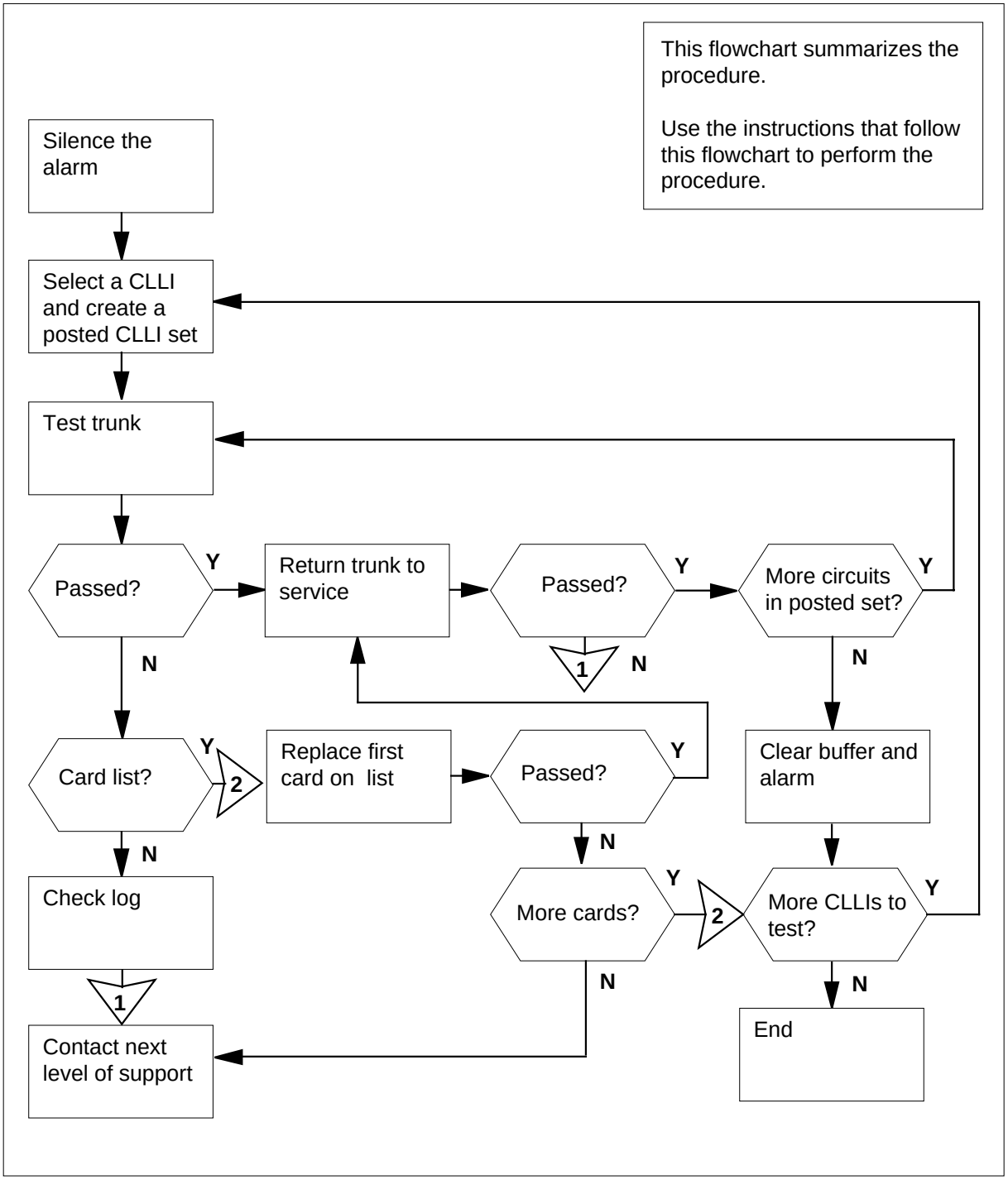
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks MJ C and MJ M critical or major (continued)

Summary of clearing a Trks MJ C and MJ M critical or major alarm



Trks MJ C and MJ M critical or major (continued)

Clearing a Trks MJ C and MJ M critical or major alarm

At the MAP terminal

1 To access the TRKSTRBL level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;TRKSTRB;SIL

and press the Enter key.

Example of a MAP display:

```
          MN    MJ    CR              CLLI:             BT:
M          0     0     0
CP         0     0     0

E#   ID  COUNT  LAST TROUBLE TIME  .. TROUBLE DESCRIPTION
 0
 1
 2
 3
 4
 5
 6
 7
 8
 9
```

2 To record the common language location identifiers (CLLIs) of all the trunk groups in the maintenance buffer that have critical alarms, type

>LISTALM alarm_type MJ

and press the Enter key.

where

alarm_type
is CP if the alarm is critical, or M if the alarm is major

Example of a MAP display:

```
OTRAFDD3     MJ
OTRAFDD2     MJ
OTRAFDD1     MJ
```

3 Select a trunk group on which to work.

4 Record the CLLI of the trunk group that you selected. In the MAP display example in step 2, OTRAFDD3 is an example of a CLLI.

Trks MJ C and MJ M critical or major (continued)

5 To display the contents of the maintenance buffer for the selected trunk group, type

>DISP clli alarm_type

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected. An example of a CLLI is OTRAFDD3.

alarm_type
is CP if the alarm is critical, or M if the alarm is major

Example of a MAP display:

```
   MN   MJ  CR  CLLI:OTRAFDD3   BT:CP
M  0    0    0
CP 1    3    9
E# ID   COUNT   LAST TROUBLE TIME..TROUBLE DESCRIPTION..
0  34    109     92/05/19   11:08:11        64.Lockout on
1  36    109     92/05/19   11:08:11        64.Lockout on
2
```

6 To create a posted set on which to work, type

>CREATSET clli MJ format

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected

format
is the way trunks in the posted set appear (HC, MR, HC ALL, MR ALL)

7 Record all trunk groups that appear in the posted set.

8 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

```
POST        DELQ        BUSYQ        DIG
TTP  6-030
CKT TYPE     PM NO.   COM LANG    STA S R  DOT TE  RESULT

TTP ID IS:  6-030
12 NEXT      NO CKT,SET IS EMPTY
```

9 To post the trunk group, type

>POST G trunk_name

Trks MJ C and MJ M critical or major (continued)

and press the Enter key.

where

trunk_name
is the name of the circuit to post. The circuit appears in the MAP display in step 2. An example of the circuit to post is OTRAFDD3.

Example of a MAP display:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: OFDD3
OK,CKT POSTED
```

10 To manually busy the trunk in the control position, type

>BSY

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

11 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
   CKT   OTRAFDD3   1
   DIAGNOSTIC RESULT CONNECTION FAILURE
   ACTION REQUIRED TRY AGAIN
   CARD TYPE
   ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 16
failed, and the system generated a card list	step 13
failed, and the system did not generate a card list	step 12
failed, connection failure, refer to TRK107 log	step 11

12 The system generated a trunk101 log. Record the information in the log. Go to step 28.

Trks MJ C and MJ M critical or major (continued)

13 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.

14 To replace the first card on the list, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

15 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
    CKT   OTRAFDD3   1
```

If the TST command	Do
passed	step 16
failed, and you did not replace all the cards on the list recorded in step 13	step 14
failed, and you replaced all the cards on the list recorded in step 13	step 28

16 To return the trunk to service, type

>RTS

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

If the RTS command	Do
passed	step 17
failed	step 28

17 To determine if more trunks in the posted trunk group that continue to have an alarm are present, type

>NEXT

and press the Enter key.

If more trunks that continue to have an alarm	Do
are present	step 10

Trks MJ C and MJ M critical or major (continued)

If more trunks that continue to have an alarm	Do
are not present	step 18

18 Check the list recorded in step 7. Determine if any more trunk groups with an alarm are present.

If more trunk groups with an alarm	Do
are present	step 19
are not present	step 21

19 To select the next trunk group, type

>STAT

and press the Enter key.

20 Go to step 9.

21 To access the TRKSTRBL level of the MAP display, type

>TRKSTRBL

and press the Enter key.

22 Clear a trunk group from the maintenance buffer. This trunk group returned to service earlier. To clear this trunk group, type

>CLRBUF clli alarm_type

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected in step 3. An

example of a CLLI is OTRAFIDD3.

alarm_type
is CP if the alarm is critical, or M if the alarm is major

Example of a MAP response:

```
Will clear entire CP upper buffer for OTRAFDD3.
Please confirm (“YES” or “NO”):
```

23 To confirm the command, type

>YES

and press the Enter key.

24 To clear the alarm, type

>CLRALM clli alarm_type

Trks MJ C and MJ M critical or major (end)

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected in step 3. An example of a CLLI is OTRAFIDD3.

alarm_type
is CP if the alarm is critical, or M if the alarm is major

Example of a MAP response:

```
Will clear CP alarm, reset attempt and failure counters.
Please confirm (“YES” or “NO”):
```

25 To confirm the command, type

>YES

and press the Enter key.

Example of a MAP response:

```
  CP alarm cleared, attempt and failure counters reset.
```

26 Determine if the alarm cleared.

Note: The status of the alarm appears in the MAP response, like in step 24.

If the alarm	Do
cleared	step 29
did not clear	step 27

27 Check the list recorded in step 2. Determine if you must test more trunk groups.

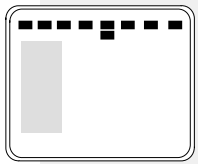
If more trunk groups to test	Do
are present	step 3
are not present	step 29

28 For additional help, contact the next level of support.

29 The procedure is complete.

Trks MN C and MN M critical or major

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**MN C**	.	.
							C		

Indication

At the MTC level of the MAP display, MN C or MN M appears under the Trks header of the alarm banner. The MN C or MN M indicates a trunk group critical or major alarm. The alarm changes at 30 s intervals with out-of-service alarms, like a GM.

Meaning

An MN C alarm indicates that the Focused Trunks Maintenance system detected a critical number of failed call attempts. The attempts occurred through a trunk group.

An MN M alarm indicates that the Focused Trunks Maintenance system detected a major number of failed call attempts. The attempts occurred through a trunk group.

Arrival at the critical alarm threshold set in table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in table TRKMTCE raises a major alarm.

Result

The result of a MN C or MN M alarm depends on the following:

- the type and the size of the trunk group
- the amount of traffic at the time
- the critical or major threshold for failed call attempts by way of a trunk group set in table TRKMTCE

Common procedures

There are no common procedures.

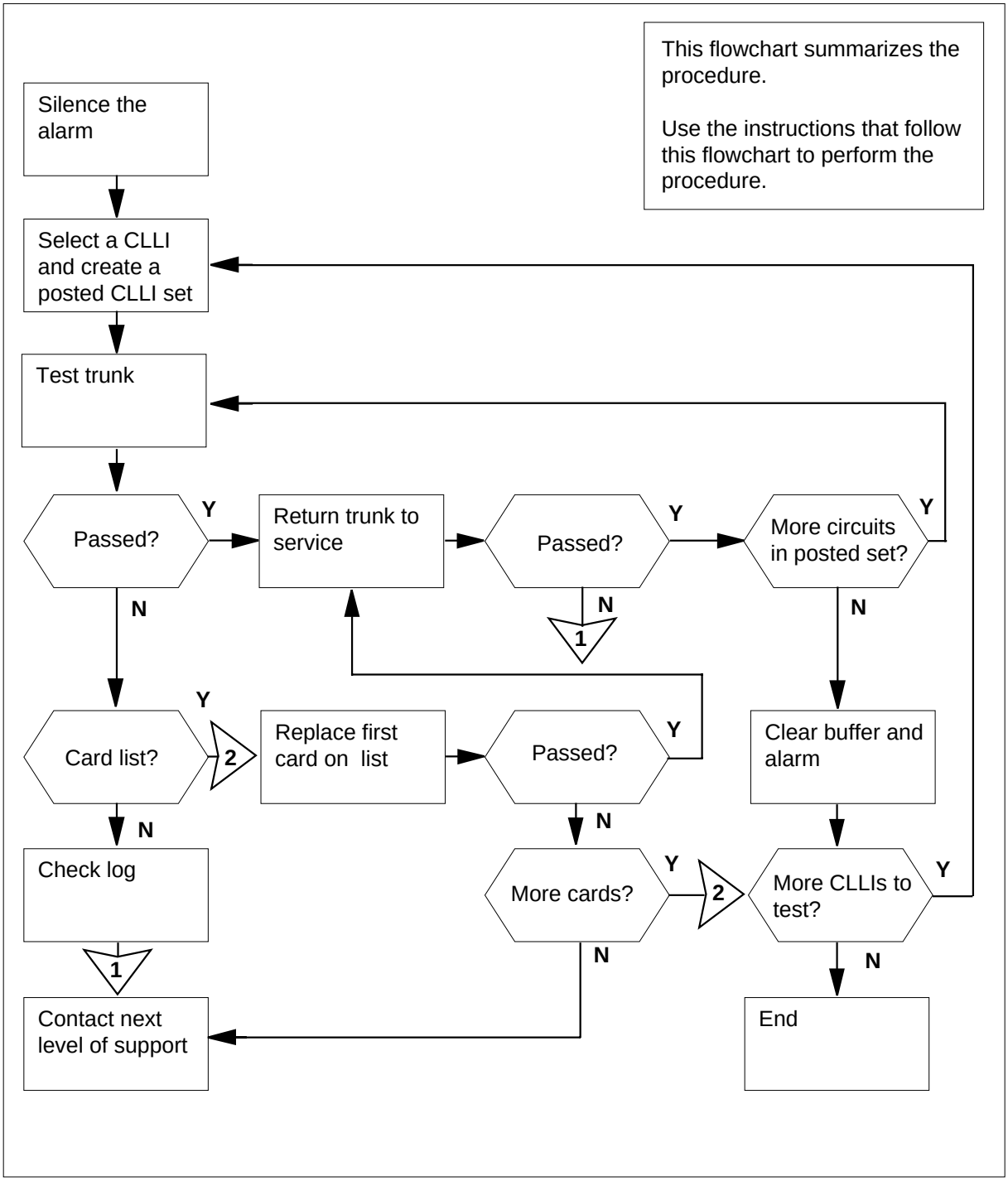
Trks MN C and MN M critical or major (continued)

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Trks MN C and MN M critical or major (continued)

Summary of clearing a Trks MN C and MN M critical or major alarm



Trks MN C and MN M critical or major (continued)

Clearing a Trks MN C and MN M critical or major alarm

At the MAP terminal

1 To access the TRKSTRBL level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;TRKSTRBL;SIL

and press the Enter key.

Example of a MAP display:

```
          MN    MJ    CR            CLLI:                BT:
M          0     0     0
CP         0     0     0

E#   ID  COUNT  LAST TROUBLE TIME   . TROUBLE DESCRIPTION
 0
 1
 2
 3
 4
 5
 6
 7
 8
 9
```

2 To record the common language location identifiers (CLLIs) of all the trunk groups in the maintenance buffer with critical alarms, type

>LISTALM alarm_type CR

and press the Enter key.

where

alarm_type
is CP if the alarm is critical, or M if the alarm is major

Example of a MAP display:

```
OTRAFLD MN
```

3 Select a trunk group on which to work.

4 Record the CLLI of the trunk group that you selected. In the MAP display example in step 2, OTRAFLD is an example of a CLLI.

5 To display the contents of the maintenance buffer for the selected trunk group, type

>DISP clli alarm_type

Trks MN C and MN M critical or major (continued)

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected. An example of a CLLI is OTRAFLD.

alarm_type
is CP if the alarm is critical, or M if the alarm is major

Example of a MAP display:

```
   MN   MJ  CR  CLLI:OTRAFLD    BT:CP
M  0    0    0
CP 1    3   10

E# ID   COUNT   LAST TROUBLE TIME..TROUBLE DESCRIPTION..
0  34    109     92/05/19   11:08:11        64.Lockout on
1  36    109     92/05/19   11:08:11        64.Lockout on
2
```

6 To create a posted set for maintenance action, type

>CREATSET clli CP format

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected

format
is the way trunks in the posted set appear (HC, MR, HC ALL, MR ALL)

7 Record all trunk groups that appear in the posted set.

8 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

```
POST        DELQ        BUSYQ        DIG
 TTP  6-030
 CKT TYPE   PM NO.    COM LANG     STA S R  DOT TE  RESULT


 TTP ID IS:  6-030
 12 NEXT      NO CKT,SET IS EMPTY
```

Trks MN C and MN M critical or major (continued)

9 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name
is the name of the circuit to post. The name appears in the MAP display in step 2. An example of a circuit is OTRAFLD.

Example of a MAP display:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: XIDD3
OK,CKT POSTED
```

10 To manually busy the trunk in the control position, type

>BSY

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

11 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
   CKT   OTRAFLD   1
   DIAGNOSTIC RESULT CONNECTION FAILURE
   ACTION REQUIRED TRY AGAIN
   CARD TYPE
   ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 16
failed, and the system generated a card list	step 13
failed, and the system did not generate a card list	step 12

Trks MN C and MN M critical or major (continued)

If the TST command	Do
failed, connection failure, refer to TRK107 log	step 11

12 The system generated a trunk101 log. Record the information in the log. Go to step 28.

13 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.

14 To replace the first card on the list, perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

15 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
    CKT   OTRAFLD   1
```

If the TST command	Do
passed	step 16
failed, and you did not replace all the cards on the list recorded in step 13	step 14
failed, and you replaced all the cards on the list recorded in step 13	step 28

16 To return the trunk group to service, type

>RTS

and press the Enter key.

Example of a MAP response:

```
FAILED TO DO
```

If the RTS command	Do
passed	step 17
failed	step 28

Trks MN C and MN M critical or major (continued)

17 To determine if more trunks in the posted trunk group that continue to have an alarm are present, type

>NEXT

and press the Enter key.

If more trunks that continue to have an alarm	Do
are present	step 10
are not present	step 18

18 Check the list that you recorded in step 7. Determine if more trunk groups with alarms are present.

If more trunk groups with alarms	Do
are present	step 19
are not present	step 21

19 To go to the next trunk group, type

>STAT

and press the Enter key.

20 Go to step 9.

21 To access the TRKSTRBL level of the MAP display, type

>TRKSTRBL

and press the Enter key.

22 Clear a trunk group from the maintenance buffer. This trunk group returned to service earlier. To clear this trunk group, type

>CLRBUF clli alarm_type

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected in step 3.

An example of a CLLI is OTRAFLD.

alarm_type
is CP if the alarm is critical, or M if the alarm is major

Example of a MAP response:

```
Will clear entire CP upper buffer for OTRAFLD.
Please confirm (“YES” or “NO”):
```

Trks MN C and MN M critical or major (end)

23 To confirm the command, type

>YES

and press the Enter key.

24 To clear the alarm, type

>CLRALM clli alarm_type

and press the Enter key.

where

clli
is the CLLI of the trunk group that you selected

alarm_type
is CP if the alarm is critical, or M if the alarm is major

Example of a MAP response:

```
Will clear CP alarm, reset attempt and failure counters.
Please confirm (“YES” or “NO”):
```

25 To confirm the command, type

>YES

and press the Enter key.

Example of a MAP response:

```
CP alarm cleared, attempt and failure counters reset.
```

26 Determine if the alarm cleared.

Note: The status of the alarm is in the MAP response, like step 25.

If the alarm	Do
cleared	step 29
did not clear	step 27

27 Check the list recorded in step 2. Determine if you must test more trunk groups to test are present.

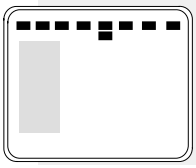
If more trunk groups to test	Do
are present	step 3
are not present	step 28

28 For additional help, contact the next level of support.

29 The procedure is complete.

Trks SB
critical, major, or minor

Alarm display



CM	MS	IOD	Net	PM	CCS	Lns	**Trks**	Ext	APPL
.	.	.	.	.	.	.	**3SB**	.	.

Indication

At the MTC level of the MAP display, SB (preceded by a number) appears under the Trks header of the alarm banner. The SB indicates a system busy (SB) alarm.

Meaning

A minimum of one trunk group has a system busy trunk. The system removed these trunks from service.

The number that precedes SB indicates the number of system busy trunks.

- For a critical alarm, a *C* appears under the alarm indicator.
- For a major alarm, an M appears under the alarm indicator.
- For a minor alarm, a letter does not appear under the alarm indicator.

Arrival at the critical alarm threshold set in table TRKMTCE raises a critical alarm. Arrival at the major alarm threshold set in table TRKMTCE raises a major alarm. Arrival at the minor alarm threshold set in table TRKMTCE raises a minor alarm.

Result

The result of an SB alarm depends on the following:

- the type and the size of the trunk group(s)
- the amount of traffic at the time
- the correct critical, major, or minor alarm threshold set in table TRKMTCE for the affected trunk groups

Common procedures

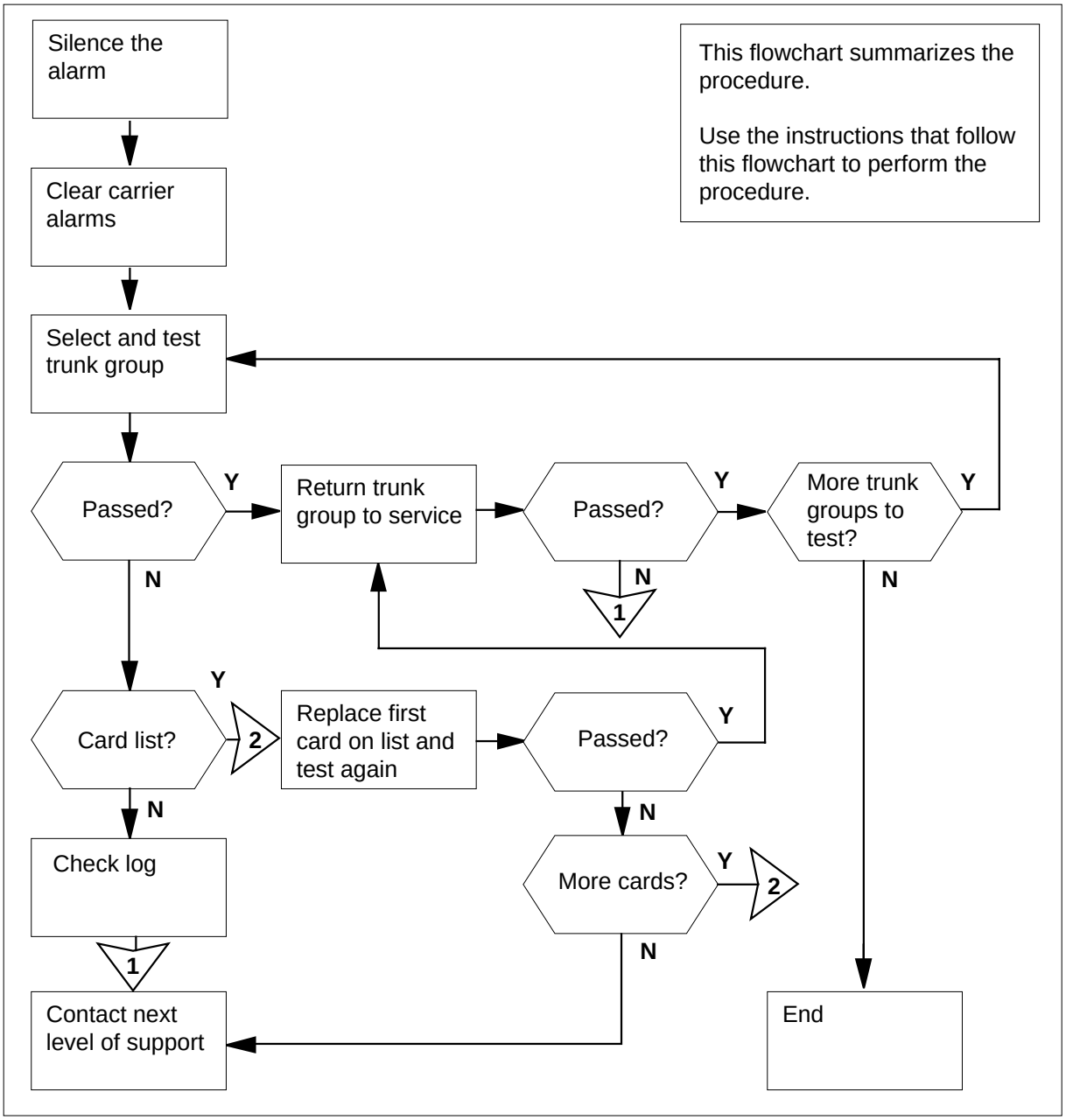
There are no common procedures.

Trks SB
critical, major, or minor (continued)

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Summary of clearing a Trks SB critical, major, or minor alarm



Trks SB
critical, major, or minor (continued)

Clearing a Trks SB critical, major, or minor alarm

At the MAP terminal

1 Perform the procedure *Clearing a C. alarm* in this document. Complete the procedure and return to this point.

2 To access the STAT level of the MAP display and silence the alarm, type

>MAPCI;MTC;TRKS;STAT;SIL

and press the Enter key.

Example of a MAP display:

```
TWOWY         ITG          OTG         MISC
 36GC         49GC         62GC         19GC

ITEM  TYPE   A      COMLANG      TOT    SB   MB   EX
%OS
TRKS:
STAT:
```

3 To display details of all trunk groups with the alarm, type

>DISPGRP ALL SB

and press the Enter key.

Example of a MAP display:

```
ITEM    TYPE    A   COMLANG TOT SB  MB      EX  %OS
0  MISC SB  DMODEMC 8   8   0   0   100
1  IC   SB  RSCITDP1    1   0   1   0       100
2  OG   SB  PDXP_RSC    1   0   1   0       100
```

4 Record the trunk groups displayed in step 3.

5 To select a trunk group on which to work, type

>ITEM item _no

and press the Enter key.

where

item_no
is the item number of the trunk group on which you want to work.

The item number appears in the far left column of the MAP display in step 3.

6 To display details of trunk circuits in the trunk group, type

>DISALM SB

Trks SB
critical, major, or minor (continued)

and press the Enter key.

7 To access the TTP level of the MAP display, type

>TTP

and press the Enter key.

Example of a MAP display:

```
POST        DELQ        BUSYQ        DIG
 TTP  6-030
 CKT TYPE    PM NO.    COM LANG    STA S R  DOT TE  RESULT


 TTP ID IS:  6-030
 12 NEXT      NO CKT,SET IS EMPTY
```

8 To post the trunk group, type

>POST G trunk_name

and press the Enter key.

where

trunk_name
is the name of the circuit you want to post. The circuit appears in the MAP display in step 6. An example of a circuit is RSCITDP1.

Example of a MAP display:

```
LAST CKTN=24
POSTED CKT IDLED
SHORT CLLI IS: RSCIT
OK,CKT POSTED
```

9 To manually busy the first trunk in the posted trunk group, type

>BSY

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

10 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

Trks SB
critical, major, or minor (continued)

```
TEST FL
MLNR35AT***+TRK107 MAY 19 11:10:11 6800 FAIL
   CKT   RSCITDP1   1
   DIAGNOSTIC RESULT CONNECTION FAILURE
   ACTION REQUIRED TRY AGAIN
   CARD TYPE
   ERROR DETAILS:  NO MORE DETAILS
```

If the TST command	Do
passed	step 15
failed, and the system generated a card list	step 12
failed, and the system did not generate a card list	step 11
failed, connection failure, refer to TRK107 log	step 10

11 The system generated a trunk 101 log. Record the information in the log. Go to step 20.

12 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of all the cards on the list.

13 To replace the first card on the list,perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

14 To test the trunk, type

>TST

and press the Enter key.

Example of a MAP response:

```
TEST OK
MLNR35AT***+TRK107 MAY 19 11:10:11 2400 PASS
    CKT   RSCITDP1   1
```

If the TST command	Do
passed	step 15
failed, and more cards remain on the list	step 13
failed, and more cards do not remain on the list	step 20

Trks SB
critical, major, or minor (end)

15 To return the trunk group to service, type

>RTS

and press the Enter key.

Example of a MAP response:

```
STATE CHANGED
```

If the RTS command	Do
passed	step 16
failed	step 20

16 To determine if more trunks in the posted trunk group that continue to have an alarm are present, type

>NEXT

and press the Enter key.

If more trunks that continue to have an alarm	Do
are present	step 9
are not present	step 17

17 Check the list that you recorded in step 4. Determine if more trunk groups with alarms are present.

If more trunk groups with alarms	Do
are present	step 18
are not present	step 21

18 To select the next trunk group, type

>STAT

and press the Enter key.

19 Go to step 3.

20 For additional help, contact the next level of support.

21 The procedure is complete.

3 XAC alarm clearing procedures

Introduction

This chapter provides alarm clearing procedures for the XAC. XAC module alarms appear under the XAC header of the alarm banner in the MAP display. All procedures contain the following sections:

- Alarm display
- Indication
- Meaning
- Result
- Common procedures
- Action

Alarm display

This section indicates how the alarm appears at the MAP terminal.

Indication

This section indicates the location of the alarm indication, the design of the alarm, the affected subsystem, and the alarm severity.

Meaning

This section indicates the cause of the alarm.

Result

This section describes the results of the alarm condition.

Common procedures

This section lists common procedures that you follow during the alarm clearing procedure. A common procedure is a series of steps that repeats in maintenance procedures. The removal and replacement of a card are examples of a common procedure. The common procedures are in the common procedures chapter in this NTP.

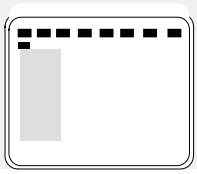
Do not use common procedures unless the stepaction procedure directs you.

Action

This section provides a summary flowchart of the alarm clearing procedure. A detailed step-action procedure follows the flowchart.

FWsoak
minor

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
FWsoak	**.**	**.**	**.**	**.**	**.**	**.**	**.**	**.**	

Indication

The FWsoak alarm appears in the alarm banner of all MTC map levels under the XAC header. The command ALARM FWSOAK lists the field replaceable units (FRU) currently soaking firmware. The system raises the FWsoak alarm when the FRU is returned to service after loading new firmware. The system does not raise the alarm if the soak time for an FRU is set to zero in table XAFWLOAD.

Meaning

The FWsoak alarm indicates the firmware is being soaked on at least one FRU. The alarm clears when the soaking time expires. This alarm requires no action.

Impact

There is no impact.

Common procedures

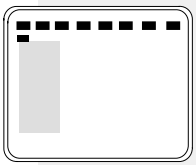
This procedure does not refer to any common procedures.

Action

No action is required. The system automatically clears the alarm when the soak time expires.

FWvers
major

Alarm display



XAC	MS	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL
FWvers M	.	.	.	.	.	.	.	.	

Indication

The FWvers alarm appears in the alarm banner of all MTC MAP levels under the XAC header. The FWvers alarm indicates there is a firmware mismatch. The FWvers alarm severity is major.

Meaning

When the system or operating company personnel issues the query card command, the system checks for a firmware mismatch. The system raises the FWvers alarm when the firmware version of the field replaceable unit (FRU) and the firmware version recorded in table XAFWLOAD do not match.

Impact

When the system raises this alarm, it generates log XAC330. When the system clears the alarm, it generates log XAC630. Use the information in these logs when performing this procedure.

Common procedures

This procedure does not refer to any common procedures.

Next level of maintenance

Repeat this procedure if it is not successful when you first perform the procedure.

A problem can occur that requires the help of the local maintenance personnel. Gather all important logs, reports, and system information (that is, product type and current software load) for analysis. The related logs, maintenance notes, and system information help make sure that the next level of maintenance and support can find the problem. More detail about logs appears in the *Log Report Reference Manual*.

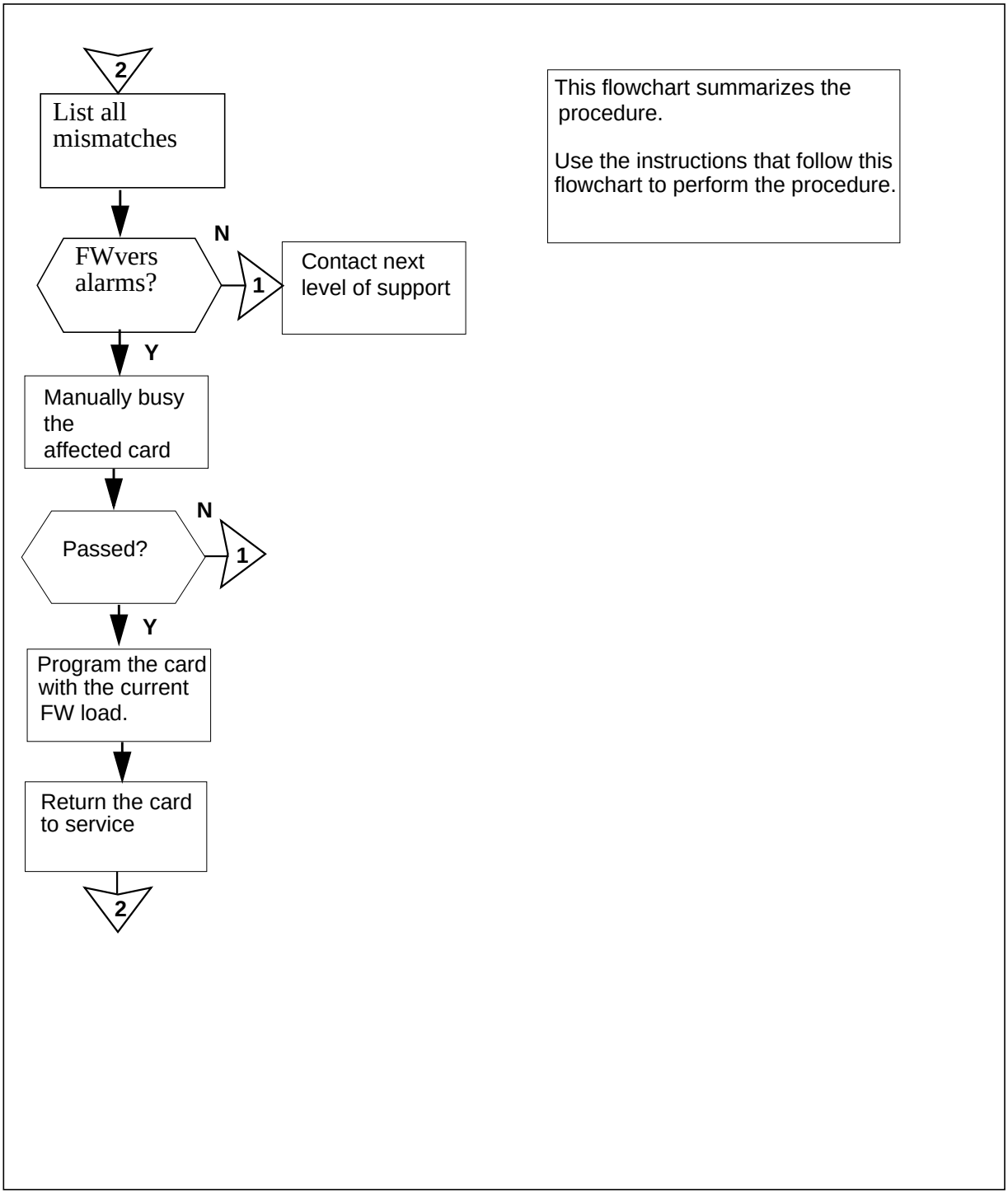
FWvers
major (continued)

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to clear the alarm.

FWvers
major (continued)

Summary of clearing alarm FWvers alarm



FWvers
major (continued)

Clearing alarm FWvers major

At your current location

1 To query FWvers alarms and list all mismatches, type

>ALARM FWVERS

and press the Enter key.

Example of map response

```
Cause                FRU/device   State    Slot Side   Packlet
FW version mismatch   PE           InSv      4    front
FW version mismatch   IOP          InSv      2    front
FW version mismatch   IOP          InSv     17    front
FW version mismatch   CMIC         InSv      4    rear   lower
```

If	Do
any FWvers alarms are listed	step 2
there are no FWvers alarms	step 12

2 To access the table XAFWLOAD, type

>TABLE XAFWLOAD

and press the Enter key.

Example of map response
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: XAFWLOAD

3 To review the tuples in the table, type

>LIST ALL

and press the Enter key.

Example of map response

```
INDEX FRU PEC VERSION VOLUME FILE STATUS SOAK
-----------------------------------------------
1 PE   NTLX02AA XAPE01AC F02LFWLOADS PEFW413 old     48
2 PE   NTLX02AA XAPE01AG F02LFWLOADS PEFW421 current 48
3 PE   NTLX02AA XAPE01BA F02LFWLOADS PEFW424 old     48
4 IOP  NTLX03AA XAIO01AA F02LFWLOADS ISEFW41 old     0
5 IOP  NTLX03AA XAIO01AC F02LFWLOADS ISEFW44 current 0
6 CMIC NTLX05AA PK10CU10 F02LFWLOADS 0C3FW75 current 72

BOTTOM
```

4 To query the card with an associated FWvers alarm, type

>QUERY CARD slot

and press the Enter key.

FWvers
major (continued)

where

slot
is the slot position of the card (for example, 4 Front)

Example of map response

```
query card 4 f
Command Submitted.
Query 4 front completed
PEC          : NTLX02AA
Serial No.   : 00000000000000
Firmware Ver: XAPE01AG
```

Record the information.

5 To access the appropriate MAP level to program the FLASH with the current firmware version and clear the alarm, type

>MAPCI;MTC;XAC;map level

and press the Enter key.

where

map level
is the name of the map level (for example, PE, IOP or CMIC)

Example of map response

```
XAC     MS    IOD                 APPL
 FWvers .     .
    M
```

6 To manually busy the card, type

>BSY slot FORCE

or

>BSY slot

Note: If this command reduces redundancy, you must use the Force option.

and press the Enter key.

where

slot
is the slot position of the card (for example, 4 Front)

Example of map response

```
Warning: Bsy command will take it out of service.
Proceed (Y or N)?
Please confirm ("YES", "Y", "NO", or "N"):
```

7 To confirm the action, type

>Y

FWvers
major (continued)

and press the Enter key.

If	Do
the response is Command Submitted. Bsy 4 front completed	step 8
the response is Command Submitted. Bsy 4 front failed	step 11

8 To program the card with the current FW load, type

>LOADFW slot FILE CURRENT

and press the Enter key.

where

slot
is the slot position of the card (for example, 4 Front)

If	Do
the response is Command Submitted. LoadFW 4 front completed	step 9
the response is Command Submitted. LoadFW 4 front failed Volume nonexistent.	step 11

9 To return the card to service, type

>RTS slot

and press the Enter key.

where

slot
is the slot position of the card (for example, 4 Front)

If	Do
the response is Command Submitted. RTS 4 front passed	step 10
the response is Command Submitted. RTS 4 front failed	step 11

10 To query all FWvers alarms and list all mismatches, type

>ALARM FWVERS

FWvers
major (end)

and press the Enter key.

Example of map response

```
Cause                FRU/device   State    Slot  Side   Packlet
FW version mismatch  IOP          InSv      2    front
FW version mismatch  IOP          InSv     17    front
FW version mismatch  CMIC         InSv      4    rear   lower
```

If	Do
any FWvers alarms are listed	step 2
there are no FWvers alarms	step 12

11 Contact your next level of support.

12 The procedure is complete.

4 Alarm clearing common procedures

Introduction to alarm clearing common procedures

This chapter provides alarm clearing common procedures. A common procedure is a series of steps that repeats in maintenance procedures. An example of a common procedure is the removal and replacement of a card. All common procedures contain the following sections:

- Application
- Action

Application

This section describes the purpose of the common procedure.

Action

This procedure provides a summary flowchart of the alarm clearing common procedure. A detailed step-action procedure follows the flowchart.

Note: Do not go to the common procedure unless the step-action procedure directs you to go.

Accessing SPM alarms DMS-Spectrum Peripheral Module

The DMS-Spectrum Peripheral Module (SPM) includes visual indicators on the frame, on each shelf, and on each module. The visual indicators consist of three colors of light emitting diodes (LED). Visual alarm indications are described in the *DMS-Spectrum Peripheral Module Hardware Maintenance Reference Manual* (297-1771-550).

Causes of SPM alarms

There are three different causes of SPM alarms; these alarms are reported by various devices. These devices can be part of the SPM or part of the DMS alarm reporting system.

SPM alarms can be caused by

- device failures - Physical devices generate alarms when a detectable failure occurs. SYSBNA is an example of this type of alarm.
- network events - Various sources generate network-event alarms when monitored events occur on the network. AIS and LOS are examples of this type of alarm.
- threshold crossings - Alarms generate when monitored parameters or metered parameters exceed their datafilled settings. SPM devices or network events, or both, can cause these alarms. COTLOW and VCXO70 are examples of these types of alarms.

SPM alarms can be reported by

- an SPM network node

  An SPM node consists of all the modules on shelves 0 and 1, which connect to the OC3 network through the OC3 modules in slot 9 and slot 10 on shelf 0.
- individual SPM modules

  The following SPM modules can generate alarms:

  — common equipment module (CEM)

  — OC3 interface module (OC3)

  — digital signal processor (DSP)

  — voice signal processor (VSP)

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

  - — asynchronous transfer mode (ATM)
  - — data link controller (DLC)
- the DMS computing module (CM), which reports alarms for
  - — input/output devices (IOD)
  - — common channel signaling (CCS)
  - — trunks (TKRS)
  - — carriers (CARR)

SONET carriers

SONET carriers can generate alarms at the following DMS computing CM alarm reporting levels:

- trunks (Trks)
- input/output devices (IOD)
- common channel signaling (CSS)

Threshold-crossing alarms

The SPM CEM and the DMS CM can generate threshold-crossing alarms. Threshold-crossing alarms are one of the following types:

- steady state faults
- performance parameters
- metered performance parameters

High-threshold and low-threshold values for the various alarms can be datafilled in DMS data schema tables. Alarms generate when the high-value threshold is crossed and they clear when the low-value threshold is crossed. See the alarm descriptions for the appropriate DS table references.

Steady state faults

Steady state faults, or soaked defects, occur when a performance parameter crosses an upper threshold and remains above the lower threshold value for an extended period. AIS and RFI are examples of steady-state fault alarms.

Performance parameters

Performance parameters are counts of intermittent defects. Alarms generate when counts exceed threshold values. Performance parameters are collected over 15-minute periods and one-day periods. Performance parameter counts are reset when collection periods end. CV and ES are examples of performance parameter alarms.

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

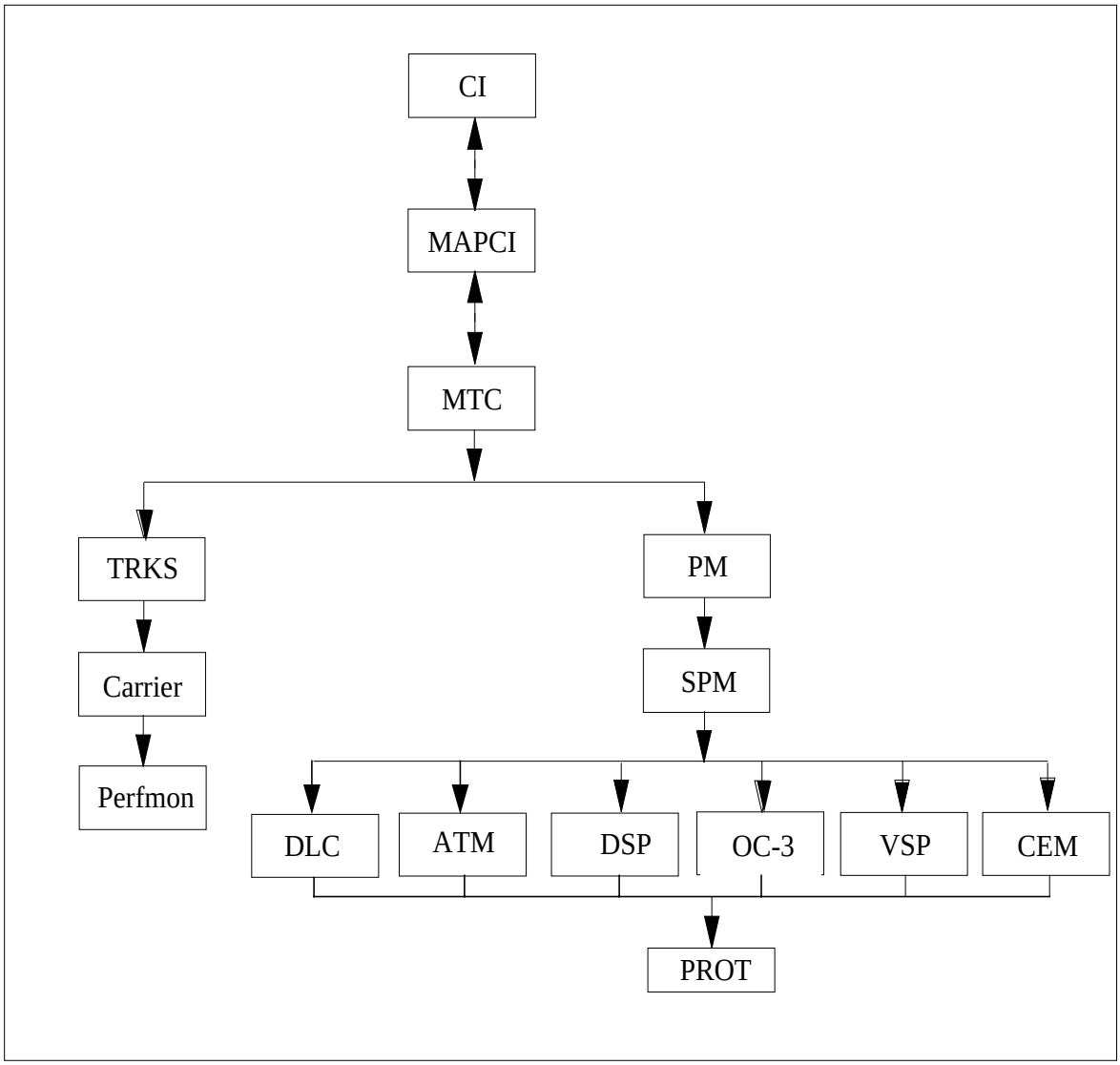
Metered performance parameters

Metered performance parameters are physical measurements. Alarms generate when a measured value exceeds its benchmark setting by the datafilled percentage. Benchmark settings can be reset. LBR and OPT are examples of metered performance parameter alarms.

MAPCI levels for SPM

The following diagram shows the levels of the MAP screen that display information about the SPM.

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)



Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

SPM alarms

The following table lists the alarms for the SPM and indicates the resource or control parameter generating the alarm.

(Sheet 1 of 2)

Alarm name	SPM node	CEM	OC3	DSP	VSP	DLC	DMST RKS	CARR METER	CARR PERF
Alarms appearing under the CCS banner									
LBC								X	
OPT								X	
OPR								X	
Alarms appearing under the IOD banner									
CSS									X
CV									X
CVFE									X
ES									X
ESFE									X
SEFS									X
SES									X
SESFE									X
UAS									X
UASFE									X
Alarms appearing under the PM banner									
CLKOOS		X							
COTLOW	X								
DTMFLOW	X								
ECANLOW	X								
HLDOVR		X							

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

(Sheet 2 of 2)

Alarm name	SPM node	CEM	OC3	DSP	VSP	DLC	DMST RKS	CARR METER	CARR PERF
HLDOVR24		X							
MANB	X	X	X	X	X	X			
MANBNA	X	X	X	X	X				
MFLOW	X								
ISTB	X	X				X			
NOSPARE			X	X	X				
PROTFAIL			X	X	X	X			
SYSB	X	X	X	X	X	X			
SYSBNA	X	X	X	X	X				
TONESLOW	X								
VCXO70		X							
VCXO90		X							
Alarms appearing under the TRKS banner									
AIS							X		
BERSD							X		
BERSF							X		
LOF							X		
LOP							X		
LOS							X		
RAI							X		
RFI							X		

The following sections describe the common steps required to access alarms at the unit, module, and protection levels of the SPM. The section also includes typical screen views for each level. The SPM, OC3, and PROT levels of the

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

MAP screen are the examples used. The commands and screen views for the other MAP levels are similar.

Accessing the SPM screen

Follow the steps in this section to access the SPM unit -level screen and list the alarms on a SPM unit.

Note: The screen views are examples. The values that appear in the actual screens you view may be not be the same.

Accessing the SPM screen

At the MAP terminal:

1 Access the PM screen level of the MAP display by typing

`>MAPCI;MTC;PM`

and pressing the Enter key.

2 Access the SPM screen by typing

`>POST SPM spm_no`

and pressing the Enter key.

where

spm_no is the number of an SPM (0 to 63)

The following screen view is an example of a PM screen containing SPM information. The example includes the following information about SPM units:

- the NTLX51AA dual-shelf assembly module locations
- the shelf number (Shlf0 and Shlf1)
- the slot number (SL)
- the active state (A)
- the status (Stat)

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

```
   CM      MS     IOD     Net      PM     CCS     Lns     Trks    Ext     APPL
   .       .      .       .        .      .       .       .       .
 .

SPM                                  SysB    ManB    OffL    CBsy    ISTb    InSv
 0 Quit          PM                    0       0       0       0       0       1
 2 Post_         SPM                   0       0       0       0       0       1
 3 ListSet
 4 ListRes     SPM 11 INSV  Loc: Site HOST Floor 2 Row A  FrPos 0
 5 Trnsl
 6             Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
 7             DSP 2  1 A Insv  CEM 1  8 I Insv  VSP 2  1 A Insv  --- -  8 - ----
 8             DSP 0  2 A Insv  OC3 0  9 A Insv  --- -  2 - ----  VSP 6  9 A Insv
 9             DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
10             DSP 3  4 I Insv  --- - 11 - ----  --- -  4 - ----  --- - 11 - ----
11 Disp_       --- -  5 - ----  --- - 12 - ----  --- -  5 - ----  --- - 12 - ----
12 Next        --- -  6 - ----  VSP 4 13 A Insv  --- -  6 - ----  --- - 13 - ----
13 Select_     CEM 0  7 A Insv  VSP 5 14 A Insv  --- -  7 - ----  --- - 14 - ----
14 QueryPM
15 ListAlm
16
17
18

   14:12 >
```

3 List the alarms by typing

>LISTALM

and pressing the Enter key.

Example of the alarm section of an SPM screen:

```
ListAlm
ListAlm: SPM 11   OC3

SEVERITY    ALARM       ACTION
------------------------------
Critical    None
Major       HOLDOVER       RPT
Minor       None
No_Alarm    None
```

The alarm section of the SPM screen lists the alarms according to severity (Critical, Major, Minor, or No_Alarm), the alarm name, and action (RPT = reportable, NRPT = not reportable) for the SPM unit.

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

SPM level alarms

The following table lists the SPM-level alarms and their default values.

Alarm name	Severity	Action
SYSB	Critical (CR)	RPT
MANB	Major (MJ)	RPT
ISTB	Minor (MN)	RPT
INSVNA	Critical (CR)	RPT
ISTBNA	Critical (CR)	RPT
SYSBNA	Critical (CR)	RPT
MANBNA	Major (MJ)	RPT
COTLOW	Minor (MN)	RPT
DTMFLOW	Minor (MN)	RPT
ECANLOW	Minor (MN)	RPT
TONESLOW	Minor (MN)	RPT
MFLOW	Minor (MN)	RPT

Accessing the OC3 screen

Follow the steps in this section to access the OC3 module-level screen and to check the alarms on an SPM OC3 module.

Note: The screen views are examples. The values that appear in the actual screens you view may be not be the same.

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

Accessing the OC3 screen

At the MAP terminal:

1 From the SPM screen, access the OC3 card by typing

SELECT oc3_no

and pressing the enter key.

where

oc3_nois the number of an OC3 card (0 or 1)

The following screen view is an example of an OC3 screen. The example contains the following OC3 information:

- the number of the SPM unit containing the OC3 module (SPM 11)
- the number of the OC3 module (OC3 0)
- the active state of the OC3 module (Act INSV)
- the location of the OC3 module in the SPM unit (Row A, FrPos 0, ShPos 6, ShID 0, Slot 9)
- the protection group the OC3 has been assigned to (Prot Grp: 1)
- the name of the default OC3 software load (Default Load: OC3LOAD)
- the protection role played by the OC3 (Prot Role: Working)

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

```
   CM      MS     IOD     Net      PM     CCS     Lns     Trks    Ext     APPL
   .       .      .       .        .      .       .       .       .
```

```
OC3                          SysB    ManB    OffL    CBsy    ISTb    InSv
 0 Quit          PM            0       0       0       0       0       1
 2               SPM           0       0       0       0       0       1
 3 ListSet        OC3          0       0       0       0       0       1
 4
 5              SPM 11    OC3 0  Act  INSV
 6 Tst
 7 Bsy          Loc : Row A FrPos 0 ShPos 6 ShId 0 Slot 9  Prot Grp : 1
 8 RTS          Default Load: OC3LOAD                      Prot Role: Working
 9 OffL
10 LoadMod
11
12 Next
13 Select_
14 QueryMod
15 ListAlm
16 Prot
17
18
    14:12 >
```

2 List the alarms on an OC3 module by typing

>LISTALM

and pressing the enter key.

Example of the alarm section of the OC3 screen:

```
ListAlm
ListAlm: SPM 11   OC3

SEVERITY    ALARM       ACTION
------------------------------
Critical    None
Major       PROTFAIL       RPT
Minor       None
No_Alarm    None
```

The alarm section of the OC3 screen lists the alarms according to severity (Critical, Major, Minor, or No_Alarm), the alarm name, and action (RPT = reportable, NRPT = not reportable) for the OC3 module.

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

OC3 level alarms

The following table lists the OC3-level alarms and their default values.

Alarm name	Severity	Action
SYSB	Critical	RPT
MANB	Major	RPT
ISTB	Minor	RPT
PROTFAIL	Critical	RPT

Accessing the protection screen

Follow the steps in this section to access the protection-level screen and check the protection alarms on an SPM module.

Note: The screen views are examples. The values that appear in the actual screens you view may not be the same.

Accessing SPM alarms
DMS-Spectrum Peripheral Module (continued)

Accessing the protection screen

At the MAP terminal:

1 From any module-level screen, access the protection screen by typing

>PROT

and pressing the enter key.

The following screen view is an example of a protection screen. The example contains the following protection information about an OC3 module:

- the number of the SPM unit containing the OC3 module (SPM 11)
- the module protection group (OC3_GRP 1)
- the protection mode (non-revertive)
- the protection schema (one_plus_one)
- the shelf position of the OC3 modules (9 and 10)
- the unit number (0 and 1)
- the protection role (W and S)
- the active state of the module (A or I)
- the status of the module (InSv)

```
   CM      MS     IOD     Net      PM     CCS     Lns     Trks    Ext     APPL
   .      .    .     .     .     .    .       .   .     .


Protectn                          SysB    ManB    OffL    CBsy    ISTb    InSv
 0 Quit          PM                  0       0       0       0       0       1
 2               SPM                 0       0       0       0       0       1
 3                 OC3               0       0       0       0       0       2
 4
 5              SPM    11   InSv
 6              Prot Grp: OC3_GRP 1    Mode: Non-revertive    Schema: one_plus_one
 7 Force        Sh0 U R A Stat   Sh0 U R A Stat   Sh1 U R A Stat   Sh1 U R A Stat
 8 Manual        1 -- - - ----    8 -- - - ----    1 -- - - ----    8 -- - - ----
 9               2 -- - - ----    9  0 W A InSv    2 -- - - ----    9 -- - - ----
10               3 -- - - ----   10  1 S I InSv    3 -- - - ----   10 -- - - ----
11               4 -- - - ----   11 -- - - ----    4 -- - - ----   11 -- - - ----
12               5 -- - - ----   12 -- - - ----    5 -- - - ----   12 -- - - ----
13 Select_       6 -- - - ----   13 -- - - ----    6 -- - - ----   13 -- - - ----
14               7 -- - - ----   14 -- - - ----    7 -- - - ----   14 -- - - ----
15 ListAlm
16             PROT:
17
18

   14:12 >
```

2 List the alarms at the protection level by typing

>LISTALM

Accessing SPM alarms
DMS-Spectrum Peripheral Module (end)

and pressing the enter key.

Example of the alarm section of a PROT screen:

```
ListAlm
ListAlm: OC3_GRP 1

SEVERITY    ALARM       ACTION
------------------------------
Critical    None
Major       None
Minor       None
No_Alarm    None
```

The alarm section of the OC3 screen lists the alarms according to severity (Critical, Major, Minor, or No_Alarm), the alarm name, and action (RPT = reportable, NRPT = not reportable) for the OC3 module.

Protection level alarms

The following table lists the protection-level alarms and their default values.

Alarm name	Severity	Action
PROTFAIL	Critical	RPT
NOSPARE	Major	RPT

Activating CCS7 links

Application

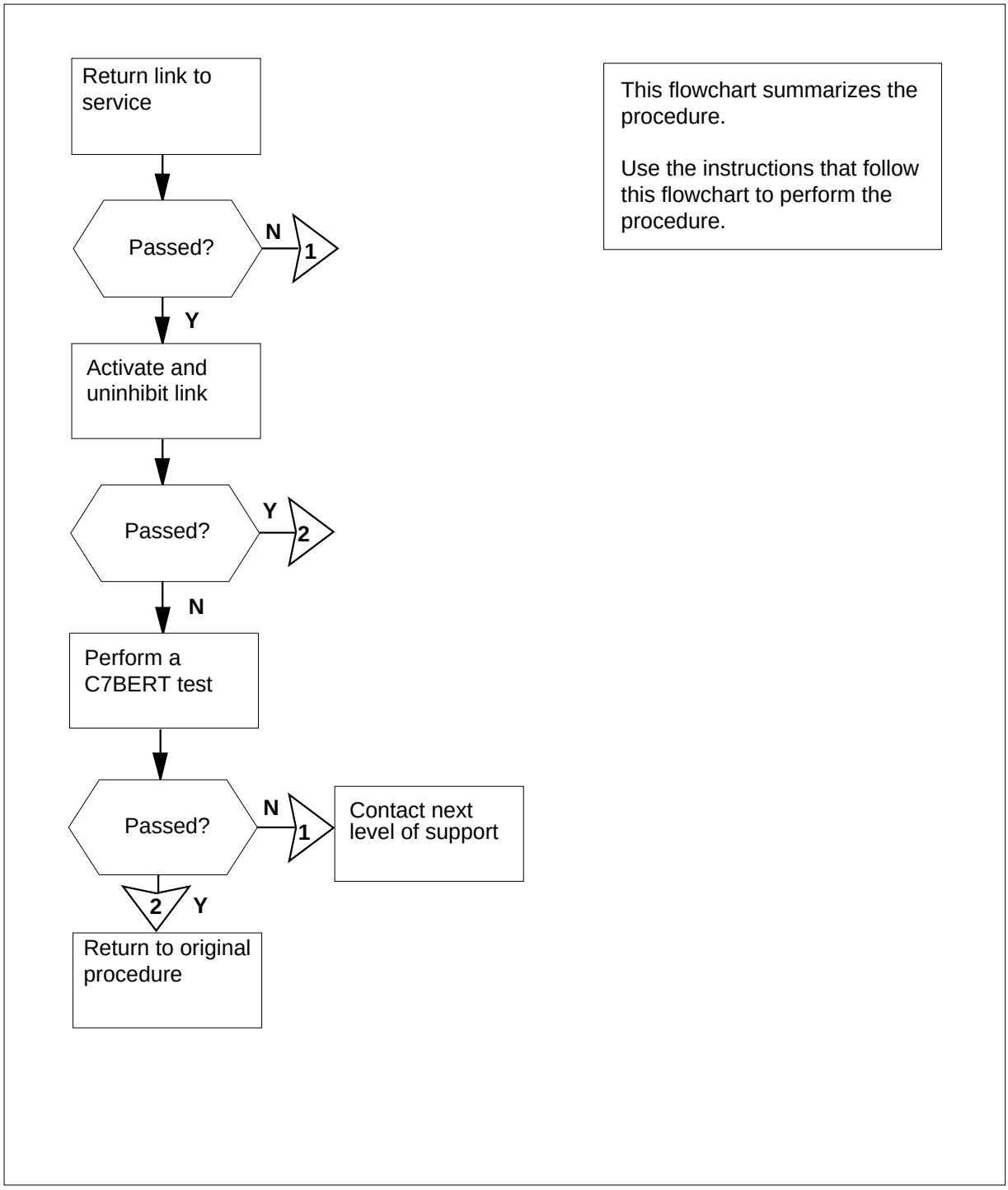
Use this procedure to activate out-of-service CCS7 links.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Activating CCS7 links (continued)

Summary of Activating CCS7 links



Activating CCS7 links (continued)

Activating CCS7 links

DANGER
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, you can cause equipment damage or loss of service.

At the MAP terminal

1 Determine the traffic state of the link.

Note: The link traffic state appears under the Traf Stat header of the MAP display.

If the link traffic state	Do
is RInh	step 2
is LInh	step 5
is ManB	step 11
is ISTb or SysB	step 13

2 Determine from office records the far-end office that connects to the posted linkset.

3 Contact the far-end office to determine why the link is inhibited from that location.

4 Wait until the far-end office restores the link. Determine the traffic state of the remote inhibited link.

Note: The link traffic state appears under the Traf Stat header of the MAP display.

Example of a MAP Display:

Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

```
Linkset   SSP100_LK        ISTb
    Traf Sync                                        Link
LK Stat   Stat Resource  Stat Physical Access     Stat Action
0   InSv  Sync LIU7 101  InSv DS0A
1   ISTb  Sync LIU7 103  InSv DS0A


Size of Posted Set = 2
```

If the traffic link state	Do
is InSv	step 31

Activating CCS7 links (continued)

If the traffic link state	Do
is LInh	step 5
is ManB	step 11
is ISTb or SysB	step 13

5 Determine from office records or from operating company personnel why the link is locally inhibited.

6 When you have permission, uninhibit the link. To uninhibit the link, type:

```
>UINH   link_noand press the Enter key.
```

where

link_no is the number of the inhibited link (0 to 15)

If the UINH command	Do
passed	step 7
fails, and this time is the first time you attempted to uninhibit the link	step 8
fails, and this time is the second time you have attempted to uninhibit the link	step 30

7 Determine the link traffic state.

Note: The link traffic state appears under the Traf Stat header of the MAP display.

If the traffic link state	Do
is InSv	step 31
is ManB	step 11
is RInh	step 2
is ISTb or SysB	step 13

8 Contact the next level of support to determine if datafill for the link changed at either end of the link.

If the datafill	Do
changed at either end of the link	step 9

Activating CCS7 links (continued)

If the datafill	Do
did not change at either end of the link	step 10

9 Consult the next level of support for instructions to correct the problem.

When you correct the problem, go to step

10 Consult the next level of support to determine why the UINH command failed.

When you have permission, go to step

11 Determine from office records or from operating company personnel why the link is manual busy.

When you have permission, continue with this procedure.

12 To return the link to service, type

>RTS link_no

and press the Enter key.

where

link_no
is the number of the manual busy link (0 to 15)

If the RTS command	Do
failed	step 30
passed, but the link traffic state is RInh	step 2
passed, but the link traffic state is LInh	step 5
passed, and the link traffic state is ISTb or SysB	step 13
passed, and the link traffic state is InSv	step 31

13 Determine the link synchronization state.

Note: The link synchronization state appears under the Sync Stat header of the MAP display.

Example of a MAP Display:

Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

Activating CCS7 links (continued)

```
Linkset   SSP100_LK        ISTb
    Traf Sync                                        Link
LK Stat   Stat Resource  Stat Physical Access     Stat Action
0  SysB DAct LIU7 101  InSv DS0A
1  ISTb Sync LIU7 103  InSv DS0A


Size of Posted Set = 2
```

If the link synchronization state	Do
is `Sync` or `Alnd`	step 22
is `DAct`	step 19
is other than listed here	step 14

14 To inhibit the link, type

`>INH  link_noand press the Enter key.`

where

link_no
is the number of the link (0 to 15) you want to synchronize

If the INH command	Do
passed	step 15
failed, and the link traffic state is `SysB`	step 15
failed, and the link traffic state is `ISTb`	step 30

15 To manually busy the link, type

`>BSY  link_no`

and press the Enter key.

where

link_no
is the number of the link (0 to 15) that you inhibited in step 14

If the response	Do
is `Link link_no:Traffic is running on that link Please confirm (“YES",“Y",“NO", or “N"):`	step 16

Activating CCS7 links (continued)

If the response	Do
is other than listed here, (includes additional messages with previous response)	step 30

16 To confirm the command, type

>YES

and press the Enter key.

17 To deactivate the link, type

>DEACT link_no

and press the Enter key.

where

link_no
is the number of the link (0 to 15) that you manually busied in step 15

18 To return the link to service, type

>RTS link_no

and press the Enter key.

where

link_no
is the number of the link (0 to 15) that you deactivated in step 17

19 To activate the link, type

>ACT link_no

and press the Enter key.

where

link_no
is the number of the link (0 to 15) that you returned to service in step 18

If the ACT command	Do
passed, and the link synchronization state is Sync or Alnd	step 22
passed, and the link synchronization state is not Sync or Alnd	step 20
failed	step 20

20 Wait eight minutes to determine if the link activates.

If the link synchronization state	Do
is Sync or Alnd	step 22

Activating CCS7 links (continued)

If the link synchronization state	Do
is other than listed here, and you did not ask the far-end office to activate the link	step 21
is other than listed here, and you asked the far-end office to activate the link	step 30

21 Contact the far-end office. Tell operating company personnel at the location that:

- you must busy, deactivate, return to service and activate the link to realign the link
- you must activate the link from both ends when you busy, deactivate and return the link to service

After you have checked the link from both ends, check the link synchronization.

If the link synchronization state	Do
is `Sync` or `Alnd`	step 22
is other than listed here	step 20

22 Determine the traffic state of the link.

Note: The link traffic state appears under the Traf Stat header on the MAP display.

Example of a MAP display:

Note: Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

```
Linkset  SSP100_LK        SYSB
   Traf Sync                                        Link
LK Stat Stat Resource  Stat Physical Access       Stat Action
0  SysB Sync LIU7 101  InSv DS0A
1  ISTb Sync LIU7 103  InSv DS0A


Size of Posted Set = 2
```

If the link traffic state	Do
is `InSv`	step 31
is `LInh`	step 29
is other than listed here	step 23

Activating CCS7 links (continued)

23 To inhibit the link, type

>INH link_no

and press the Enter key.

where

link_no
is the number of the link (0 to 15)

If the INH command	Do
passed	step 24
failed, and the link traffic state is SysB	step 24
failed, and the link traffic state is ISTb	step 30

24 To manually busy the link, type

>BSY link_no

and press the Enter key.

where

link_no
is the number of the link (0 to 15)

If the response	Do
is `Link link_no:Traffic is running on that link Please confirm ("YES","Y","NO", or "N"):`	step 25
is other than listed here, (includes additional messages with previous response)	step 30

25 To confirm the command, type

>YES

and press the Enter key.

26 To return the link to service, type

>RTS link_no

and press the Enter key.

where

Activating CCS7 links (end)

link_no
is the number of the link (0 to 15)

If the RTS command	Do
passed, and the link is LInh	step 29
passed, and the link is InSv	step 31
failed, and this is the first time you attempted the RTS command at this point	step 27
failed, and this is the second time you attempted the RTS command at this point	step 30

27 Perform the procedure *Running a C7BERT* in this document. Complete the procedure and return to this point.

Note: Perform a CCS7 bit error rate test (C7BERT) on any link in the posted linkset that fails the RTS step in step 26.

Go to step 28.

28 The results of the C7BERT determine your next action.

If the C7BERT instructed you	Do
to return the link to service	step 26
not to return the link to service	step 30

29 To uninhibit the link, type

`>UINH link_no`

and press the Enter key.

where

link_no
is the number of the link (0 to 15)

If the UINH command	Do
passed, and the link is `InSv`	step 31
passed, and the link is not `InSv`	step 30
failed	step 30

30 For additional help, contact the next level of support.

31 The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Activity switch with memory match

Application

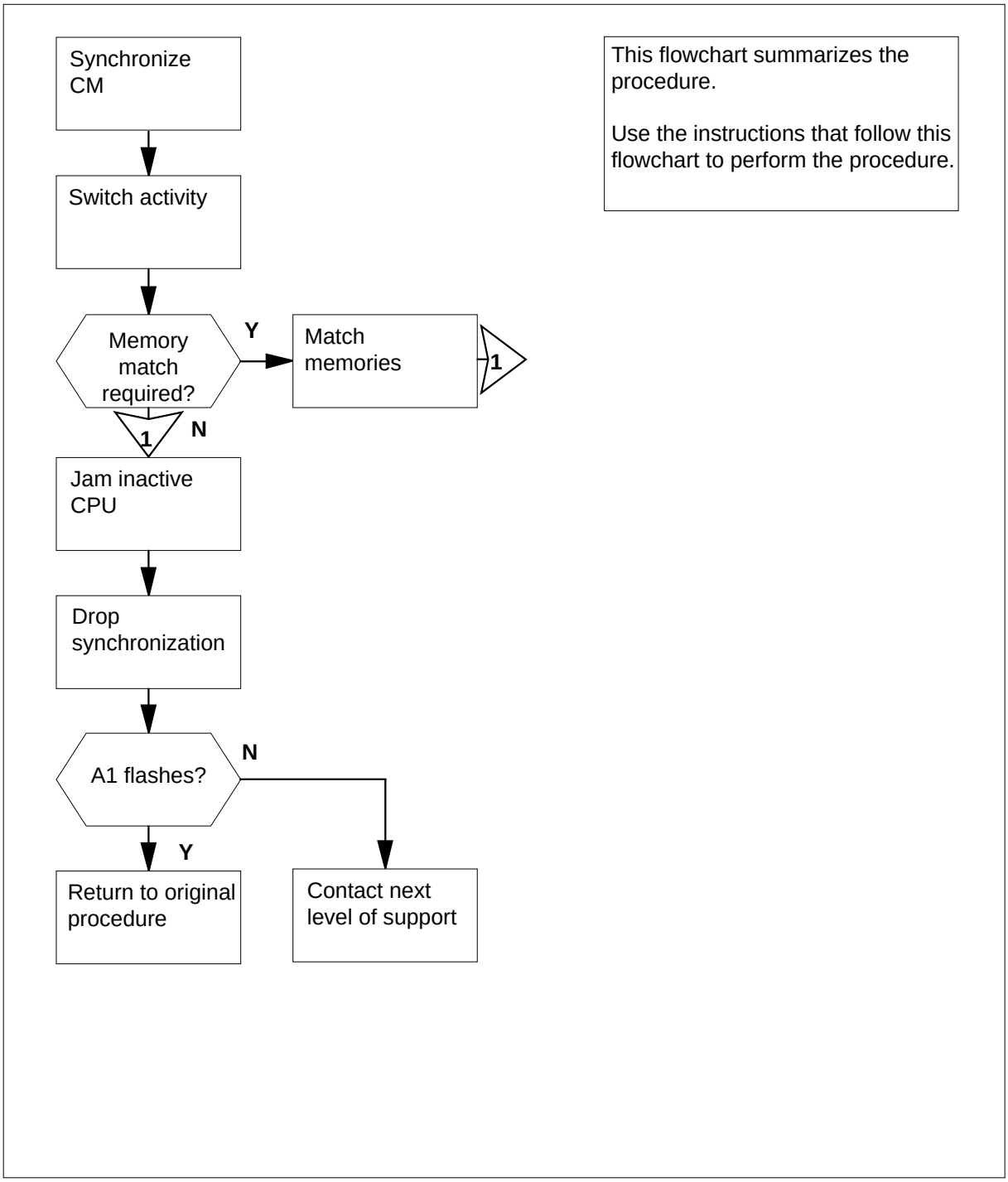
Use this procedure to switch activity between the active CPU and the inactive CPU.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Activity switch with memory match (continued)

Summary of Activity switch with memory match



Activity switch with memory match (continued)

Activity switch with memory match

At the MAP terminal

1

CAUTION
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

To make sure that you are at the CM level of the MAP display, type

>MAPCI;MTC;CM

and press the Enter key.

Example of a MAP Display:

```
CM  Sync  Act  CPU0  CPU1 Jam Memory CMMnt  MC  PMC
 0   no   cpu 1  .     .  yes    .     .     .   .
```

2 Determine if the inactive CPU jammed.

Note: The word yes under the Jam header indicates that the CPU is jammed. The area is blank if the CPU is not jammed.

If the inactive CPU	Do
is jammed	step 3
is not jammed	step 4

At the CM reset terminal for the inactive CPU

3 Before you proceed, determine from office records or from operating company personnel why the inactive CPU is jammed. To release the jam on the inactive CPU, when you have permission, type

>\RELEASE JAM

and press the Enter key.

RTIF response:

```
JAM RELEASE DONE
```

Activity switch with memory match (continued)

At the MAP Display

4 Determine if the CM is in sync.

Note: A dot (.) or EccOn under the Sync header indicates that the CM is in sync. The word no means that the CM is not in sync.

If the CM	Do
is in sync	step 6
is not in sync	step 5

5 Before you proceed, determine from office records or from operating company personnel why synchronization was dropped. When you have permission, synchronize the CM. To synchronize the CM, type

>SYNC

and press the Enter key.

If the response	Do
indicates the SYNC command was successful	step 6
indicates other than listed here	step 23

6 To switch activity, type

>SWACT

and press the Enter key.

Example of a MAP response:

```
Switch of activity will cause the CM to be running
on the inactive CPU's processor clock. System will
drop SYNC and then re–SYNC in order to switch to the
active CPU's clock. Do you wish to continue?
Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

7 To confirm the command, type

>YES

and press the Enter key.

8 Determine if the switch of activity was successful.

If the response	Do
is Maintenance action submitted. Switch of Activity successful. Drop Synchronization in progress... Running in simplex mode with active CPU n. Synchronization in progress... Synchronization successful.	step 9

Activity switch with memory match (continued)

If the response	Do
is other than listed here	step 23

9 Determine if a memory match between CPUs is necessary.

If you	Do
replace cards in the CM	step 10
clear a CM Flt alarm	step 10
clear a CM LowMem alarm	step 10
perform any other procedure	step 17

10 To access the Memory level of the MAP display, type

>MEMORY

and press the Enter key.

Example of a MAP display for DMS SuperNode:

```
CM 0
     Card  123456789
   Plane 0 .........
   Plane 1 .........
```

Example of a MAP display for DMS SuperNode SE:

```
CM 0
     Card  12345
   Plane 0 .....
   Plane 1 .....
```

11 To match the memories of the CPUs, type

>MATCH ALL

and press the Enter key.

Example of a MAP response:

```
  Matching memory between CPUs in SYNC.
  Match ok.
```

If the response	Do
Text CharFormat="Mono">is Match ok.Text>	step 12
is other than listed here	step 23

Activity switch with memory match (continued)

12 To access the CI level of the MAP display, type

>QUIT ALL

and press the Enter key.

13 To access the log utility, type

>LOGUTIL

and press the Enter key.

14 To determine if the memory match generated MM100 log report, type

>OPEN MM 100

and press the Enter key.

Note: If the memory match did not generate a report, the response is Log empty.

If the response	Do
is Log empty	step 15
is other than listed here	step 23

15 To determine if the memory match generated an MM101 log report, type

>OPEN MM 101

and press the Enter key.

If the response	Do
is Log empty	step 16
is other than listed here	step 23

16 To quit the log utility, type

>QUIT

and press the Enter key.

Activity switch with memory match (continued)

At the CM reset terminal for the inactive CPU

17

WARNING
Loss of service
Do not jam the active CPU. If you jam the active CPU while the CM is out of sync you cause a cold restart. The word Active on the top banner of the display identifies the reset terminal for the active CPU.

To jam the inactive CPU, type

>\JAM

and press the Enter key.

RTIF response:

```
PLEASE CONFIRM: (YES/NO)
```

18 To confirm the command, type

>YES

and press the Enter key.

RTIF response:

```
JAM DONE
```

At the MAP display

19 To access the CM level of the MAP display, type

>MAPCI;MTC;CM

and press the Enter key.

20 To drop synchronization, type

>DPSYNC

and press the Enter key.

If the response	Do
is About to drop sync with CPU n active. The inactive CPU is JAMMED. Do you want to continue. Please confirm ("YES", "Y", "NO", or "N"):	step 21
is other than listed here	step 23

21 To confirm the command, type

>YES

and press the Enter key.

Example of a MAP response:

```
Maintenance action submitted.
Running in simplex mode with active CPU n.
```

At the CM reset terminal for the inactive CPU

22 Wait until A1 flashes on the CM reset terminal for the inactive CPU.

Note: Allow 5 min for A1 to start to flash.

If A1	Do
flashes	step 24
does not flash	step 23

23 For additional help, contact the next level of maintenance support.

24 Return to the maintenance procedure that sent you to this procedure and continue as directed.

Allocating a volume

Application

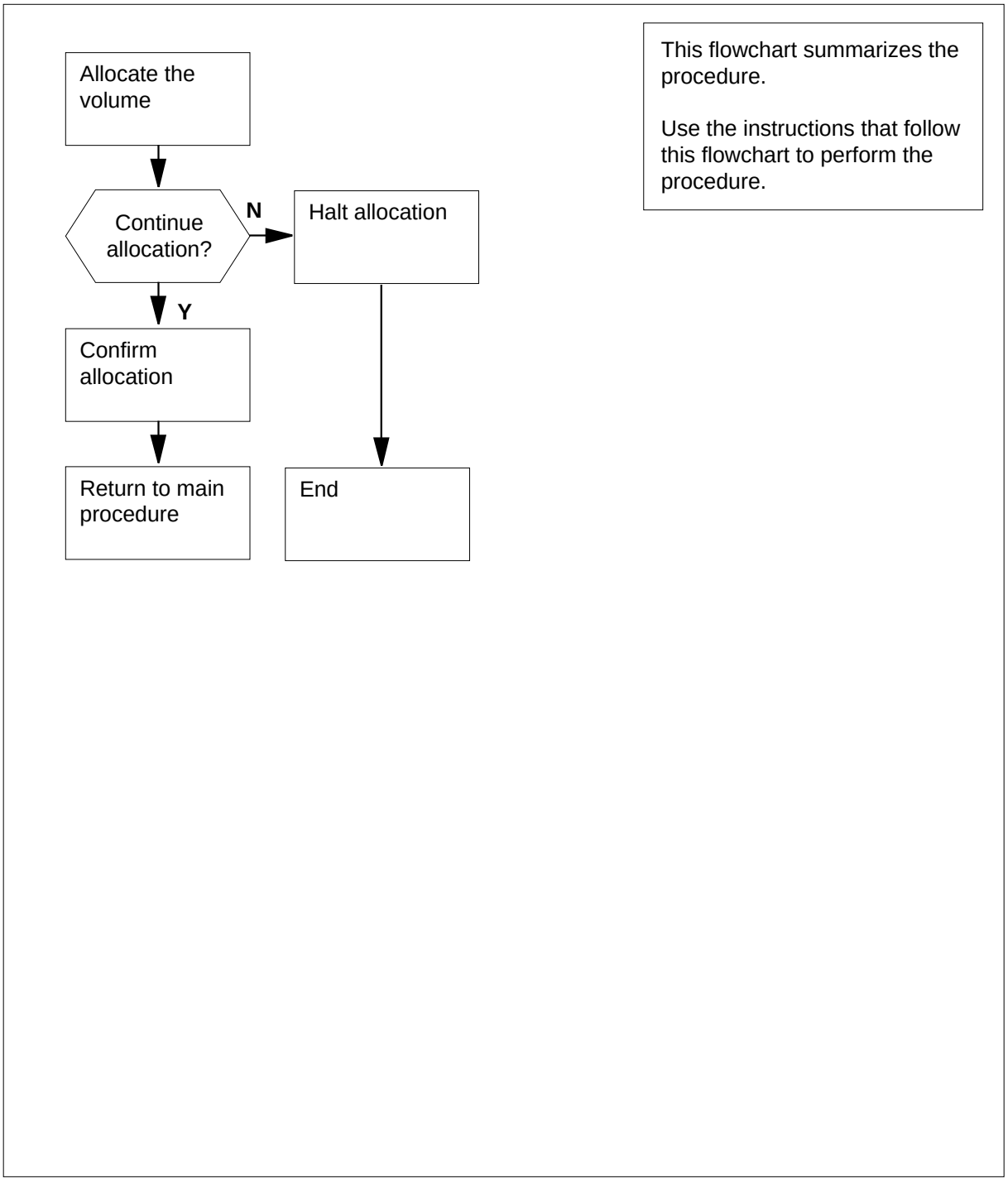
Use this procedure to allocate a volume.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Allocating a volume (continued)

Summary of Allocating a volume



Allocating a volume (continued)

Allocating a volume

At your current location

1

DANGER
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

To allocate a volume, type

>MNT ssys vol_name

and press the Enter key.

where

ssys
is the subsystem

vol_name
is the volume name

Example of a MAP display:

```
UPDATING VOLUME INFORMATION FOR vol_name:  VOLUME nn IN
REGULAR POOL n, pool_name
PLEASE CONFIRM (”YES” OR ”NO”):
```

2 Determine if you want to continue with the volume allocation.

If you	Do
want to continue	step 5
do not want to continue	step 3

3 To halt the allocation, type

>NO

and press the Enter key.

4 You decided to not complete this alarm clearing procedure. Go to the next procedure.

5 To confirm the allocation, type

>YES

and press the Enter key.

Allocating a volume (end)

Example of a MAP display:

```
REGULAR VOLUME vol_name ALLOCATED.
```

6 The common procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Checking the electronic fuse unit in an LME or RLM frame

Application

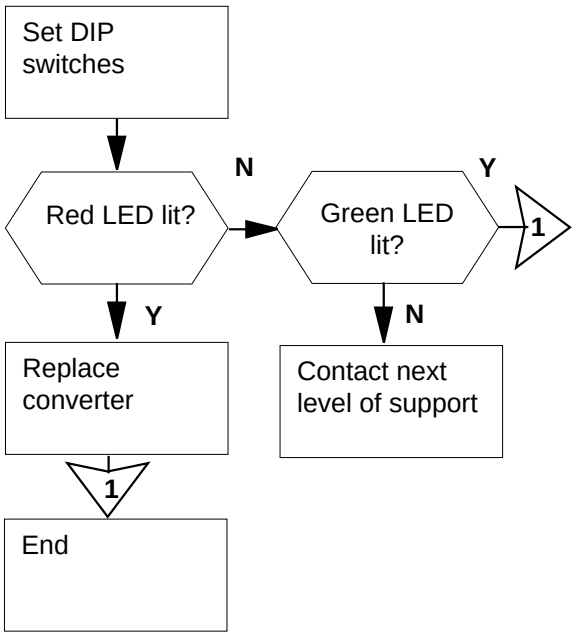
Use this procedure to clear an alarm. A electronic fuse unit (EFU) that has faults in a line module equipment (LME) or remote line module (RLM) frame causes the alarm.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Checking the electronic fuse unit in an LME or RLM frame (continued)

Summary of Checking the electronic fuse unit in an LME or RLM frame



This flowchart summarizes the procedure.

Use the instructions that follow this flowchart to perform the procedure

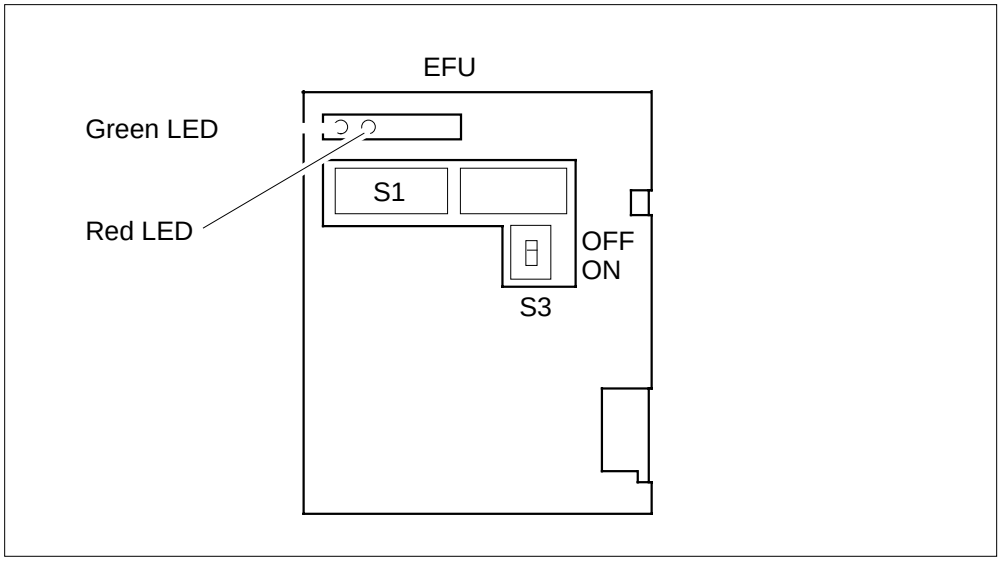
Checking the electronic fuse unit in an LME or RLM frame (continued)

Checking the electronic fuse unit in an LME or RLM frame

At the LME or RLM frame

1 Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

2 Determine the status of the LEDs on the EFU.



If	Do
both LEDs are lit	step 3
the LEDs are not lit	step 12
only the red LED is lit	step 5

3 Set DIP switch S3 to OFF.

4 Determine the status of the LEDs.

If the	Do
green LED is lit	step 13
red LED is lit	step 5

5 Determine the status of the S1 DIP switches. From the following table, determine if the switch settings are correct.

Checking the electronic fuse unit in an LME or RLM frame (continued)

Number of line drawers equipped in this LME frame	Switch number									
	LME bay 0					LME bay 1				
	1	2	3	4	5	6	7	8	9	10
1	●					●				
2		●					●			
3	●	●				●	●			
4			●					●		
5	●		●			●		●		
6		●	●				●	●		
7				●					●	
8	●			●		●			●	
9		●		●			●		●	
10					●					●
11	●				●	●				●
12		●			●		●			●
13	●	●			●	●	●			●
14			●		●			●		●
15	●		●		●	●		●		●
16		●			●		●			●
17				●	●				●	●
18	●			●	●	●			●	●
19		●		●	●		●		●	●
20	●	●		●	●	●	●		●	●

Note: A black dot in the table indicates that the DIP switch is ON.

If switches	Do
are correctly set	step 8
are not correctly set	step 6

6 Set all S1 DIP switches that were not in the correct position.

7 Determine the status of the LEDs on the EFU.

If the	Do
green LED is lit	step 13
red LED is lit	step 8

8 Set the power switch on the NT2X70 converter to OFF.

9 Remove the NT2X70 from the shelf.

Checking the electronic fuse unit in an LME or RLM frame (end)

10 Determine if bent or short-circuited pins are present on the backplane of the shelf.

If bent or short-circuited pins	Do
are present	step 12
are not present	step 11

11 Check the rear of the drawers for broken or short-circuited wires. The operating company personnel at the next level of support can request this information.

12 For additional help, contact the next level of support.

13 Return to the main procedure that sent you to this procedure. Continue as directed.

Clearing lines alarms

Application

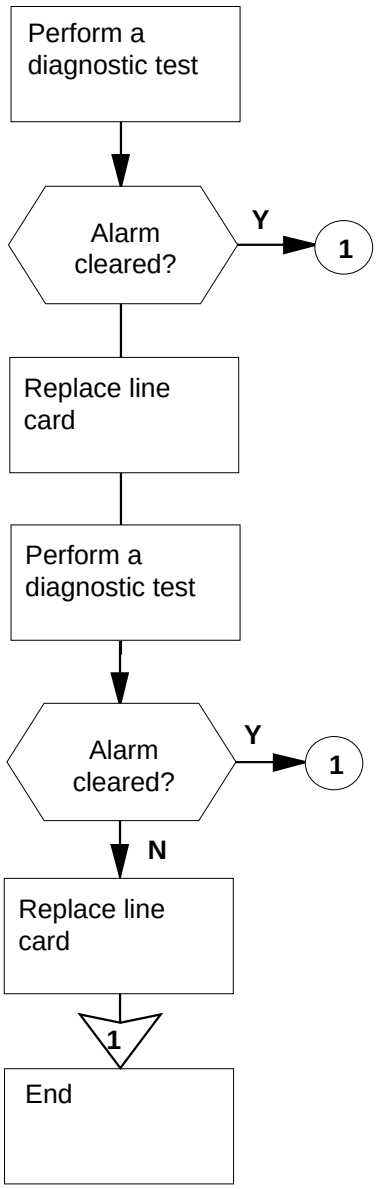
Use this procedure to clear lines alarms after you post the lines that have diagnostic failures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Clearing lines alarms (continued)

Summary of Clearing lines alarms



This flowchart summarizes the procedure.

Use the instructions that follow this flowchart to perform the procedure.

Clearing lines alarms (continued)

Clearing lines alarms

WARNING
Loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

At the MAP display

1 To perform a diagnostic test on each line, type

>DIAG

and press the Enter key.

Example of a MAP response:

```
***LINE101 FEB03 17:42:26 5500 FAIL LN_DIAG
        LEN REM1 00 0 00 06   DN 7224345
        DIAGNOSTIC RESULT No Signalling to Card 0/10
        ACTION REQUIRED Replace Card
        CARD TYPE  6X21AB
```

2 Check the log report displayed on the MAP terminal as a result of the Diag command.

If the system	Do
generated a LINE 100 log report	step 15
generated a LINE 101 log report	step 3

3 If you must replace the card, go to step 5. If you must perform any other action, go to step 4.

4 Troubleshoot the problem as required and go to step 10.

5 Note the card type of the line card from the information in the log report.

6 Go to the correct procedure in the *Card Replacement Procedures* to replace the line card. Complete the procedure and return to this point.

7 To perform a diagnostic test on the line, type

>DIAG

and press the Enter key.

8 Check the log report displayed on the MAP terminal as a result of the Diag command.

If the system	Do
generated a LINE100 log report	step 15

Clearing lines alarms (end)

If the system	Do
generated a LINE101 log report	step 9

Note: A LINE101 log report indicates that the line card does not have faults.

9 Go to the correct procedure in the *Card Replacement Procedures* to install the original card again. Complete the procedure and return to this point.

If alarms	Do
appear under other MAP headers	step 10
do not appear under other MAP headers	step 13

10 If alarms appear under the other headers at the MAP terminal, go to the correct alarm clearing procedure in this document. Complete this procedure and return to this point.

11 To perform a diagnostic test on each line, type

```
>DIAG
```

and press the Enter key.

12 Check the log report displayed on the MAP terminal as a result of the Diag command.

If the system	Do
generated a LINE100 log report	step 15
generated a LINE101 log report	step 13

13 Note the information in the “action required" section of the log report.

14 For additional help, contact the next level of support.

15 The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Clearing PM C-side faults

Application

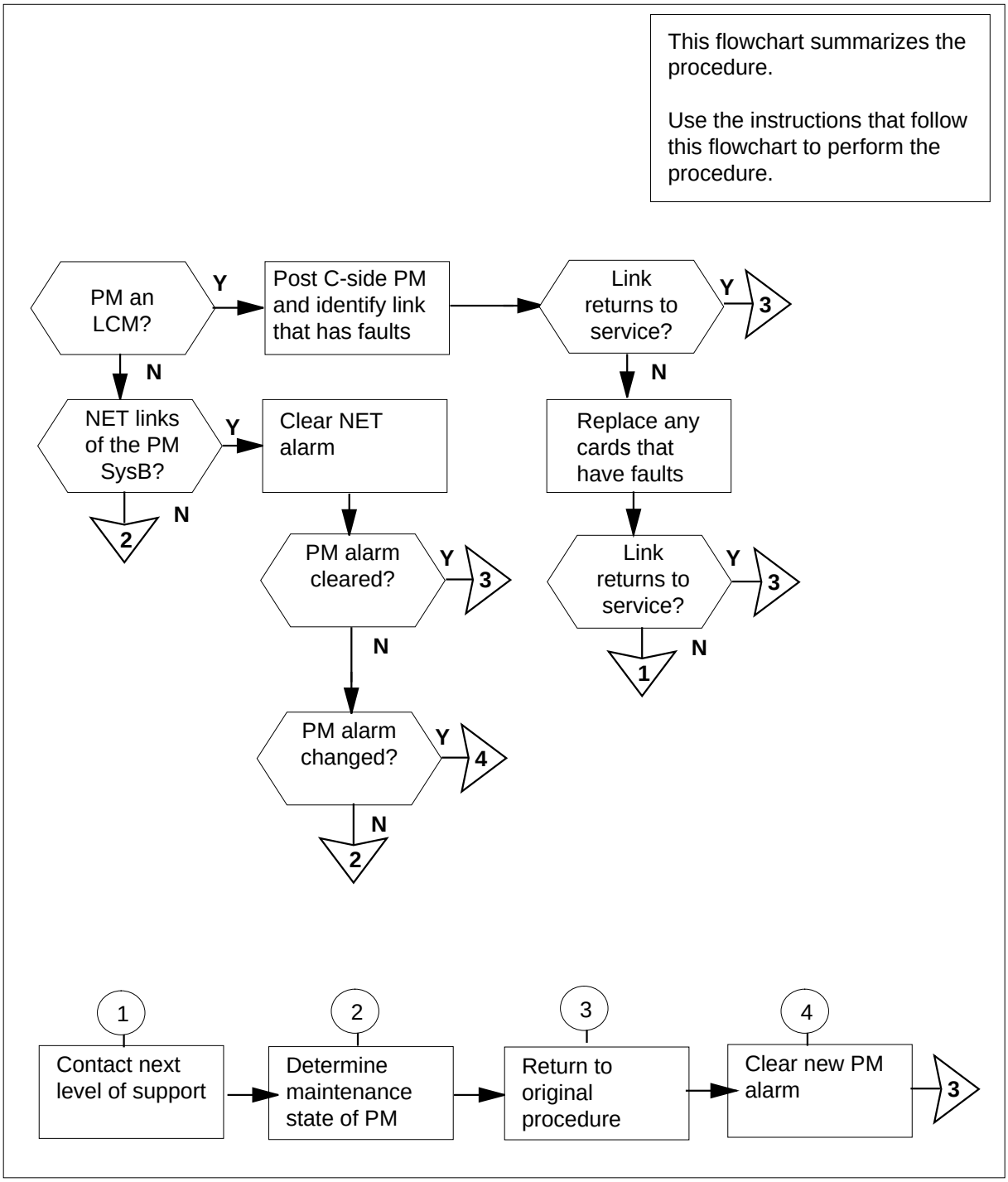
Use this procedure to clear C-side faults in a peripheral module (PM).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Clearing PM C-side faults (continued)

Summary of Clearing PM C-side faults critical, major, or minor alarm



Clearing PM C-side faults (continued)

Clearing PM C-side faults critical, major, or minor alarm

ATTENTION
Proceed only if a step in a maintenance procedure directs you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

At the MAP display

1 Determine if you are working on an LCM or a VLCM.

If the PM	Do
is an LCM	step 2
a VLCM	step 3
is other than listed here	step 14

2 To post the PM and identify the C-side links, type

>POST LCM lcm_no; TRNSL C

and press the Enter key.

where

lcm_no
is the number of the LCM you are working on

Example of a MAP response:

```
LCM    0         ISTb  Links_OOS:  CSide 1, PSide 0
Unit0:    SysB      /RG: 0
Unit1:    InSv      /RG: 0

Link 0: LTC 0  0;Cap MS;Status:SYSB;    MsgCond:CLS
Link 1: LTC 0  1;Cap MS;Status:OK  ;    MsgCond:OPN
Link 2: LTC 0  2;Cap  S;Status:OK
Link 3: LTC 0  3;Cap  S;Status:OK
Link 4: LTC 0  4;Cap  S;Status:OK
Link 5: LTC 0  5;Cap  S;Status:OK
```

Note: Identify the C-side link that has faults. Record the link number.

If a Mtce flag	Do
appears next to either unit	step 4
does not appear	step 5

Clearing PM C-side faults (continued)

3 Post the PM and identify its C-side links by typing

>POST VLCM vlcm_no; TRNSL C

and pressing the Enter key.

where

vlcm_no
is the number of the VLCM you are working on

Example of a MAP display response:

```
VLCM        0         ISTb  Links_OOS:  CSide 1,
PSide 0
Unit0:    SysB
Unit1:    InSv
                    11 11 11 11 11
Drwr:  01 23 45 67 89 01 23 45 67  89   Stby 1 InSv
       ..  --  --  --  --  --  --  --

Link 0: PLGC 0 0;Cap MS;Status:SYSB;    MsgCond:CLS
Link 1: PLGC 0 1;Cap MS;Status:OK  ;    MsgCond:OPN
Link 2: PLGC 0 2;Cap  S;Status:OK
Link 3: PLGC 0 3;Cap  S;Status:OK
Link 4: PLGC 0 4;Cap  S;Status:OK
Link 5: PLGC 0 5;Cap  S;Status:OK
```

Note: Identify the faulty C-side link and record the link number.

If a Mtce flag	Do
is displayed beside either unit	step 4
is not displayed	step 6

4 Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this step.

If the alarm that led you to this procedure	Do
remains (LCM)	step 5
remains (VLCM)	step 6
clears	step 28
changes	step 29

5 To post the C-side PM and identify the P-side links of the PM, type

>POST pm pm_no; TRNSL P

and press the Enter key.

where

Clearing PM C-side faults (continued)

pm
is the C-side PM (for example, an LGC or LTC)

pm_no
is the number of the C-side PM

Example of a MAP response:

```
LTC   0     ISTb  Links_OOS:  CSide 1, PSide 2
Unit0:    SysB
Unit1:    InSv

Link  0: LCM HOST 00 0        0;Cap MS;Status:SYSB     ;MsgCond:CLS
Link  1: LCM HOST 00 0        1;Cap MS;Status:SYSB     ;MsgCond:OPN
Link  2: LCM HOST 00 0        2;Cap  S;Status:OK
Link  3: LCM HOST 00 0        3;Cap  S;Status:OK
Link  4: LCM HOST 00 0        4;Cap  S;Status:OK
Link  5: LCM HOST 00 0        5;Cap  S;Status:OK
Link  6: LCM HOST 00 1        0;Cap MS;Status:OK       ;MsgCond:OPN
Link  7: LCM HOST 00 1        1;Cap MS;Status:OK       ;MsgCond:OPN
Link  8: LCM HOST 00 1        2;Cap  S;Status:OK
Link  9: LCM HOST 00 1        3;Cap  S;Status:OK
Link 10: LCM HOST 00 1        4;Cap  S;Status:OK
Link 11: LCM HOST 00 1        5;Cap  S;Status:OK
MORE ...
```

Note 1: `MORE...` indicates that you will see more links.

Note 2: Record information for links that have a status other than OK.

If a maintenance (Mtce) flag	Do
appears next to either unit	step 7
does not appear	step 8

6 Post the C-side PM and identify its P-side links by typing

`>POST pm pm_no; TRNSL P`

and pressing the Enter key.

where

pm
is the C-side PM, such as a PLGC

pm_no
is the number of the C-side PM

Example of a MAP display response:

Clearing PM C-side faults (continued)

```
PLGC   0         ISTb  Links_OOS:  CSide 1, PSide 2
Unit0:    SysB
Unit1:    InSv

Link  0: VLCM REMOTE 00 0          0;Cap MS;Status:SYSB  ;MsgCond:CLS
Link  1: VLCM REMOTE 00 0          1;Cap MS;Status:SYSB  ;MsgCond:OPN
Link  2: VLCM REMOTE 00 0          2;Cap  S;Status:OK
Link  3: VLCM REMOTE 00 0          3;Cap  S;Status:OK
Link  4: VLCM REMOTE 00 0          4;Cap  S;Status:OK
Link  5: VLCM REMOTE 00 0          5;Cap  S;Status:OK
Link  6: VLCM REMOTE 00 1          0;Cap MS;Status:OK    ;MsgCond:OPN
Link  7: VLCM REMOTE 00 1          1;Cap MS;Status:OK    ;MsgCond:OPN
Link  8: VLCM REMOTE 00 1          2;Cap  S;Status:OK
Link  9: VLCM REMOTE 00 1          3;Cap  S;Status:OK
Link 10: VLCM REMOTE 00 1               4;Cap  S;Status:OK
Link 11: VLCM REMOTE 00 1               5;Cap  S;Status:OK
MORE ...
```

Note 1: MORE . . indicates more links are to be observed.

Note 2: Record information for any links that have a status other than OK.

If a Mtce flag	Do
is displayed beside either unit	step 7
is not displayed	step 8

7 Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this step.

If the alarm that led you to this procedure	Do
remains	step 8
clears	step 28
changes	step 29

8

WARNING
Possible loss of service
You must add or upgrade any type of network links during low traffic periods. Some of the new links can fail to return to service if you ignore this caution.

Clearing PM C-side faults (continued)

To busy the link that has faults, type

>BSY LINK link_no

and press the Enter key.

where

link_no
is the number (0 to 19) of the P-side link that have faults

9 To return the link to service, type

>RTS LINK link_no

and press the Enter key.

where

link_no
is the number (0 to 19) of the P-side link that have faults

If the RTS	Do
passed, and other links are not SysB	step 28
passed, and other links are SysB	Return to step 8 and return the links that have faults to service.
failed, and the system generated a card list	step 10
failed, and the system did not generate a card list	step 30

10 Replace the first card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Complete the procedure and go to step 11.

11 To return the link to service, type

>RTS LINK link_no

and press the Enter key.

where

link_no
is the number (0 to 19) of the P-side link that has faults

If the RTS	Do
passed, and other links are not SysB	step 28
passed, and other links are SysB	Return to step 8 and return the links that have faults to service.

Clearing PM C-side faults (continued)

If the RTS	Do
failed, and you did not replace all cards on the card list	step 12
failed, and you replaced all cards on the card list	step 30

12 Replace the next card on the list. Refer to the correct procedure in the *Card Replacement Procedures*. Complete the procedure and go to step 13.

13 To return the link to service, type

`>RTS LINK link_no`

and press the Enter key.

where

link_no
is the number (0 to 19) of the P-side link that has faults

If the RTS	Do
passed, and other links are not SysB	step 28
passed, and other links are SysB	Return to step 8 and attempt to return each link that has faults to service.
failed, and you did not replace all cards on the card list	step 12
failed, and you replaced all cards on the card list	step 30

14 To post the PM and identify the C-side links of the PM, type

`>POST pm pm_no; TRNSL C`

and press the Enter key.

where

pm
is the C-side PM, like an LGC or LTC

pm_no
is the number of the C-side PM

Example of a MAP response:

Clearing PM C-side faults (continued)

Junctor network (JNET)

```
LTC    0         ISTb  Links_OOS:  CSide 2, PSide 1
Unit0:    InAct     SYSB
Unit1:    Act       InSv

Link 0: NET 0 1 45;Cap MS;Status:SYSB   ;MsgCond:CLS:Restrict
Link 1: NET 1 1 45;Cap MS;Status:SYSB   ;MsgCond:CLS:Restrict
Link 2: NET 0 1 47;Cap  S;Status:OK
Link 3: NET 1 1 47;Cap  S;Status:OK
Link 4: NET 0 0 33;Cap MS;Status:OK     ;MsgCond:OPN:Unrestrict
Link 5: NET 1 0 33;Cap MS;Status:OK     ;MsgCond:OPN:Unrestrict
```

or

Enhanced network (ENET)

```
LTC    0         ISTb  Links_OOS:  CSide 2, PSide 1
Unit0:    InAct     SYSB
Unit1:    Act       InSv

LINK 0 ENET 0 0 30 00  0;Cap:MS;Status:SYSB;MsgCond:CLS,Unrestricted
LINK 1 ENET 1 0 30 00  0;Cap:MS;Status:SYSB;MsgCond:CLS,Restricted
Link 2:ENET 0 0 30 00  1;Cap  S;Status:OK
Link 3:ENET 1 0 30 00  1;Cap  S;Status:OK
LINK 4 ENET 0 0 30 00  2;Cap:MS;Status:SysB;MsgCond:OPN,Unrestricted
LINK 5 ENET 1 0 30 00  2;Cap:MS;Status:SysB;MsgCond:OPN,Restricted
```

Note 1: In the ENET example, the first line indicates the system routes C-side link 0 through ENET 0 (plane 0). The system routes C-side link 0 through ENET 0 at shelf 0, slot 30, ENET link 00, ENET DS30 link equivalent 0. This display indicates that a single DS512 fiber connects to a single ENET link on both plane 0 and plane 1. A DS512 fiber link handles 16 DS30 equivalents The consecutive ENET DS30 numbers show the DS512 fiber link and the DS30 equivalents.

Note 2: Identify and record the C-side link and plane number.

If a Mtce flag	Do
appears at the side of the PM or either PM unit	step 15
does not appear	step 16

15 Go to the common procedure "Monitoring system maintenance" in this document. Complete the procedure and return to this step.

If the alarm that led you to this procedure	Do
remains	step 17
clears	step 28

Clearing PM C-side faults (continued)

If the alarm that led you to this procedure	Do
changes	step 29

16 To access the network level of a MAP display, type

>NET

and press the Enter key.

If the network	Do
is JNET	step 17
is ENET	step 21

17 To determine the status of the P-side links in the network, type

>LINKS plane_no

and press the Enter key.

where

plane_no
is the number (0 to 1) of the plane

Example of a MAP response:

```
CM     MS     IOD     Net      PM    CCS     Lns     Trks    Ext    APPL
 .     .       .     1Link    1LTC    .       .       .       .      .
                                *C*
Net Links   Net                  11111  11111  22222  22222  33
 0 Quit      Plane  01234  56789  01234  56789  01234  56789  01
 2             0    .L
 3             1    ..
 4         Net   0  Links              11  1111  1111  2222  2222  2233
 5                Plane   0123  4567  8901  2345  6789  0123  4567  8901
 6 Tst_             0     ....  ...-  S..-  ---.  ....  ...-  S-..  ---.
 7 Bsy_             1     ....  ...-  S..-  ---.  ....  ...-  S-..  ---.
 8 RTS_            Links  3333  3333  4444  4444  4455  5555  5555  6666
 9                Plane   2345  6789  0123  4567  8901  2345  6789  0123
10                  0     ....  ...-  ----  ---.  ....  ...-  ----  ---.
11 Disp_            1     ....  ...-  ----  ---.  ....  ...-  ----  ---.
12
13           LINKS:
14
15
16 Trnsl_
17 Links_
18
USER1
Time  14:57   >
```

If SysB links	Do
are in the NET	step 18
are not in the NET	step 26

Clearing PM C-side faults (continued)

18 To determine if the SysB links associate with the CBsy PM, type

>TRNSL link_no

and press the Enter key.

where

link_no
is the number (0 to 63) of the link that you recorded in step 2

Example of a MAP response:

```
CM      MS     IOD     Net      PM    CCS    Lns    Trks    Ext   APPL
 .      .       .     1Link    1LTC    .      .       .       .     .
                                *C*
Net Links  Net                  11111  11111  22222  22222  33
 0 Quit     Plane  01234  56789  01234  56789  01234  56789  01
 2            0    .L
 3            1    ..
 4          Net   0  Links              11  1111  1111  2222  2222  2233
 5                Plane   0123  4567  8901  2345  6789  0123  4567  8901
 6 Tst_             0     ....  ...-  S..-  ---.  ....  ...-  S-..  ---.
 7 Bsy_             1     ....  ...-  S..-  ---.  ....  ...-  S-..  ---.
 8 RTS_            Links  3333  3333  4444  4444  4455  5555  5555  6666
 9                Plane   2345  6789  0123  4567  8901  2345  6789  0123
10                  0     ....  ...-  ----  ---.  ....  ...-  ----  ---.
11 Disp_            1     ....  ...-  ----  ---.  ....  ...-  ----  ---.
12          trnsl 24
13           Net 0 Link 38 = LTC 0 Port 2
14
15
16 Trnsl_
17 Links_
18
USER1
Time  14:57   >
```

If the SysB links	Do
associate with the CBsy PM	step 19
do not associate with the CBsy PM	step 26

19 A network alarm causes the PM alarm. Perform the correct procedure in this document . Go to step 20.

20 The switch attempts to recover the PM. Refer to the procedure "Monitoring system maintenance" in this document. Wait for the system to complete the automatic recovery processes before you continue this procedure or any manual maintenance activity. System actions can recover the PM and clear the fault. System actions can also create another type of alarm.

If	Do
NET alarms or PM alarms are not present	step 31
NET alarms are not present, and the PM alarm is the same alarm that led you to this procedure	step 26

Clearing PM C-side faults (continued)

If	Do
NET alarms are not present, and the PM alarm is different from the alarm that led you to this procedure	step 29
a NET alarm appears	step 30

21 To access the ENET link level of the MAP display, type

`>SHELF shelf_no;CARD card_no;LINK link_no`

and press the Enter key.

shelf_no
is the number of the shelf that connects to the defective links that you identified in step 14.

card_no
is the number of the card slot that connects to the defective links that you identified in step 14.

link_no
is the number of the link that connects to the defective links that you identified in step 14.

22 To translate the peripheral side (P-side) plane, shelf, slot and link, type

`>TRNSL P shelf_no link_no`

and press the Enter key.

where

plane_no
is the number of the plane that connects to the link that has faults

link_no
is the number of the link that has faults

Example of a MAP response:

Clearing PM C-side faults (continued)

```
CM    MS    IOD     Net     PM     CCS    Lns    Trks     Ext   APPL
.     .     .     32PSLk   1LTC    .      .       .       .      .
                     M      *C*

CARD  ENET     System    Matrix    Shelf 0 1 2 3
0 Quit Plane 0   .       D Fault         F - - -
2     Plane 1   .          .             . - - -
3 QueryEN_
4 Locate_      SHELF 00  Slot    1111111 11122222 22222333 333333
5 Deload_             123456 78 90123456 78901234 56789012 345678
6 Tst_      Plane 0   ...... .. ..F----- ------.. .  .
7 Bsy_      Plane 1   ...... .. ..F----- ------.. .  .
8 Rts_
9 Offl_   CARD 11   Front:    Back:     DS-512 Links
10                   Xpt      I/F        0 1 2 3
11 RExTst_ Plane 0    .        .         . . - -
12         Plane 1    .        .         . . - -
13         trnsl p 0 1
14 Link_  Request to TRNSL ENET Plane:0 Shelf:00 Slot:11 Link:01 submitted
15 System  Request to TRNSL ENET Plane:0 Shelf:00 Slot:11 Link:01 passed.
16 Matrix  ENET Plane:0 Shelf:00 Slot:30 Link:01 :
17 Card_   LTC 0 Port:0
18 Trnsl_
User1 13:56 >
```

23 To busy the link that has faults, type

`>BSY plane_no LINK link_no`

and press the Enter key.

where

plane_no
is the number of the plane that connects to the defective link

link_no
is the number of the link that has faults

Example of a MAP response:

Clearing PM C-side faults (continued)

```
 CM      MS     IOD     Net      PM     CCS     Lns    Trks    Ext     APPL
   .      .       .   32PSLk    1LTC     .       .       .      .        .
                        M       *C*

CARD      ENET      System    Matrix    Shelf 0 1 2 3
0 Quit    Plane 0    .        Fault           F - - -
2         Plane 1    .          .             . - - -
3 QueryEN_
4 Locate_ SHELF 00  Slot         1111111 11122222 22222333 333333
5 Deload_             123456 78 90123456 78901234 56789012 345678
6 Tst_    Plane 0     .  .   .. ..F..... -------- ------.. .  .
7 Bsy_    Plane 1     .  .   .. ..F..... -------- ------.. .  .
8 Rts_    Link: 1
9 Offl_   CARD 11   Front:    Back:     DS-512 Links DS-30 Equiv 111111
10                   Xpt       I/F        0 1 2 3        0123456789012345
11 RExTst_ Plane 0    .         .         . M - -        MMMMMMMMMMMMMMMM
12        Plane 1     .         .         . . - -        ................
13        bsy 0 link 1
14 Link_  Request to MAN BUSY ENET Plane:0 Shelf:00 Slot:11 Link:01 passed.
15 System
16 Matrix
17 Card_
18 Trnsl_
USER1 13:58 >
```

24 To test the link that has faults, type

`>TST plane_no LINK link_no`

and press the Enter key.

where

plane_no
is the number of the plane that connects to the defective link

link_no
is the number of the link that has faults

If the test	Do
passed	step 23
failed	step 30

25 To return to service all links that you busied in step 23 to service, type

`>RTS plane_no LINK link_no`

and press the Enter key.

where

plane_no
is the number of the plane that connects to the defective link

link_no
is the number of the link that has faults

Example of a MAP response:

Clearing PM C-side faults (continued)

```
 CM      MS     IOD     Net      PM     CCS     Lns    Trks    Ext     APPL
   .      .      .       .      1LTC      .       .       .      .        .

CARD      ENET      System    Matrix    Shelf 0 1 2 3
0 Quit    Plane 0    .        Fault           F – – –
2         Plane 1    .          .             . – – –
3 QueryEN_
4 Locate_ SHELF 00  Slot         1111111 11122222 22222333 333333
5 Deload_             123456 78 90123456 78901234 56789012 345678
6 Tst_    Plane 0     .  .   .. ........ -------- ------.. .  .
7 Bsy_    Plane 1     .  .   .. ........ -------- ------.. .  .
8 Rts_    Link: 1
9 Offl_   CARD 11   Front:    Back:     DS–512 Links DS–30 Equiv 111111
10                   Xpt       I/F        0 1 2 3        0123456789012345
11 RExTst_ Plane 0    .         .         . . – –        ................
12         Plane 1    .         .         . . – –        ................
13        RTS 0 link 1
14 Link_  Request to RTS ENET Plane:0 Shelf:00 Slot:11 Link:01 passed.
15 System
16 Matrix
17 Card_
18 Trnsl_
USER1 13:58 >
```

If RTS	Do
passed	step 26
failed	step 30

26 To return to the PM level of the MAP display, type

>PM

and press the Enter key.

27 To determine the maintenance state that causes the PM alarm, type

>STATUS

and press the Enter key.

Example of a MAP response:

Clearing PM C-side faults (end)

```
      SysB      ManB      OffL    CBsy      ISTb     InSv
PM      0         0         0       0         3       25

TM8     0         0         0       0         0        2
MTM     0         0         0       0         0        3
LGC     0         0         0       0         0        3
LCM     0         0         0       0         2        0
LTC     0         0         0       0         1        1
LIM     0         0         0       0         0        1
LIU7    0         0         0       0         0        1
FRIU    0         0         0       0         0        1
DTCI    0         0         0       0         0        1
LCME    0         0         0       0         0        1
                                 MORE ...
```

Note: Note the maintenance state of the PM.

28 Return to the step in the maintenance procedure that led you to this procedure. Go to step 31.

29 Refer to the correct procedure in this document to clear the alarm. Go to step 31.

30 You will require additional maintenance action to clear the alarm. Contact the next level of support. Describe the steps that you performed to clear both the PM and NET alarms. Go to step 31.

31 The procedure is complete.

Clearing ringing generator faults LCM

Application

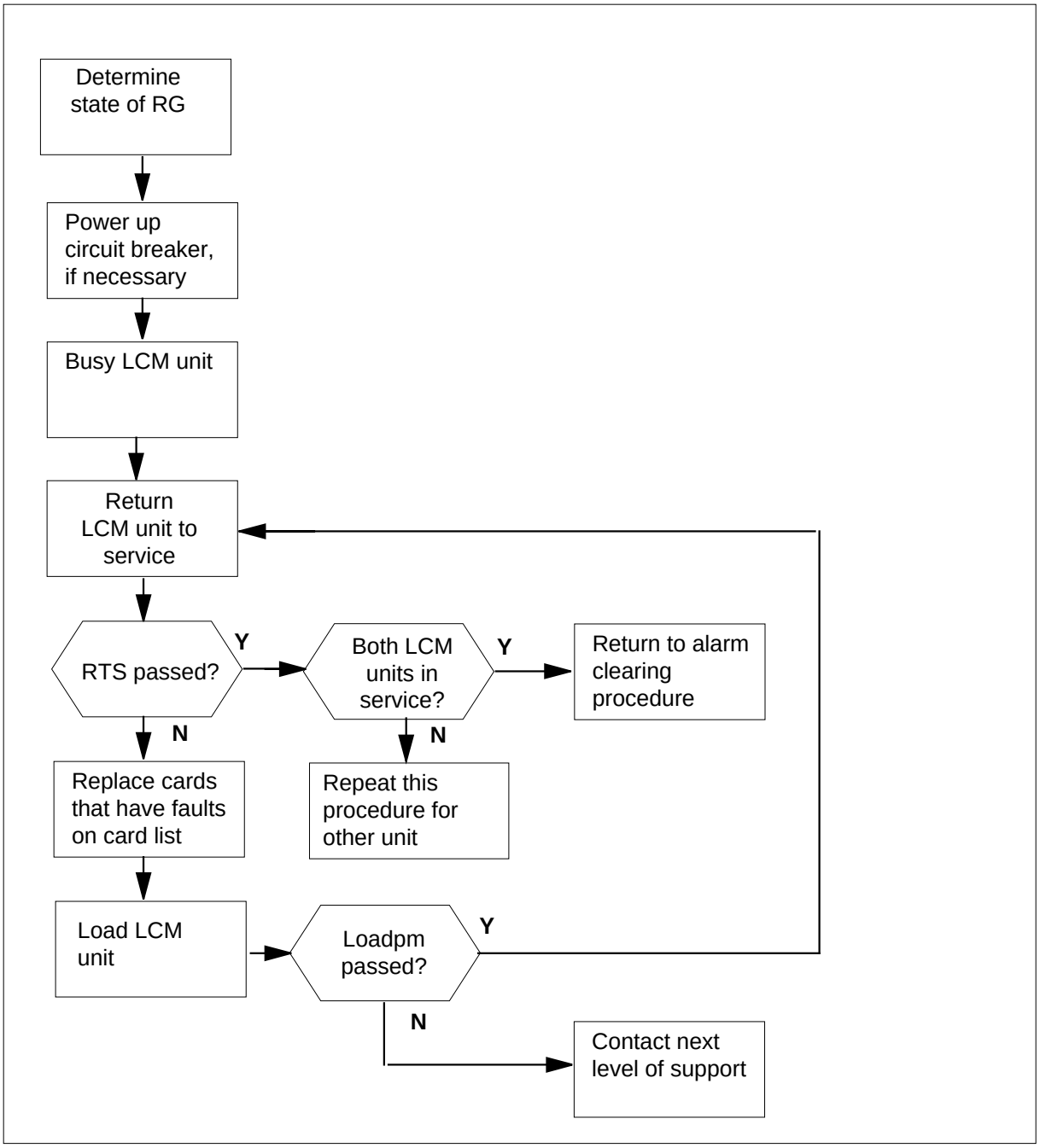
Use this procedure to clear the ringing generator faults that ring in a line concentrating module (LCM).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Clearing ringing generator faults
LCM (continued)

Summary of Clearing ringing generator faults in an LCM



Clearing ringing generator faults
LCM (continued)

Clearing ringing generator faults in an LCM

At the MAP display

1 Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

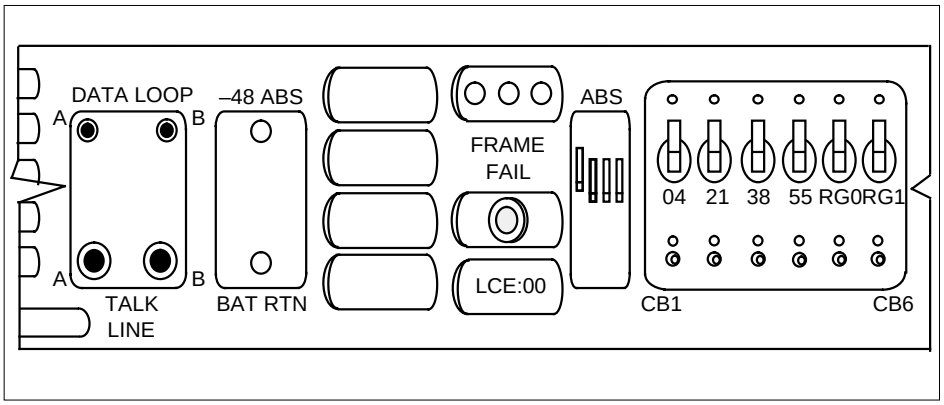
2 Observe the MAP display the QUERYPM FLT command generated. The display led you to this procedure. Identify the maintenance state for both ringing generators (RG).

If	Do
both RGs are SysB	Go to step 4 and select an RG to work on
one RG is SysB and one RG is ISTb or InSv	Go to step 4 and work on the SysB RG
both RGs are ISTb	Select an RG to work on and go to step 3
one RG is ISTb and one RG is InSv	step 3

3 Wait for a maintenance window before you continue this procedure.

4 Check the RG circuit breakers on the frame supervisory panel (FSP).The circuit breakers are identified as RG 0 and RG 1. Refer to the following diagram for help.

Clearing ringing generator faults
LCM (continued)



If the LEDs of the circuit breakers	Do
are on	step 5
are off	step 6

5 Turn on the circuit breaker. Move the power switch to the ON position.

If the circuit breaker	Do
remains switched ON and the LED light on the FSP goes off	step 6
trips or the LED light on the FSP does not go off	step 12

6 To busy the LCM unit, type

>BSY UNIT unit_no

and press the Enter key.

where

unit_no
is the LCM unit (0 to 1) with the ringing generator that has faults

Note: Ringing generator 0 associates with unit 0. Ringing generator 1 associates with unit 1.

7 To return the LCM unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

Clearing ringing generator faults
LCM (continued)

unit_no
is the LCM unit (0 to 1) with the ringing generator that has faults

If the RTS	Do
failed and the system generated a card list	step 8
failed and the system did not generate a card list	step 12
passed	step 11

8 Replace the first or next card on the list. Refer to the correct procedure in *Card Replacement Procedures*. Complete this procedure and return to this point.

If you	Do
replace a NT6X51, NT6X52, or NT6X53 card	step 9
replace a card other than listed here	step 10

9 To load the LCM unit, type

`>LOADPM UNIT unit_number`

and press the Enter key.

where

unit_no
is the LCM unit (0 to 1) with the ringing generator that has faults

If the load	Do
failed and you did not replace all cards	step 8
failed and you replaced all cards	step 12
passed	step 10

10 To return the LCM unit to service, type

`>RTS UNIT unit_no`

and press the Enter key.

where

Clearing ringing generator faults
LCM (end)

unit_no
is the LCM unit (0 to 1) with the ringing generator that has faults

If the RTS	Do
failed and you did not replace all cards	step 8
failed and you replaced all cards	step 12
failed and the system did not generate a card list	step 12
passed	step 11

11 Determine the state of both RGs.

If	Do
both RGs are in-service	step 13
one RG is in-service and you did not test the other RG	step 2
one RG is in-service and you tested the other RG	step 12

12 Additional maintenance action is required to clear this alarm. Contact the next level of support. Describe in detail the steps that you performed to clear this fault. Describe the alarm that led you to this procedure.

13 The procedure is complete. Return to the procedure that led you to this common procedure.

Connecting temporary fiber cable between MS and SSLPP

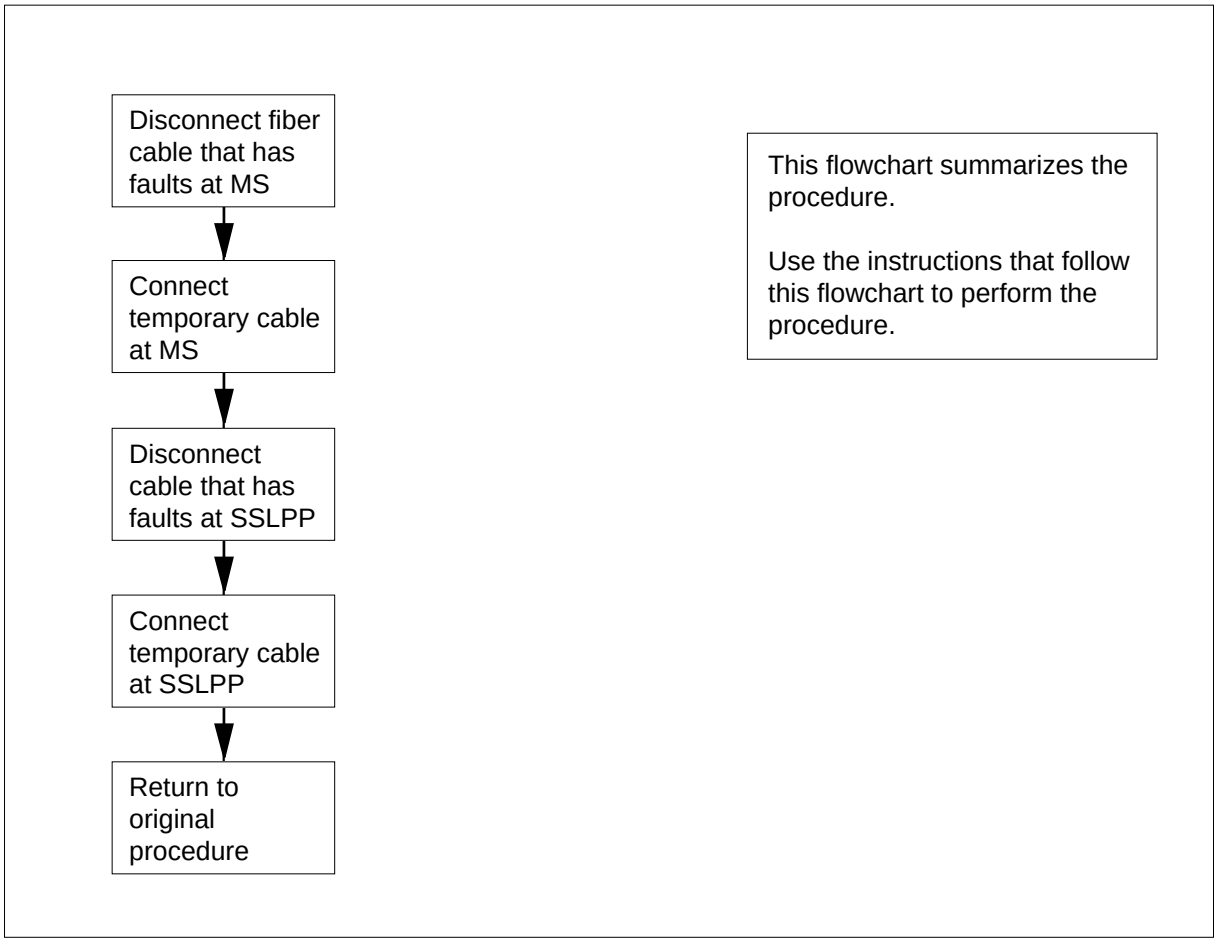
Application

Use this procedure to connect a temporary fiber cable between a message switch (MS) and a single-shelf link peripheral processor (SSLPP).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Summary of Connecting temporary fiber cable between MS and SSLPP



Connecting temporary fiber cable between MS and SSLPP (continued)

Connecting temporary fiber cable between MS and SSLPP

At the MS

1

DANGER
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

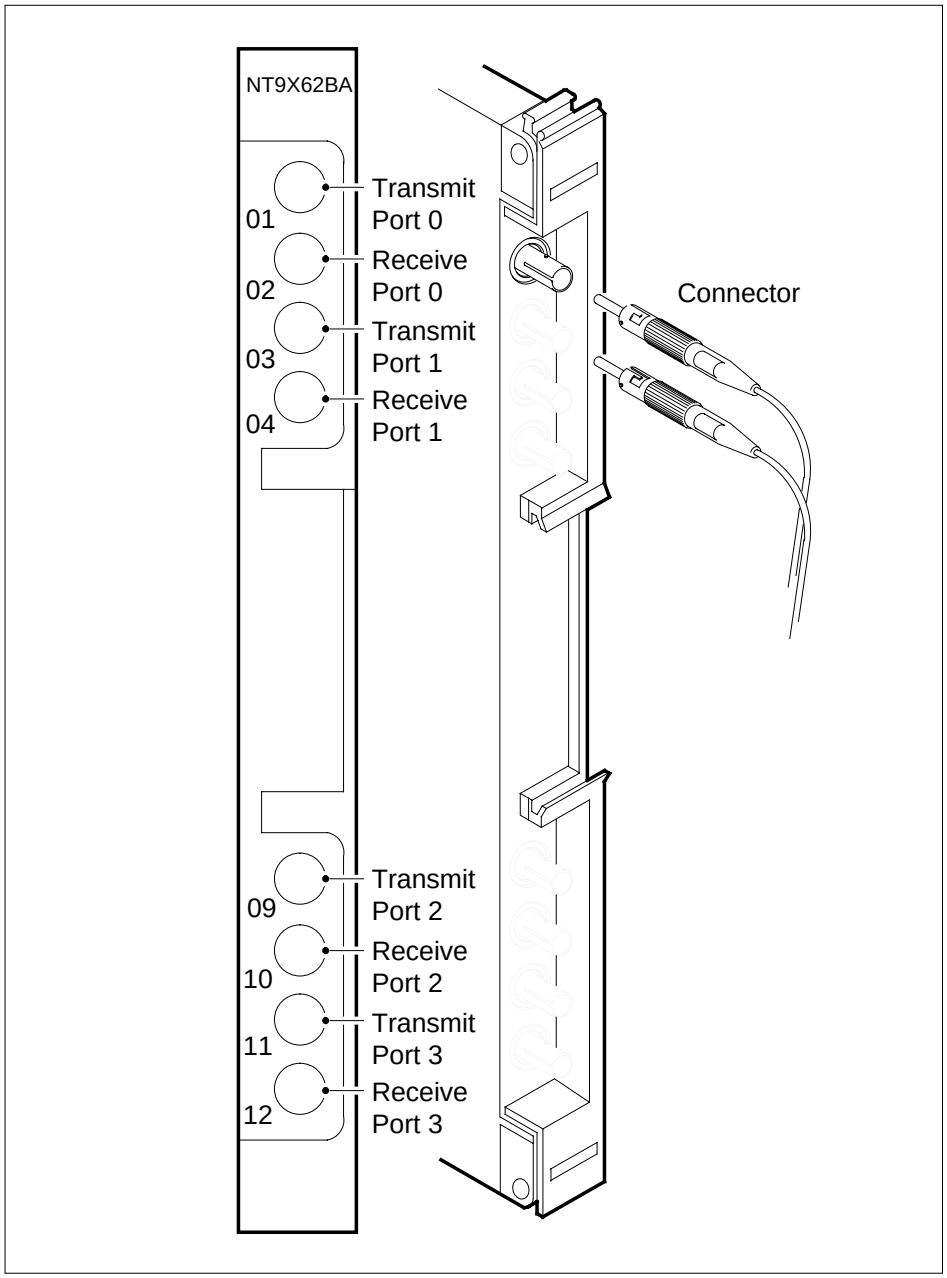
DANGER
Fiber cable can become damaged and cause service interruption
Use caution when you handle fiber cables. Do not crimp fiber cables or bend fiber cables to a radius of less than 25 mm (1 in.).

Obtain a spare fiber cable to use as a temporary connection between the MS and the SSLPP.

2 Before you disconnect the link, make sure that you are at the correct MS shelf and the correct interface card (slot). Note the location of the fiber cable.that has faults.

3 The figure below relates the fiber receptacles that appear on the face of the card to the port numbers. The port numbers appear on the MAP display for the NT9X62BA interface card. Note the names for Transmit and Receive.

Connecting temporary fiber cable between MS and SSLPP (continued)

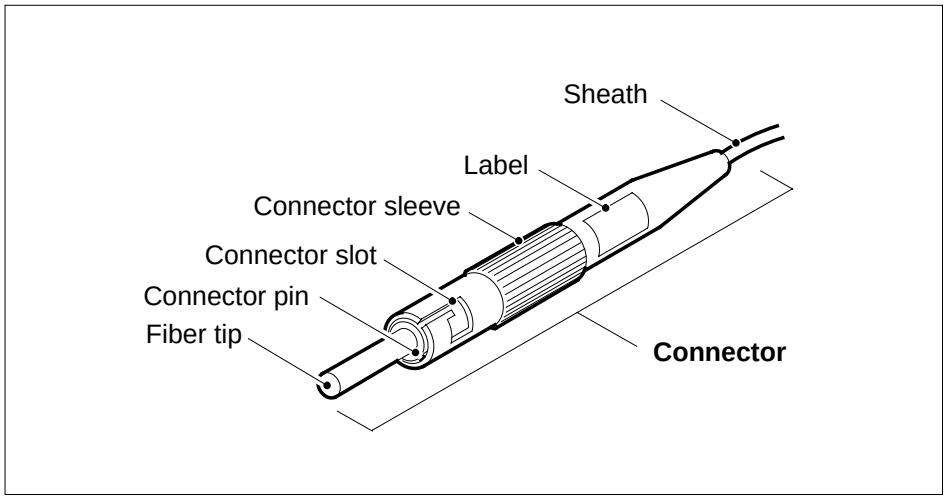


Connecting temporary fiber cable between MS and SSLPP (continued)

4

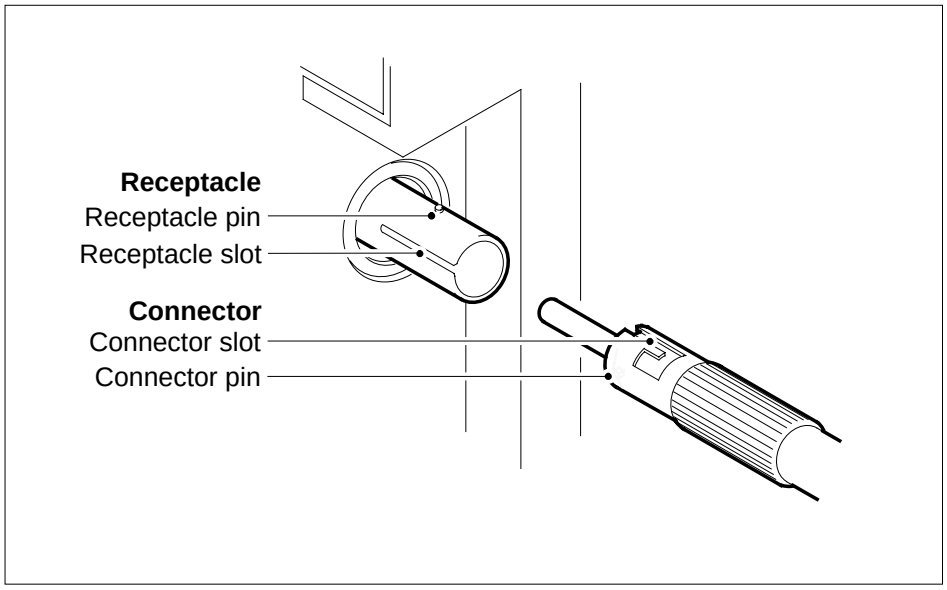
DANGER
Do not contaminate the fiber tip surface
Do not touch the tip of the fiber. Dirt or oil from the skin transferred to the fiber tip surface degrades fiber performance.

The following figure shows the type of connector used for fiber connections between an MS and an SSLPP.



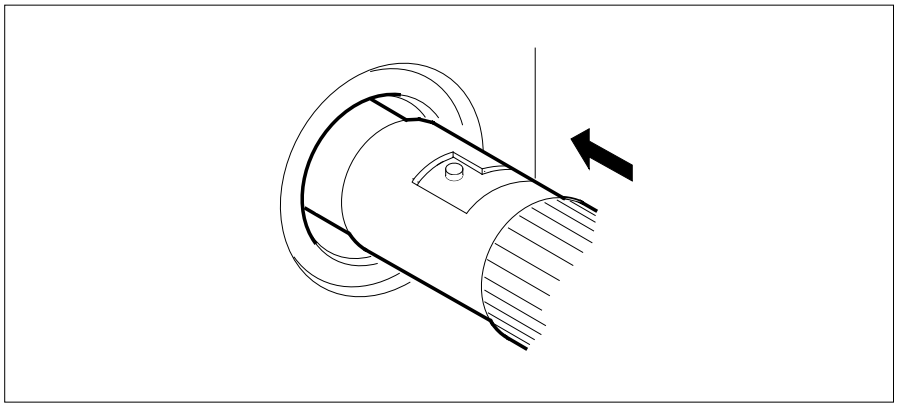
5 The following figure shows the different parts of the connector and receptacle as referred to in this procedure.

Connecting temporary fiber cable between MS and SSLPP (continued)



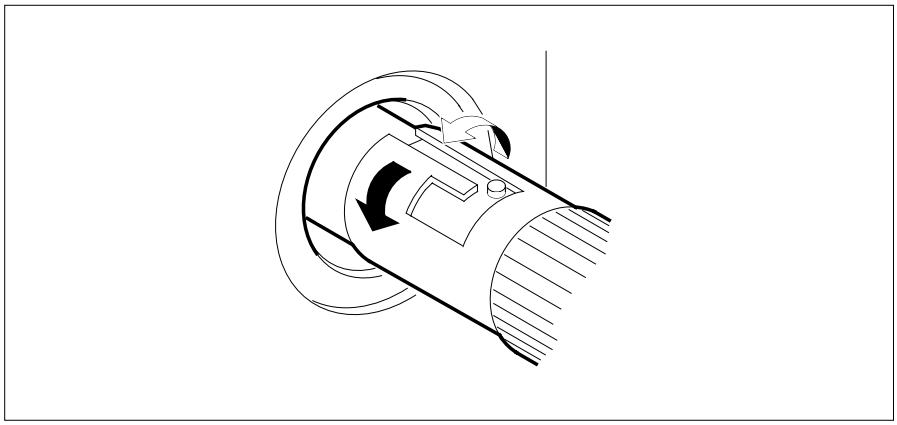
6 Disconnect the transmit connectors and receive connectors for the cable that has faults.

a Grasp the sleeve with two fingers and carefully push the sleeve toward the frame.

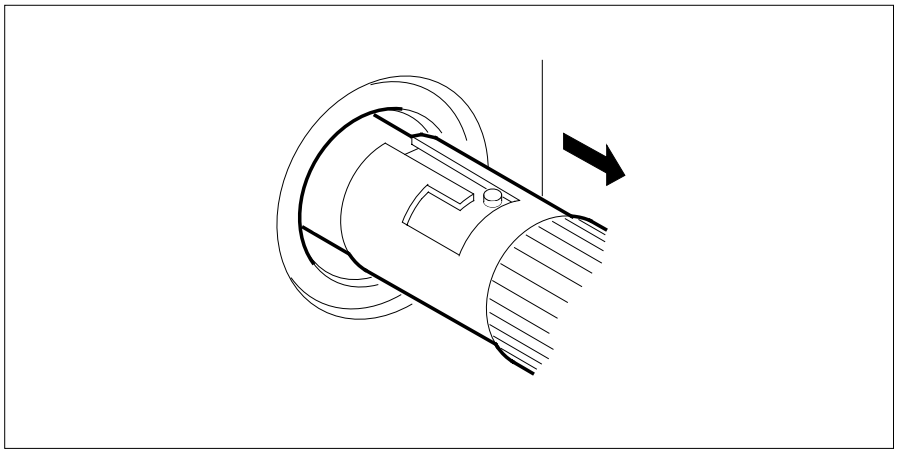


b Turn the connector counter-clockwise until the connector pin is in the position shown.

Connecting temporary fiber cable between MS and SSLPP (continued)



c Carefully pull the connector away from the frame.



7 Place dust caps on the transmit connectors and receive connectors of the cable that has faults.

8 Create new labels for the temporary fiber cable that contain the same information as those on the cable that has faults. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so that Nortel (Northern Telecom) personnel who replaced the cable, can identify the cable.

Note: The label identifies the MS shelf number, slot number, receptacle number and port number, and the signal type (transmit or receive). The label also specifies the SSLPP on which the fiber terminates.

Example of a label:

```
DPCC    00  26
29R     01  0T
EMC     00  26
32R     RX
```

Field descriptions:

Connecting temporary fiber cable between MS and SSLPP (continued)

DPCC
is the DPCC cabinet that contains the MS

00
is the cabinet number

26
is the MS shelf base mounting position number

21R
is the slot number and position (R for rear, F for front)

01
is the card receptacle number

0T
is the port number and the signal type (T for transmit, R for receive)

EMC
is the cabinet on which the cable terminates

00
is the cabinet number

26
is the SSLPP shelf by base mounting position number

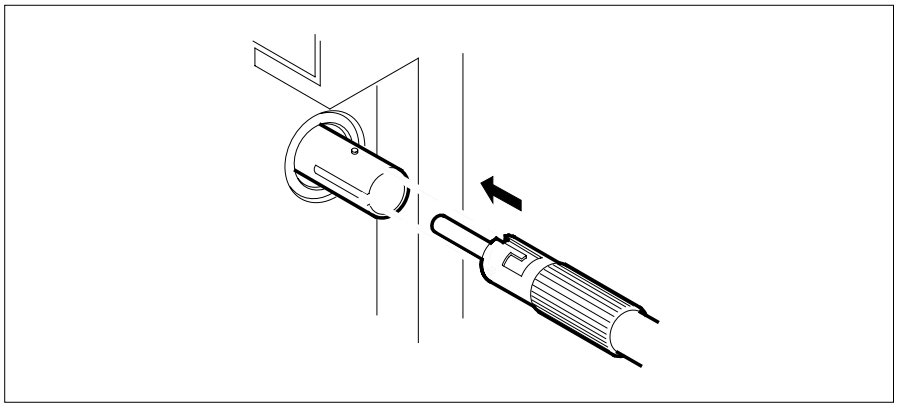
32R
is the slot and position (R for rear, F for front)

RX
is the signal type at the PM end (RX for receive or TX for transmit)

9 Remove the dust caps on the transmit and receive connectors of the temporary fiber cable.

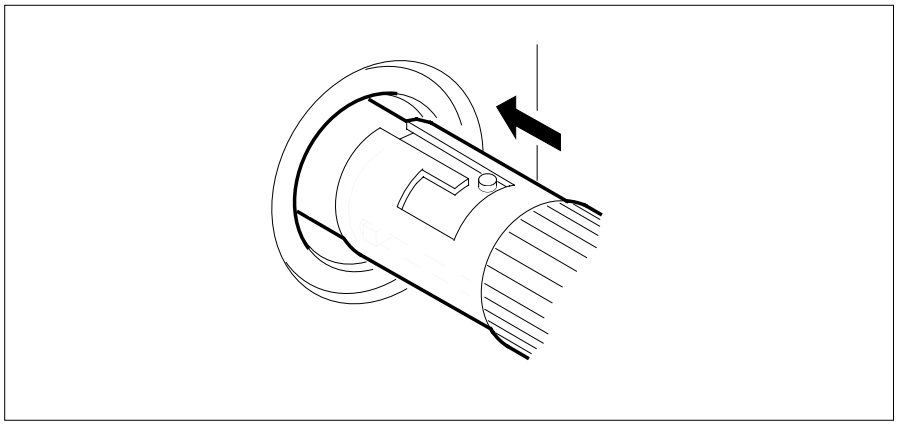
10 Connect the transmit and receive connectors to the MS.

a Align the connector pin with the receptacle slot and pin in the sequence given, as shown.

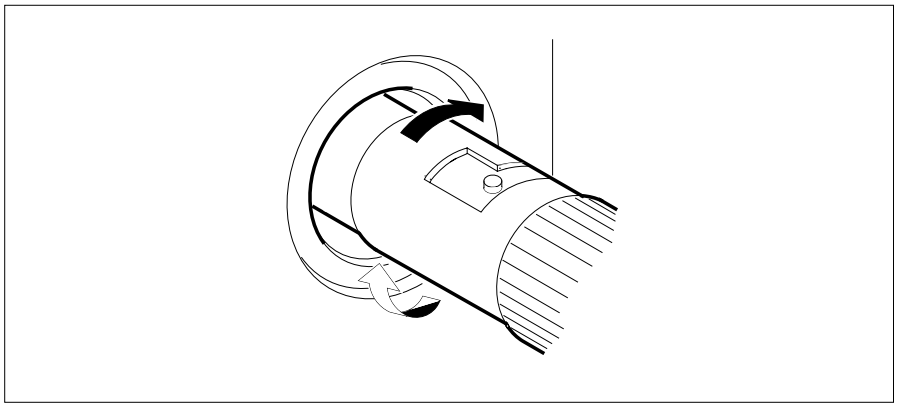


b Carefully slide the connector into the receptacle.

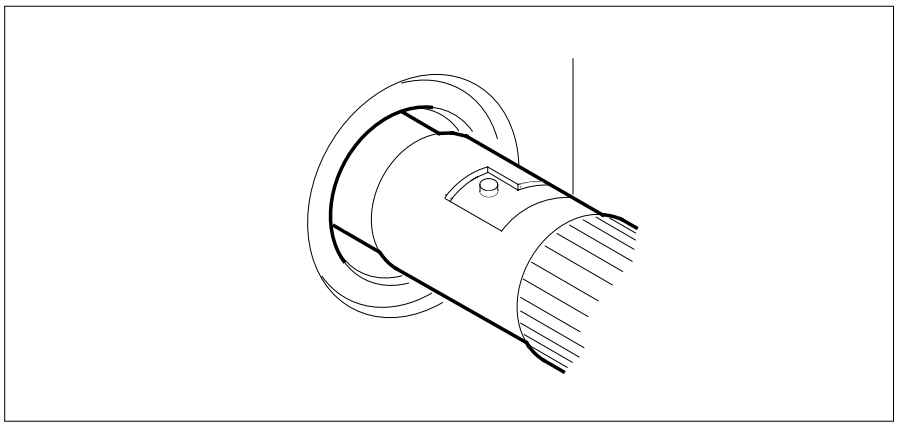
Connecting temporary fiber cable between MS and SSLPP (continued)



c Turn the connector clockwise to lock the connector in place.



d Release the connector. The figure shows the final connector position.

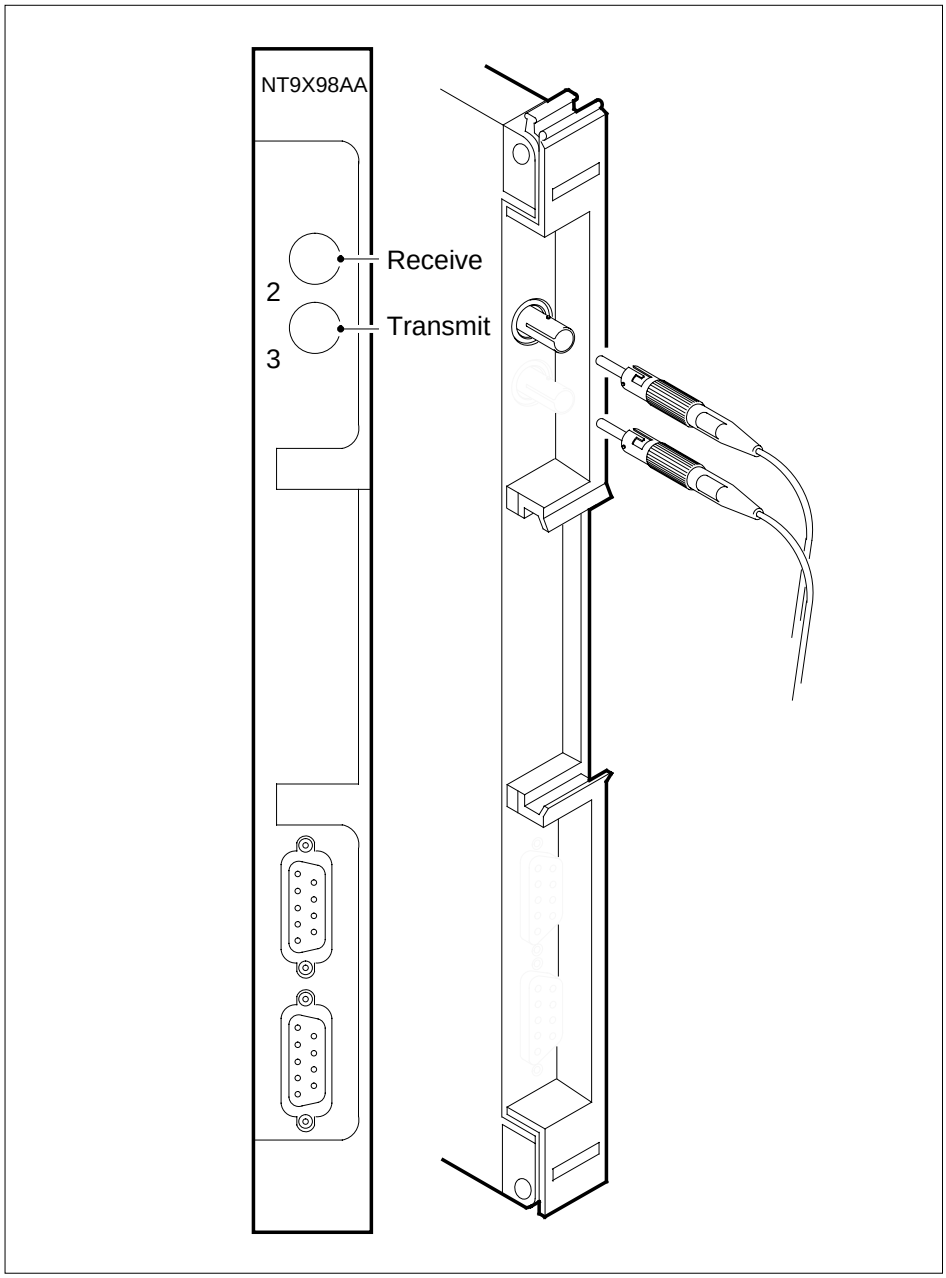


11 Run the temporary cable to the SSLPP. Use a direct route along the floor. Leave the cable that has faults in place. Nortel personnel remove the cable during installation of the replacement cable.

Connecting temporary fiber cable between MS and SSLPP (continued)

At the SSLPP

12 The figure shows the fiber cable receptacles on the NT9X98AA interface card. Note the names for Transmit and Receive.



13 Before you disconnect the link, make sure that you are at the correct SSLPP shelf.

Note: The MS 0 fiber cables terminate on unit 0 (slot 7R) of an SSLPP. The MS 1 fiber cables terminate on unit 1 (slot 32R) of an SSLPP.

Connecting temporary fiber cable between MS and SSLPP (continued)

14 Disconnect fiber cable that has faults from the correct NT9X98 card.

Note: The top connector is the SSLPP receive port and the bottom connector is the PM transmit port.

15 Place dust caps on the transmit and receive connectors of the cable that has faults.

16 Create new labels for the temporary fiber cable that contain the same information as those on the cable that has faults. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so that Nortel personnel who replace the cable, can identify the cable.

Example of a label:

```
EMC     00  26
32R     RX
DPCC    00  26
21R     01  0T
```

Field descriptions:

EMC
is the cabinet that the cable terminates on

00
is the cabinet number

26
is the SSLPP shelf base mounting position number

32R
is the slot and position (R for rear, F for front)

RX
is the signal type at the PM end (RX for receive or TX for transmit)

DPCC
is the DPCC cabinet that contains the MS

00
is the cabinet number

26
is the MS shelf base mounting position number

21R
is the slot and position (R for rear, F for front)

01
is the card receptacle number

0T
is the port number and the signal type (T for transmit, R for receive)

17 Remove the dust caps on the transmit and receive connectors of the temporary fiber cable.

Connecting temporary fiber cable between MS and SSLPP (end)

18

WARNING
Avoid cross-connecting cables
Make sure that the cable connected to the transmit port at the MS connects to the receive port at the SSLPP. Loss of service results if you connect the cables to transmit ports at each end. Loss of service results if the subsystems return to service configured in this method.

Connect the transmit and receive connectors of the temporary fiber cable to the SSLPP.

19 Return to the maintenance procedure that sent you to this procedure. Continue as directed.

Connecting temporary fiber cable from an ENET to a PM

Application

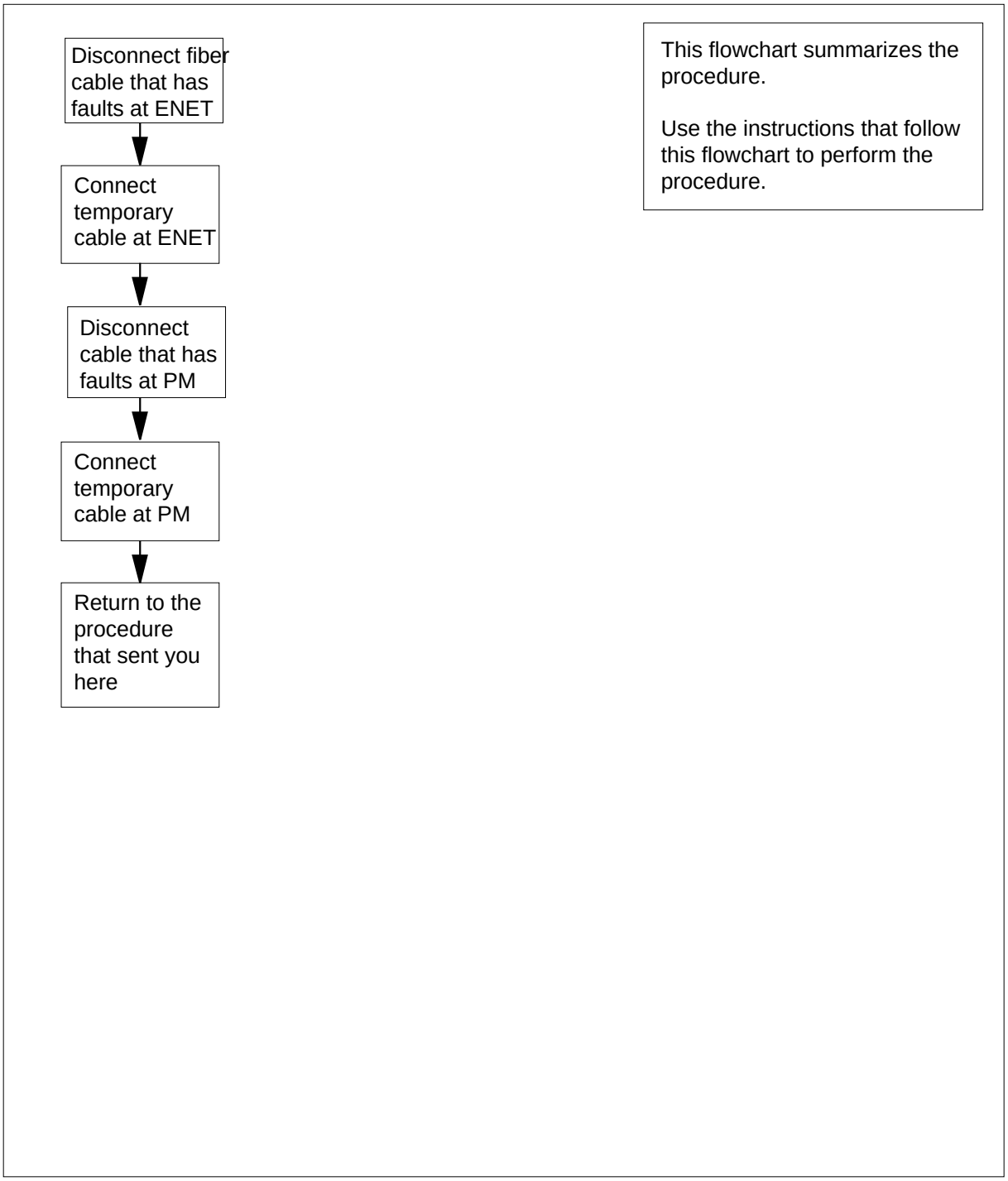
Use this procedure to connect a temporary fiber cable between the enhanced network (ENET) and a peripheral module (PM).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Connecting temporary fiber cable from an ENET to a PM (continued)

Summary of Connecting temporary fiber cable from an ENET to a PM



Connecting temporary fiber cable from an ENET to a PM (continued)

Connecting temporary fiber cable from an ENET to a PM

At the ENET

1

WARNING
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, you can cause equipment damage or loss of service.

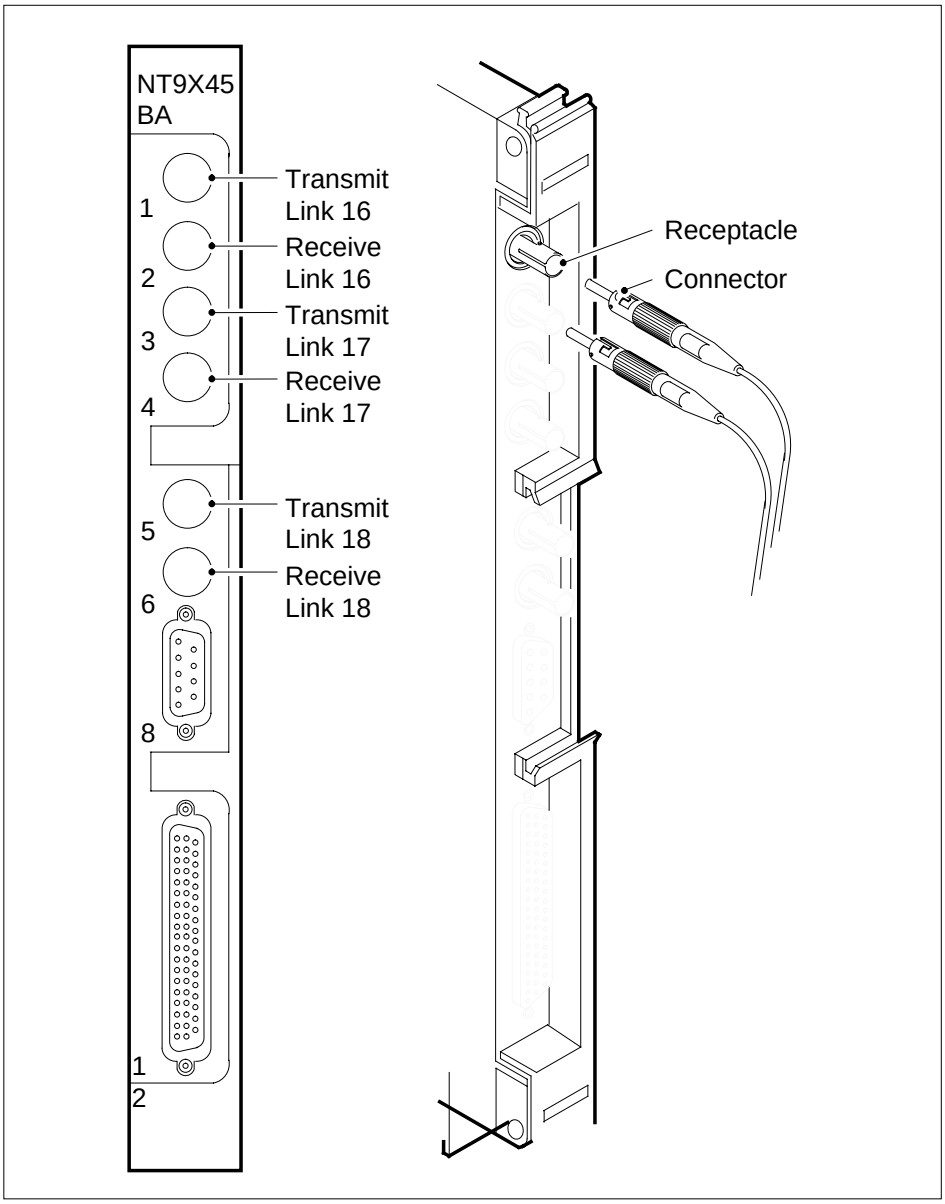
WARNING
Fiber cable can become damaged
Use caution when you handle fiber cables. Do not crimp or bend the cables to a radius of less than 30 mm (1.18 in.).

Obtain a spare fiber cable to use as a temporary connection between the ENET node and the PM.

2 Before you disconnect the link, make sure that you are at the correct ENET node (plane and shelf name). Make sure that you are at the correct interface card (slot). Note the zone number of the fiber cable that has faults.

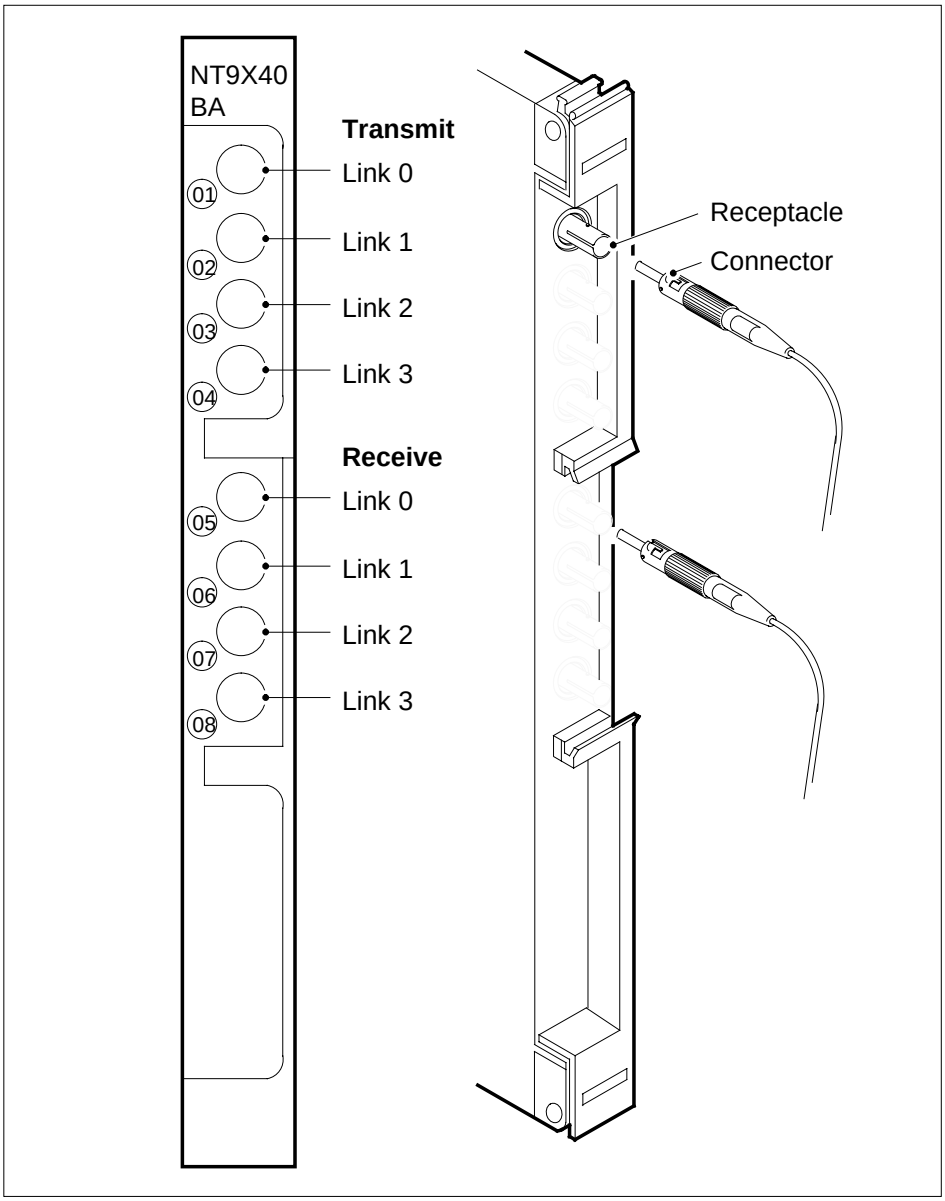
3 The following figure relates the zone numbers (1-12) that appear on the face of the card to the link numbers. The link numbers that appear on the MAP display for the NT9X45BA interface card. Note that only fiber connections appear. Note carefully the zone names for transmit and receive.

Connecting temporary fiber cable from an ENET to a PM (continued)



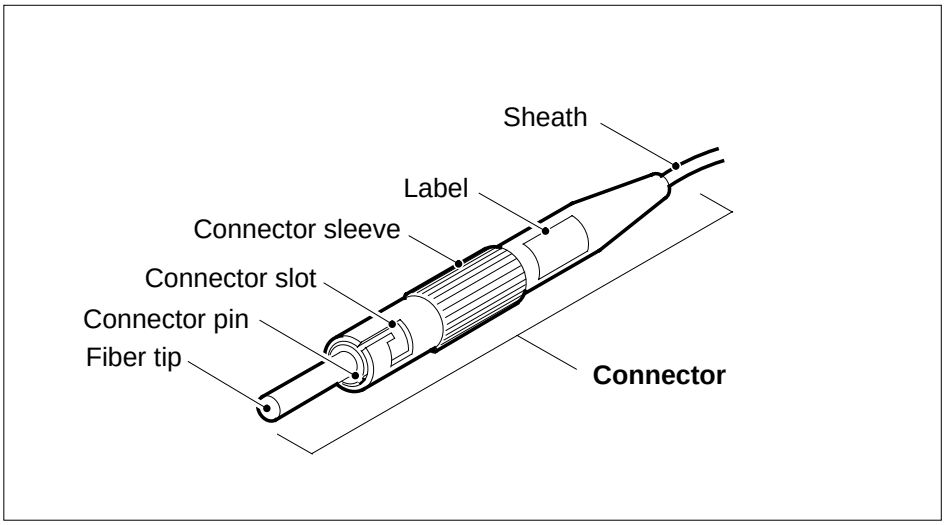
4 The following figure relates the zone numbers (01-08) that appear on the face of the card to the link numbers. The link numbers appear on the MAP display for the NT9X40BA interface card. Note carefully the zone names for transmit and receive.

Connecting temporary fiber cable from an ENET to a PM (continued)



5 The following figure shows the type of connector used for fiber connections between an ENET and a PM.

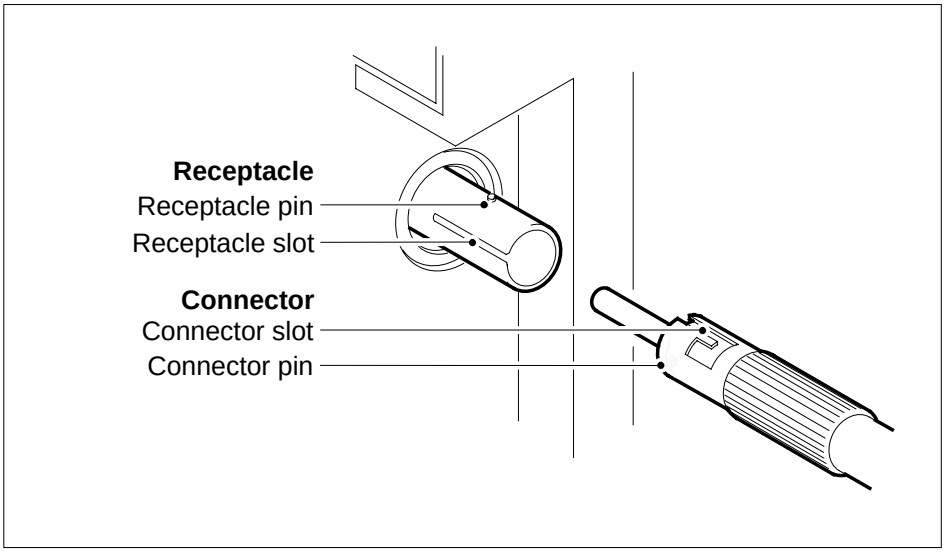
Connecting temporary fiber cable from an ENET to a PM (continued)



6

WARNING
Do not contaminate the fiber tip surface
Do not touch the tip of the fiber. Dirt and oil transferred from the skin to the fiber tip surface degrade fiber performance.

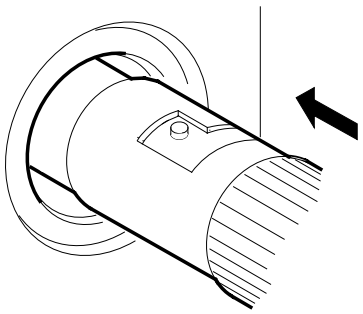
The following figure shows the different parts of the connector and receptacle as referred to in this procedure.



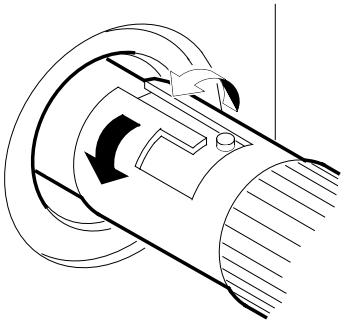
Connecting temporary fiber cable from an ENET to a PM (continued)

7 Disconnect the transmit connectors and receive connectors for the cable that has faults.

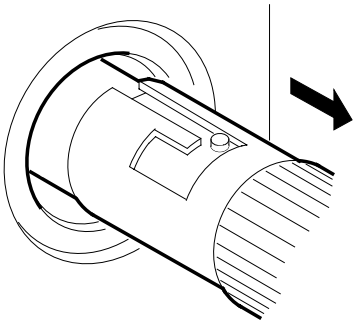
Grasp the sleeve with two fingers and carefully push the sleeve towards the frame.



Turn the connector counterclockwise until the connector pin is in the position shown right.



Carefully pull the connector away from the frame.



8 Place dust caps on the transmit and receive connectors of the fiber cable that has faults.

9 Create new labels for the temporary fiber cable, that contain the same information as those on the cable that has fault. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so that Nortel (Northern Telecom) personnel, who will replace the cable, can easily identify the cable.

Note that the label identifies the ENET shelf number, plane number, slot number, link number, and the signal type (transmit or receive). It also specifies the PM on which the fiber terminates.

Connecting temporary fiber cable from an ENET to a PM (continued)

Example of a label:

```
ENC0    00      39
10R     04      17T
LTE     000     18
22R     RX
```

Field descriptions:

ENC0
identifies the ENET plane, 0 or 1

00
identifies the cabinet number

39
identifies the ENET shelf by the base mounting position number

10R
identifies the slot number and position

(R for rear, F for front)

04
identifies the zone number

17T
identifies the link number and the signal type

(T for transmit, R for receive)

LTE
identifies the PM on which the cable terminates

000
identifies the PM frame number

18
identifies the PM shelf by the base mounting position number

22R
identifies the slot and position

(R for rear, F for front)

RX
identifies the signal type at the PM end

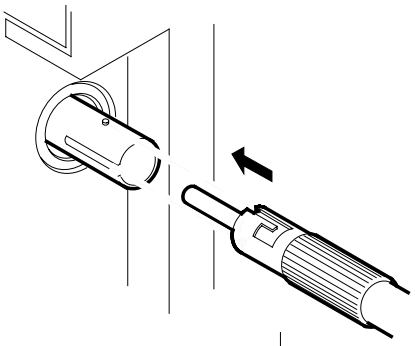
(RX for receive or TX for transmit)

10 Remove the dust caps on the transmit and receive connectors of the temporary fiber cable.

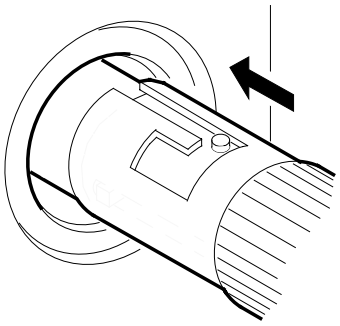
11 Connect the transmit and receive connectors to the ENET.

Connecting temporary fiber cable from an ENET to a PM (continued)

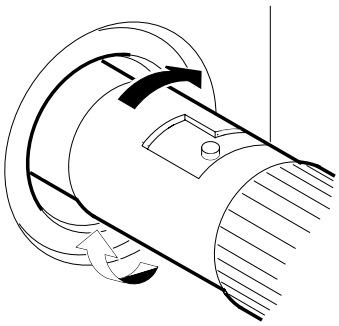
Align the connector pin and slot with the receptacle slot and pin respectively, as shown right.



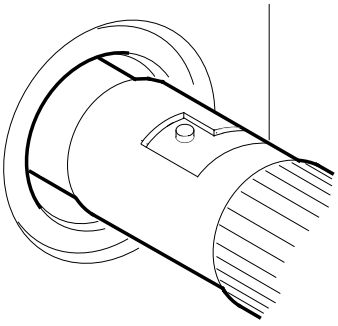
Carefully slide the connector into the receptacle.



Turn the connector clockwise to lock the connector in place.



Release the connector. The figure on the right shows the final connector position.



Connecting temporary fiber cable from an ENET to a PM (continued)

12 Run the temporary cable to the corresponding message switch. Use a direct route along the floor. Leave the cable that has faults in place. Nortel personnel remove the cable during installation of the replacement cable.

At the PM

13 Before you disconnect the link, make sure that you are at the correct PM.

Make sure that ENET plane 0 fiber cables terminate on unit 0 of a PM. Make sure that ENET plane 1 fiber cables terminate on unit 1 of a PM.

14 Disconnect the fiber cable that has faults from the correct NT6X40 card. Note that the top connector is the PM receive port and that the bottom connector is the PM transmit port.

15 Place dust caps on the transmit and receive connectors of the fiber cable that has faults.

16 Create new labels for the temporary fiber cable that contain the same information as those on the cable that has faults. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so that Nortel personnel, who will replace the cable, can identify the cable.

Example of a label:

```
LTE     000     18
22R     RX
ENC0    00      39
10R     04      17T
```

Field descriptions:

LTE
identifies the PM

000
identifies the PM frame number

18
identifies the PM shelf by the base mounting position number

22R
identifies the slot number and position

(R for rear, or F for front)

RX
identifies the signal type at the PM end

(RX for receive or TX for transmit)

ENC0
identifies the ENET plane, 0 or 1, on which the

cable terminates

00
identifies the cabinet number

39
identifies the ENET shelf by the base mounting

Connecting temporary fiber cable from an ENET to a PM (end)

position number

10R
identifies the slot number and position

(R for rear, or F for front)

04
identifies the zone number

17T
identifies the link number and the signal type

(T for transmit, R for receive)

17

WARNING
Avoid cross-connecting cables
Make sure that the cable that connects to the transmit port at the ENET connects to the receive port at the PM. Loss of service results when you connect the cables to transmit ports at each end.

Remove the dust caps on the transmit connectors and receive connectors of the temporary fiber cable. Connect the cables to the PM.

18 Return to the maintenance procedure that sent you to this procedure. Continue as directed.

Connecting temporary fiber cable from an ENET to an MS

Application

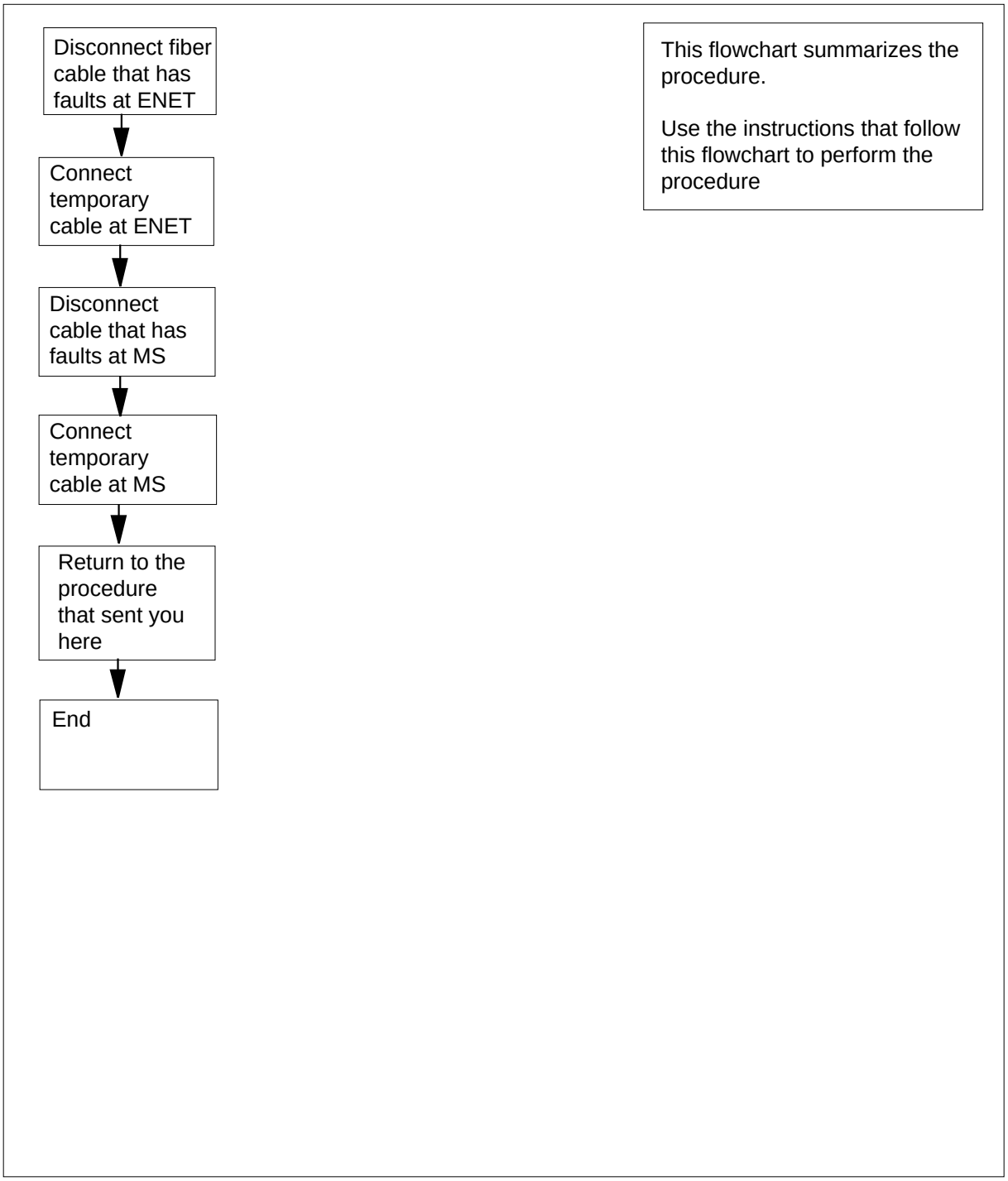
Use this procedure to connect a temporary fiber cable between the enhanced network (ENET) and the message switch (MS).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Connecting temporary fiber cable from an ENET to an MS (continued)

Summary of Connecting temporary fiber cable from an ENET to an MS



Connecting temporary fiber cable from an ENET to an MS (continued)

Connecting temporary fiber cable from an ENET to an MS

At the ENET

1

WARNING
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

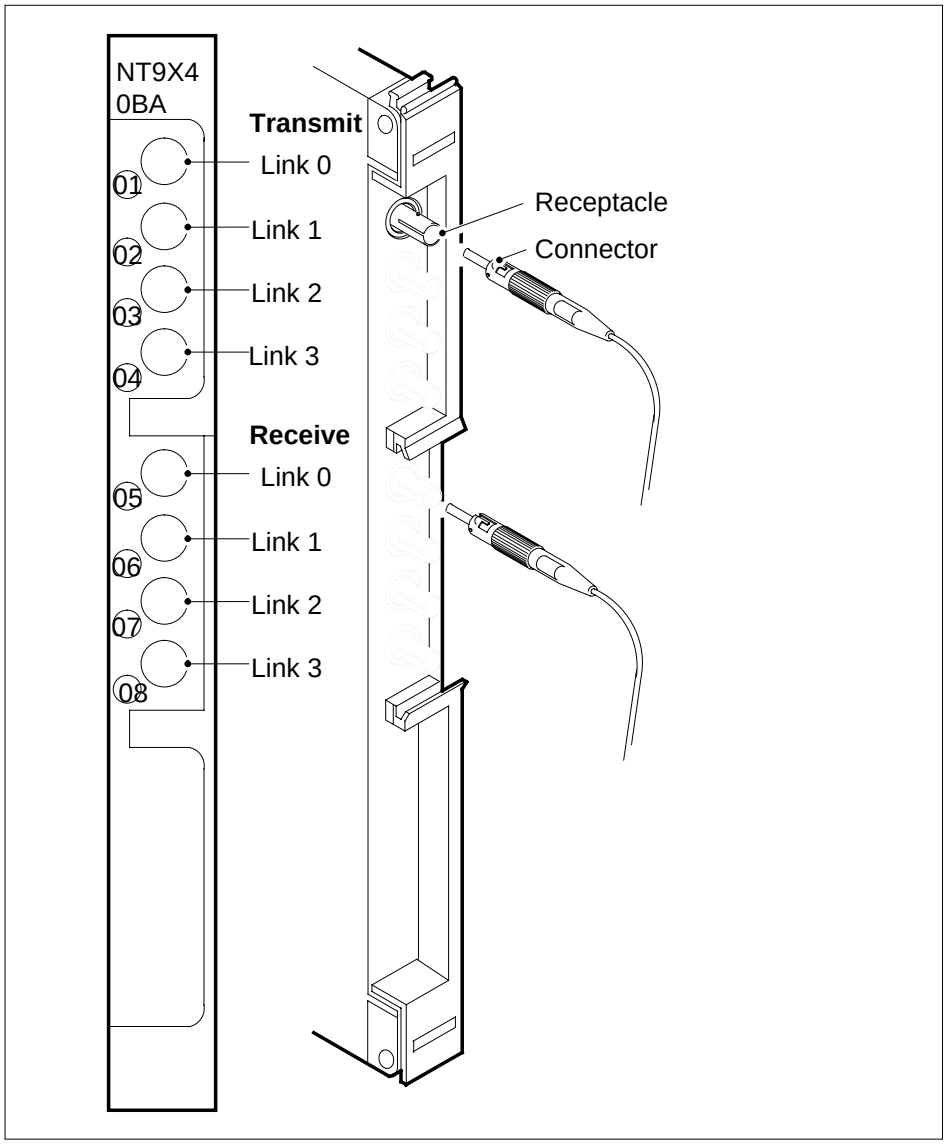
WARNING
Fiber cable can become damaged
Use caution when you handle fiber cables. Do not crimp or bend the cables to a radius of less than 30 mm (1.18 in.).

Obtain a spare fiber cable to use as a temporary connection between the ENET node and the MS.

2 Before you disconnect the link, make sure that you are at the correct ENET node (plane and shelf name). Make sure that you are at the correct interface card (slot). Note the zone number of the fiber cable that has faults.

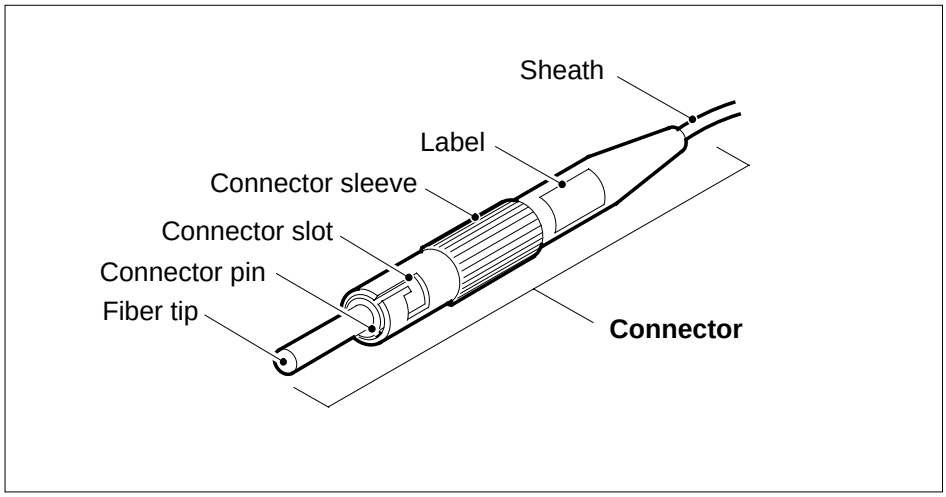
3 The following figure relates the zone numbers (01-08) that appear on the face of the card to the link numbers. The link numbers appear on the MAP display for the NT9X40BA interface card. Note the zone names for the transmit receptacle and receive receptacle.

Connecting temporary fiber cable from an ENET to an MS (continued)



4 The following diagram shows the type of connector used for fiber connections between an ENET and an MS.

Connecting temporary fiber cable from an ENET to an MS (continued)

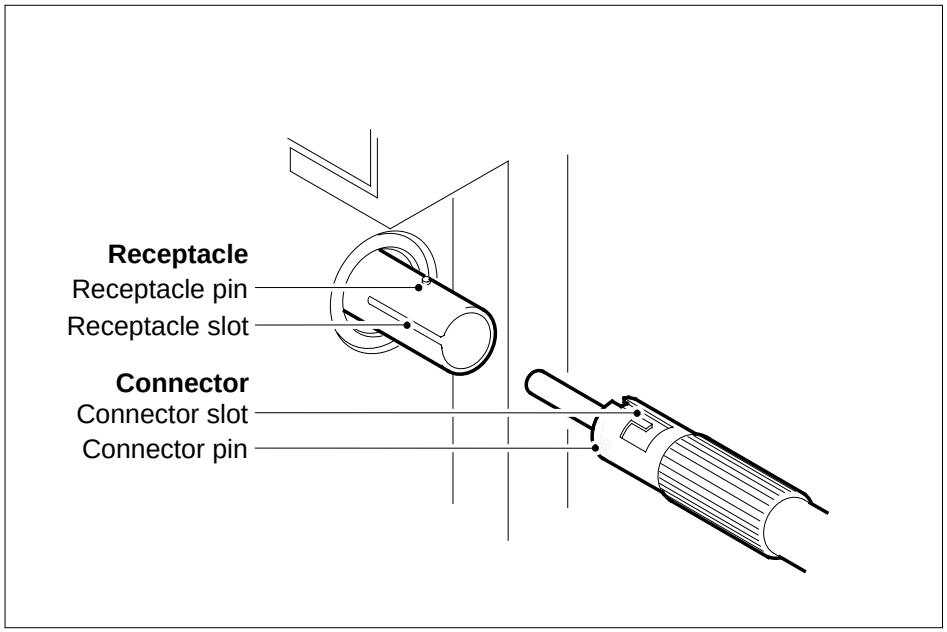


5

WARNING
Do not contaminate the fiber tip surface
Do not touch the tip of the fiber. Dirt and oil transferred from the skin to the fiber tip surface degrades fiber performance.

The following diagram shows the different parts of the connector and receptacle as referred to in this procedure.

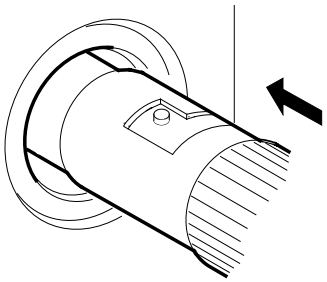
Connecting temporary fiber cable from an ENET to an MS (continued)



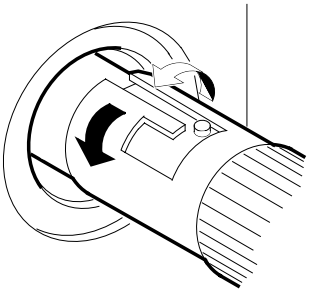
6 Disconnect the transmit and receive connectors for the cable that has faults.

Connecting temporary fiber cable from an ENET to an MS (continued)

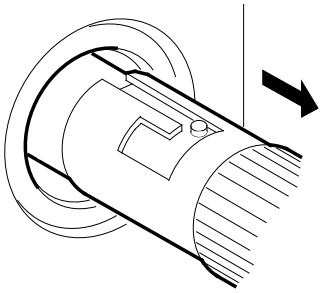
Grasp the sleeve with two fingers and carefully push the sleeve towards the frame.



Turn the connector counterclock-wise until the connector pin is in the position shown right.



Carefully pull the connector away from the frame.



7 Place dust caps on the transmit connectors and receive connectors of the fiber cable that has faults.

8 Create new labels that contain the same information as those on the cable that has faults for the temporary fiber cable. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so that Nortel personnel, who replace the cable, can identify the cable.

Make sure that the label identifies the ENET shelf number, plane number, slot number, link number. Make sure the label identifies the signal type, transmit or receive. The label should also specify the MS on which the fiber terminates.

Example of a label:

Connecting temporary fiber cable from an ENET to an MS (continued)

```
ENC0    00      39
10R     04      17T
LTE     000     18
22R     RX
```

Field descriptions:

ENC0
identifies the ENET plane, 0 or 1

00
identifies the cabinet number

39
identifies the ENET shelf by the base mounting position number

10R
identifies the slot number and position (R for rear, F for front)

04
identifies the zone number

17T
identifies the link number and the signal type (T for transmit, R for receive)

LTE
identifies the PM on which the cable terminates

000
identifies the PM frame number

18
identifies the PM shelf by the base mounting position number

22R
identifies the slot and position (R for rear, F for front)

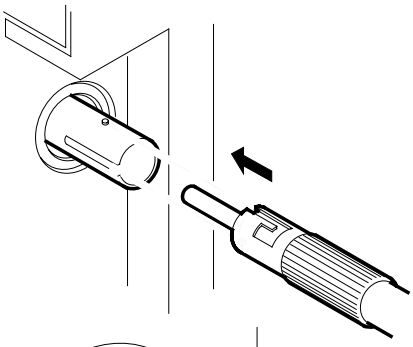
RX
identifies the signal type at the PM end (RX for receive or TX for transmit)

9 Remove the dust caps on the transmit and receive connectors of the temporary fiber cable.

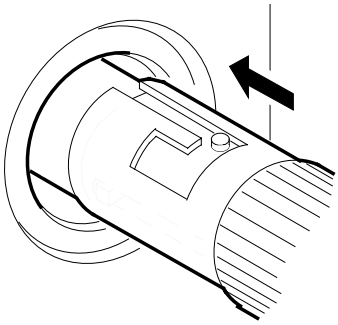
10 Connect the transmit and receive connectors to the ENET.

Connecting temporary fiber cable from an ENET to an MS (continued)

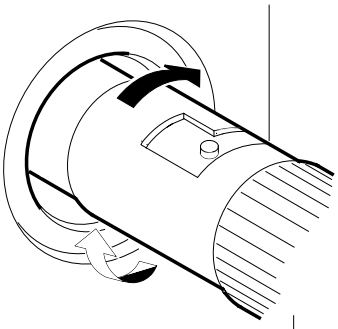
Align the connector pin and slot with the receptacle slot and pin respectively, as shown at right.



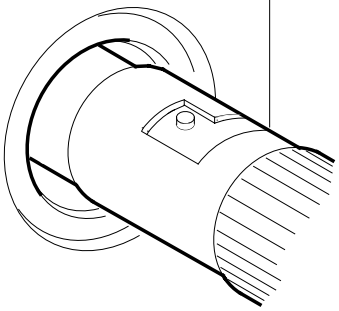
Carefully slide the connector into the receptacle.



Turn the connector clockwise to lock the connector in place.



Release the connector. The figure on the right shows the final connector position.



11 Run the temporary cable to the corresponding message switch. Use a direct route along the floor. Leave the cable that has faults in place. Northern Telecom personnel remove the cable during installation of the replacement cable.

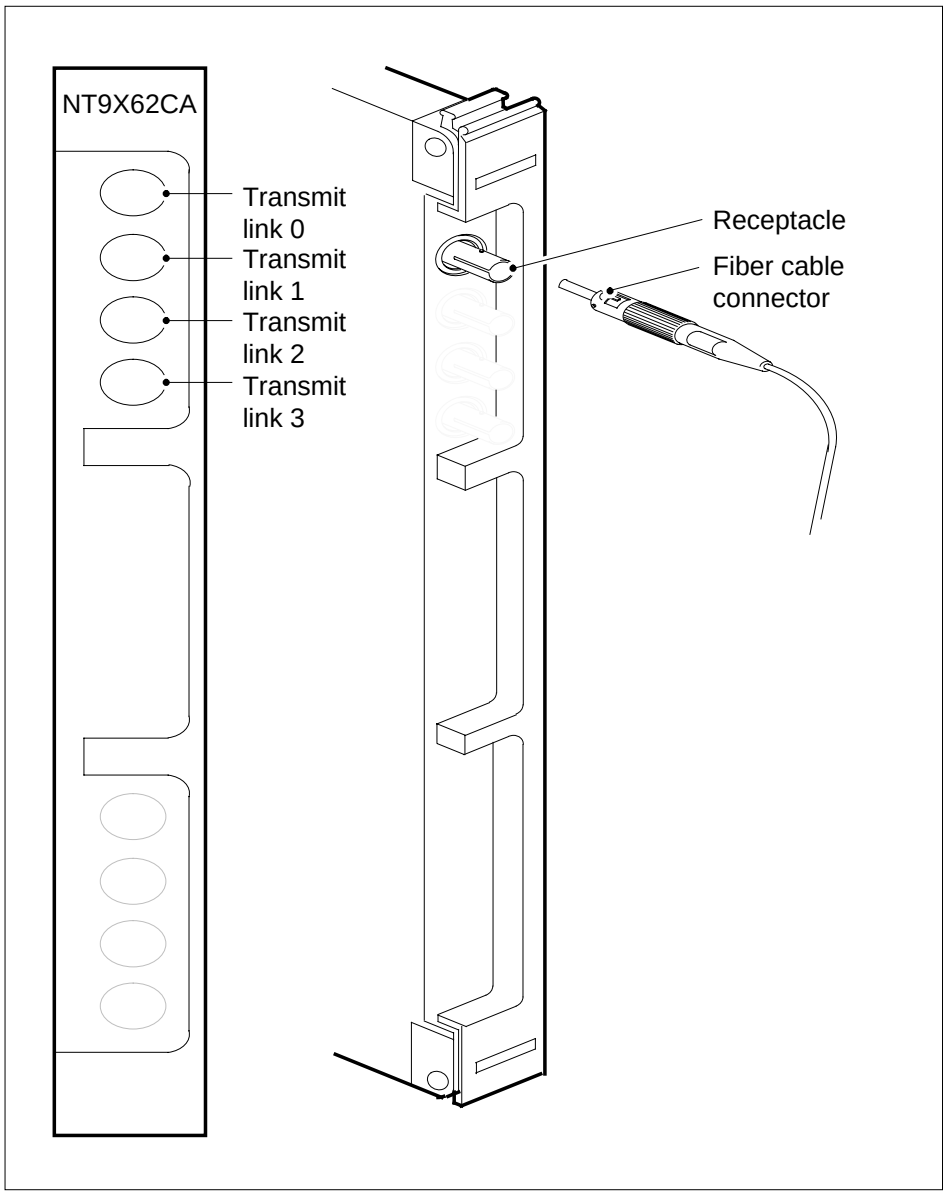
Connecting temporary fiber cable from an ENET to an MS (continued)

At the MS

12 Before you disconnect the link, make sure that you are at the correct message switch and the correct interface card (slot). Note the position of the fiber link that has faults.

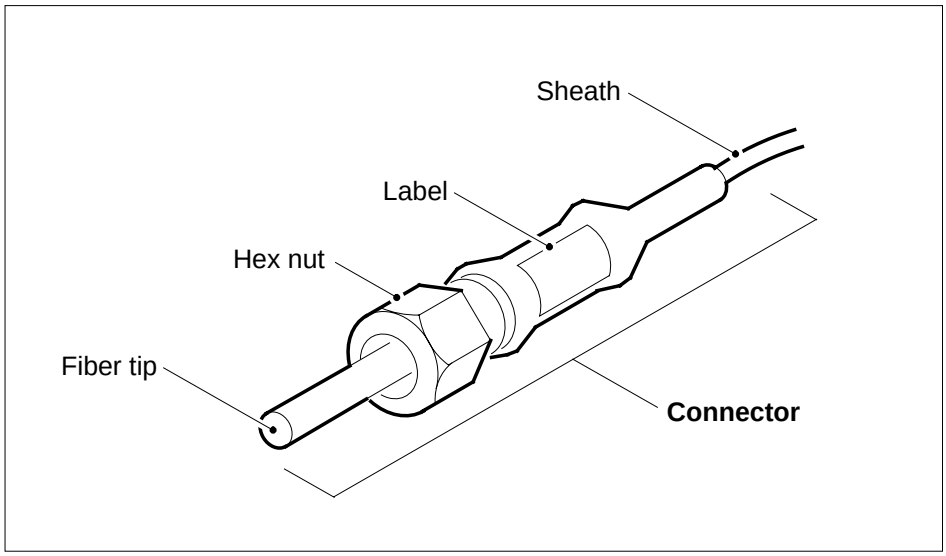
13 Create new labels that contain the same information as those on the cable that has faults for the temporary fiber cable. Attach the new labels to the temporary cable. Leave the labels on the cable that has faults so Nortel personnel who will replace the cable, can identify the cable.

14 The following figure shows the faceplate of the NT9X62CA interface card.



Connecting temporary fiber cable from an ENET to an MS (continued)

15 The following figure shows the type of connector used for fiber connections between an ENET and an MS.



16

WARNING
Do not contaminate the fiber tip surface
Do not touch the tip of the fiber. Dirt and oil transferred from the skin to the fiber tip surface degrades fiber performance.

Disconnect fiber cable that has faults from the correct NT9X62 card.

a Turn the hex nut counter-clockwise to loosen the connector.

b Unplug the connector.

17 Replace the dust caps on the transmit and receive connectors of the fiber cable that has faults.

18 Remove the dust caps on the transmit and receive connectors of the temporary fiber cable.

19

WARNING
Fiber cable can become damaged
Use caution when you handle fiber cables. Do not crimp or bend the cables to a radius of less than 30 mm (1.18 in.).

Connecting temporary fiber cable from an ENET to an MS (end)

Connect the temporary fiber cable to the MS.

a Align the fiber tip with the receptacle hole.

b Carefully slide the connector into the receptacle.

c Turn the hex nut clockwise to secure the connector in place.

20 Return to the maintenance procedure that sent you to this procedure. Continue as directed.

Correcting a load mismatch

Application

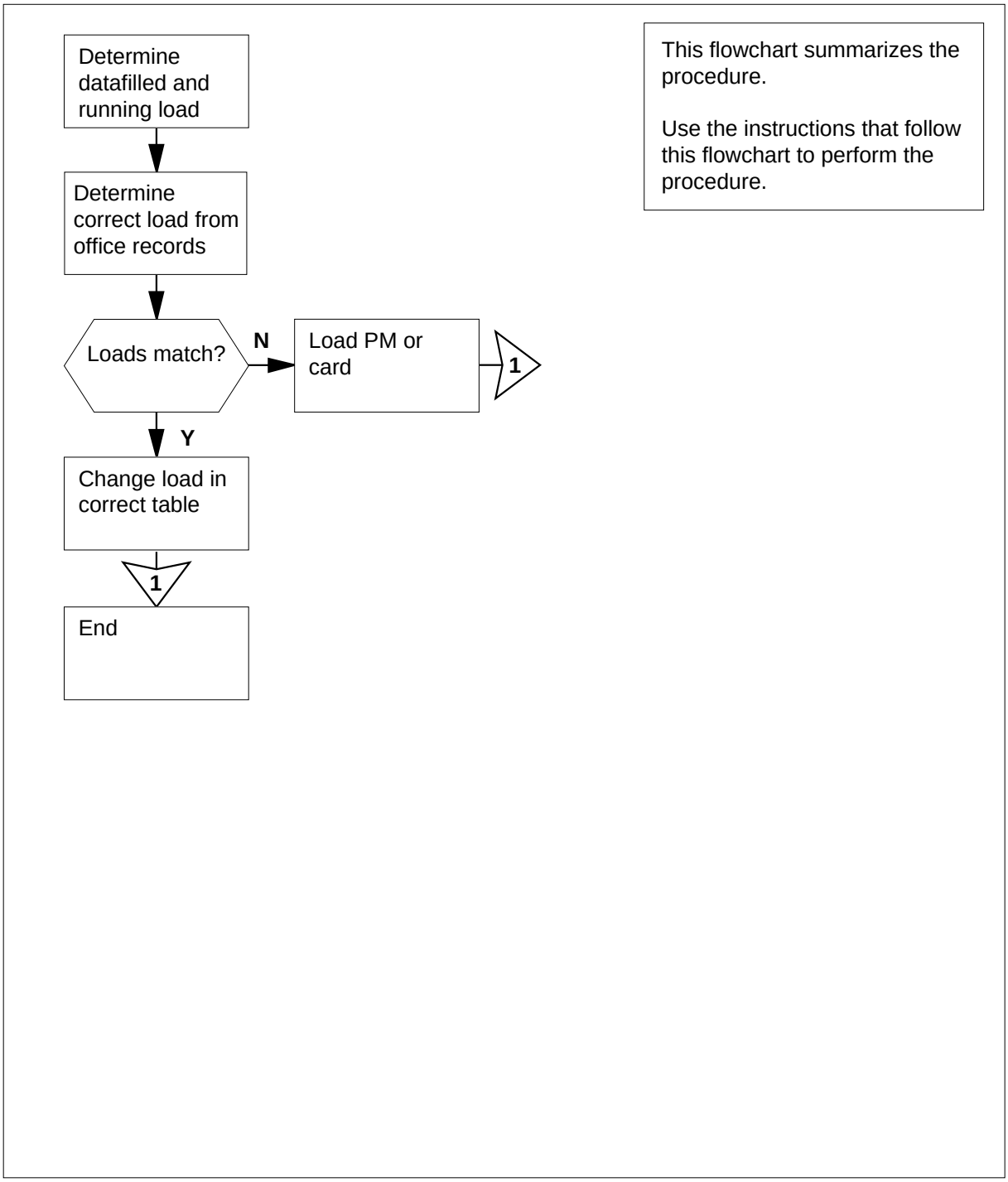
Use this procedure to match the software load with the specified datafilled load. The software load runs on a PM, a signaling terminal controller (STC) or a CLASS modem resource (CMR) card.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Correcting a load mismatch (continued)

Summary of Correcting a load mismatch



Correcting a load mismatch

At your current location

1

CAUTION
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur

Follow the correct procedure. The procedure depends on the type of load mismatch.

If the load mismatch	Do
is a PM or a CMR card load	step 2
is an STC load	step 42

2 Determine the state of the PM unit in the procedure that sent you here.

If the PM unit state	Do
is ISTb or InSv	step 8
is other than listed here	step 3

3 To access the correct PM inventory table, type

`>TABLE xxxINV`

and press the Enter key.

where

xxx
is the specific PM node type (for example, LTC, MSB)

Note: Table LTCINV also applies to PM types LGC, DTC, and PDTC. Table MSBINV applies to both the MSB6 and the MSB7 and to the STCs. Table STCINV also applies to STC.

4 To position on the datafill tuple for the posted PM, type

`>POSITION pm_type pm_no`

and press the Enter key.

where

pm_type
is the type of PM (for example, DTC, LGC, MSB6, or PDTC)

Correcting a load mismatch (continued)

pm_no
is the number of the PM (0 to 2047)

Example of a MAP response:

```
DTC  0
     1002  DTE  0  18  0  B  6 6X02AA  NDT34AB
                               (  ABTRK  DTCEX)$
(2 0)(2 16)(2 32)(2 48)(2 17)(2 49)(2 1)(2 33)(2 2)(2 50)(2 34)
(2 18)(2 35)(2 19)(2 3)(2 51) $
    (CONTINUITY)(UTR16)(TONE6X79)(MSG6X69)(CMR13 CMRAG03)$
NORTHAM        6X45BA  6X45BA
                    XPMRGA02
6X40AA                                  (CCS7)$
```

Note: In this example from table LTCINV, the software load name in field LOAD is NDT34AB. The optional CMR card in field OPTCARD is CMR13 and the load name in field CMRLOAD is CMRAG03. The card PEC in field PECS6X45 is 6X45BA. The firmware load name in field E2LOAD is XPMRGA02.

5 Record the load name in the field LOAD. If the PEC in field PEC6X45 is MX77, record the firmware LOADNAME in field E2LOAD.

6 To exit the inventory table, type

>QUIT

and press the Enter key.

7 Go to step 10.

8 To determine the load that runs on the PM or the CMR card, type

>QUERYPM CNTRS

and press the Enter key.

Example of a MAP response:

```
Unsolicited MSG limit = 250, Unit 0 = 2, Unit 1 = 0
Unit 0:
Ram Load: NDT34AB
Rom Load: XPMRGA02
CMRLOAD: CMRAG03
Unit 1:
Ram Load: NDT34AB
Rom Load: XPMRGA02
CMRLOAD: CMRAG03
```

Note: In this example for an LGC, the load that runs on each of the LGC units appears beside the header Ram Load. In this example, the load that runs is NDT34AB. The firmware load that runs on each of the LGC units appears beside the header Rom Load. In this example, the firmware load that runs is XPMRGA02. The load that runs on the CMR card in each unit appears beside the header CMRLOAD. In this example, the load on the CMR is CMRAG03.

9 Record the software and firmware loads that run on the PM or the CMR card.

Correcting a load mismatch (continued)

10 Determine from office records the correct loadname.

If the loadname from office records	Do
match the load datafilled for the PM or the CMR card	step 11
match the load that runs on the PM or the CMR card	step 16

11 Proceed as follows if you are working on a PM or a CMR card.

If you	Do
are working on a PM	step 12
are working on a CMR card	step 14

12 To load the PM unit, type

`>LOADPM UNIT unit_no`

and press the Enter key.

where

unit_no
is the PM unit (0 or 1)

If the LOADPM command	Do
passed	step 13
failed	step 15

13 To return the PM unit to service, type

`>RTS UNIT unit_no`

and press the Enter key.

where

unit_no
is the PM unit (0 or 1)

If the RTS command	Do
passed	step 64
failed	step 63

14 To load the CMR card, type

`>LOADPM UNIT unit_no CMR`

and press the Enter key.

Correcting a load mismatch (continued)

where

unit_no
is the PM unit (0 or 1)

If the LOADPM command	Do
passed	step 64
failed	step 15

15 Perform the procedure *How to load a PM* in this document. Complete the procedure and return to this point.

16 To access the correct PM inventory table, type

>TABLE xxxINV

and press the Enter key.

where

xxx
is the specific PM node type (for example, LTC, MSB)

Note: Table LTCINV also applies to PM types LGC, DTC, and PDTC. Table MSBINV applies to both the MSB6 and the MSB7 and to the STCs. Table STCINV also applies to STC.

17 To position on the datafill tuple for the posted PM, type

>POSITION pm_type pm_no

and press the Enter key.

where

pm_type
is the type of PM (for example, DTC, LGC, MSB6, or PDTC)

pm_no
is the number of the PM (0 to 2047)

If the load to change	Do
is for the CMR card	step 18
is for the PM	step 21

18 To change the datafilled load so that the card datafill matches the LOADNAME that runs on the card, type

>CHANGE OPTCARD

and press the Enter key.

Example of a MAP response:

```
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
```

19 To confirm the command, type

>Y

Correcting a load mismatch (continued)

and press the Enter key.

Example of a MAP response:

```
CMRLOAD: CMRAG02
```

Note: To change the load of the CMR card, press the Enter key until field CMRLOAD appears.

20 Go to step 23 to enter the correct loadname for the CMR card.

21 To change the datafilled load so that the PM datafill and the LOADNAME that runs on the PM match, type

>CHANGE LOAD

and press the Enter key.

Example of a MAP response:

```
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
```

22 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
LOAD: NDT33CA
```

23 To enter the correct load name, type

>load_name

and press the Enter key.

where

load_name
is the name of the load that runs on the PM or CMR card,

that you recorded in step 5 or step 9

Example input:

>NDT34AB

and press the Enter key.

Example of a MAP response:

```
TUPLE TO BE CHANGED:
LGC 0
   LGE 0 18 0 B 1 6X02AA NDT34AB

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

Note: The whole MAP prompt does not appear in this example.

Correcting a load mismatch (continued)

24 To confirm the command, type

>Y

and press the Enter key.

If the MAP response	Do
`is TUPLE CHANGED`	step 64
`is Field_name file is not datafilled in table PMLOADS`	step 25

25 To reject the entry change, type

>N

and press the Enter key.

26 To exit the PM inventory table, type

>QUIT

and press the Enter key.

27 To access the disk utility, type

>DISKUT

and press the Enter key.

Note: The command DISKUT applies to a SuperNode front end. For an NT40 front end, the command is DSKUT.

28 To confirm that the load file that you recorded in step 10 is in your user directory, type

>LISTFL file_name

and press the Enter key.

where

file_name
is the name of the storage device from office records

Note: The command LISTFL file_name applies to a SuperNode front end. For an NT40 front end, the command is LISTVOL vol_name.

29 To exit the disk utility, type

>QUIT

and press the Enter key.

30 Determine if the device specified for the PM load file matches the office records from step 10.

If the device name	Do
does not match	step 63
matches	step 31

Correcting a load mismatch (continued)

31 To access table PMLOADS, type

>TABLE PMLOADS

and press the Enter key.

32 To add the new file name to table PMLOADS, type

>ADD new_file_name

and press the Enter key.

where

new_file_name
is the file name

Example input:

>ADD ARC37CJ

and press the Enter key.

Note: The file name must start with a letter.

Example of a MAP prompt:

```
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
```

33 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
ACTFILE:
```

34 To enter the name of the loadfile, type

>actfile

and press the Enter key.

where

actfile
is the name of the loadfile.

Example input:

>ARC37CJ

and press the Enter key.

Example of a MAP response:

```
ACTVOL:
```

35 To enter the name of the storage device that contains the loadfile from step 28, type

>actvol

and press the Enter key.

where

Correcting a load mismatch (continued)

actval
is the name of the storage device

Example input:

>S00DVOL1

and press the Enter key.

Example of a MAP response:

```
BKPFILE:
```

36 To enter the name of the backup loadfile, type

>bkpfile

and press the Enter key.

where

bkpfile
is the name of the backup loadfile and must be identical to the

name that you entered in step 34.

Example input:

>ARC37CJ

and press the Enter key.

Example of a MAP response:

```
BKPVOL:
```

37 To enter the name of the storage device that contains the backup loadfile, type

>bkpvol

and press the Enter key.

where

bkpval
is the name of the storage device

Example input:

>S00DVOL1

Example of a MAP response:

```
UPDACT:
```

38 To enter the automatic loadfile name update confirmation, type

>updact

and press the Enter key.

where

updact
is if the system must update loadfile name automatically

Correcting a load mismatch (continued)

(Y or N)

Example input:

>Y

Example of a MAP response:

```
TUPLE TO BE ADDED:
           ARC37CJ
           ARC37CJ            S00DVOL1
           ARC37CJ            S00DVOL1         Y

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

39 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
TUPLE ADDED
```

40 To exit table PMLOADS, type

>QUIT

and press the Enter key.

41 Repeat steps 16 to 24. Complete the steps and return to this point.

42 To determine the load datafilled for the STC, type

>QUERYPM

and press the Enter key.

Example of a MAP response:

```
PM Type: MSB7 PM No.: 0 PM Int. No.: 0 Node_No.: 59
PMs Equipped: 56 Loadname: MC7XB01
STCLOADS in MSBINV table: M7CQA01
```

Note: The load datafilled for the STC appears next to STCLOADS. In this example the load is M7CQA01.

43 Determine from office records the correct STC load.

If the loadname from office records	Do
matches the datafilled load	step 59
does not match the datafilled load	step 44

Correcting a load mismatch (continued)

44 To access table MSBINV, type

>TABLE MSBINV

and press the Enter key.

45 To position on the datafill tuple for the MSB, type

>POSITION MSBx msb_no

and press the Enter key.

where

x
is the type of MSB (6 or 7)

msb_no
is the number of the MSB (0 to 2049)

Example input:

>POSITION MSB7 0

Example of a MAP response:

```
MSB7 0
  MS7E 0 18 0 C 2 6X32AA MC734CA
              (1 0) 1 8) 1 16) 1 24)$
                            (C7)$
         (M7CLA01)$
                          (MSG6X69)$
     6X45AE 6X45AE
```

46 To change the datafilled load for the STC to match the load obtained from office records, type

>CHANGE STCLOADS

and press the Enter key.

Example of a MAP response:

```
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
```

47 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
STCLOAD: M7CLA01
```

48 To enter the correct load name, type

>stc_loadname

and press the Enter key.

where

Correcting a load mismatch (continued)

stc_loadname
is the name of the STC load from office records

Example input:

>M7CQA01

Example of a MAP prompt:

```
STCLOADS:
```

49 To close the STCLOADS field, type

> $

and press the Enter key.

Note: Enter a space before the $ character.

Example of a MAP response:

```
TUPLE TO BE CHANGED:
MSB7 0
  MS7E 0 18 0 C 2 6X32AA MC734CA
             (1 0) 1 8) 1 16) 1 24)$
                           (C7)$
        (M7CQA01)$
                          (MSG6X69)$
     6X45AE 6X45AE

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

50 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
 TUPLE CHANGED
```

51 To exit table MSBINV, type

>QUIT

and press the Enter key.

52 To access table STINV, type

>TABLE STINV

and press the Enter key.

53 To position on the datafill tuple for the ST, type

>POSITION st_no

and press the Enter key.

where

Correcting a load mismatch (continued)

st_no
is the number of the MSB (0 to 1023)

Example input:

>POSITION 100

54 To change the datafilled load for the STC to match the load that you obtained from office records, type

>CHANGE LOAD

and press the Enter key.

Example of a MAP prompt:

```
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
```

55 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
LOAD: M7CJA01
```

56 To enter the correct load name, type

>stc_loadname

and press the Enter key.

where

stc_loadname
is the name of the STC load from office records

Example of a MAP response:

```
TUPLE TO BE CHANGED:
 100    MSB7    0    0     0 6X66AA  M7CQA01  C7   4
             MSB  0  1 56K

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

57 To confirm the command, type

>Y

and press the Enter key.

Example of a MAP response:

```
TUPLE CHANGED
```

58 To exit table STINV, type

>QUIT

and press the Enter key.

Correcting a load mismatch (end)

59 To determine if the MSB units contain any STC loads, type

`>STCLOAD UNIT unit_no QUERY`

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or 1)

If the response	Do
is MSBx msb_no unit_no does not contain any STC Loads	step 60
is MSBx msb_no unit_no contains STC Loads: stc_loadname OK	step 64

60 To add the STC load that you determined in step 43 to the MSB unit, type

`>STCLOAD UNIT unit_no A stc_loadname`

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or 1)

stc_loadname
is the name of the STC load

If the response	Do
is STC load load_name added to MSBx msb_no unit unit_no	step 64
is Load File Not In Directory	step 61

61 Perform the procedure *Loading a PM* in this document. Complete the procedure and return to this point.

62 Go to step 60.

63 For additional help, contact the next level of support.

64 The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Deallocating a volume

Application

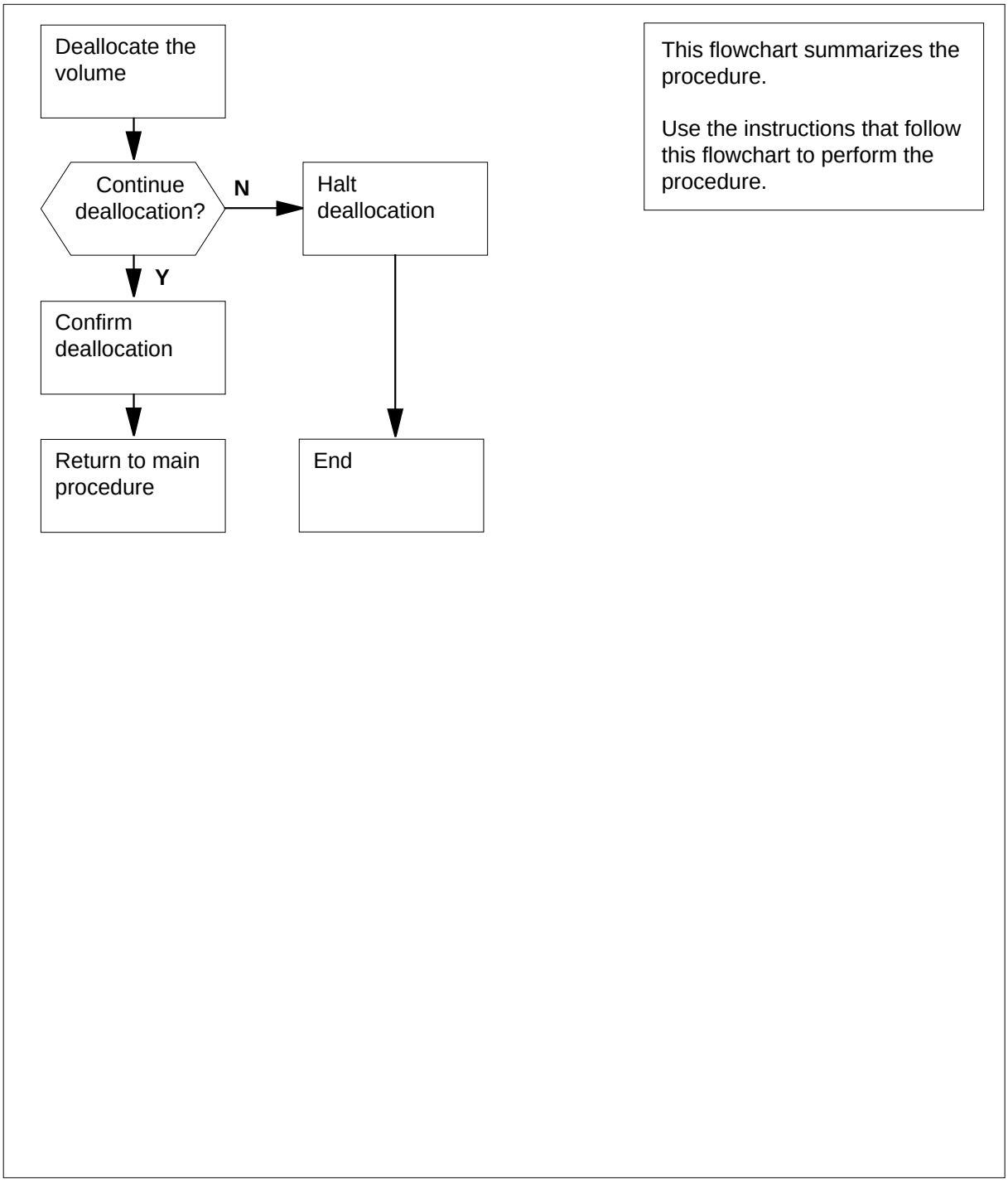
Use this procedure to deallocate a volume.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Deallocating a volume (continued)

Summary of Deallocating a volume



Deallocating a volume (continued)

Deallocating a volume

At the MAP terminal

1

DANGER
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

To deallocate the full volume, type

>DMNT ssys vol_name

and press the Enter key.

where

ssys
is the subsystem

vol_name
is the volume name

Example of a MAP display:

```
UPDATING VOLUME INFORMATION FOR vol_name:  VOLUME nn IN
REGULAR POOL n, pool_name
PLEASE CONFIRM (”YES” OR ”NO”):
```

2 Determine if you want to continue with the volume deallocation.

If you	Do
want to continue	step 5
do not want to continue	step 3

3 To halt the deallocation, type

>NO

and press the Enter key.

4 You decided not to complete this alarm clearing procedure. Go to the next procedure.

5 To confirm the deallocation, type

>YES

and press the Enter key.

Deallocating a volume (end)

Example of a MAP:

```
REGULAR VOLUME vol_name ALLOCATED.
```

6 The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Failure to switch clock mastership

Application

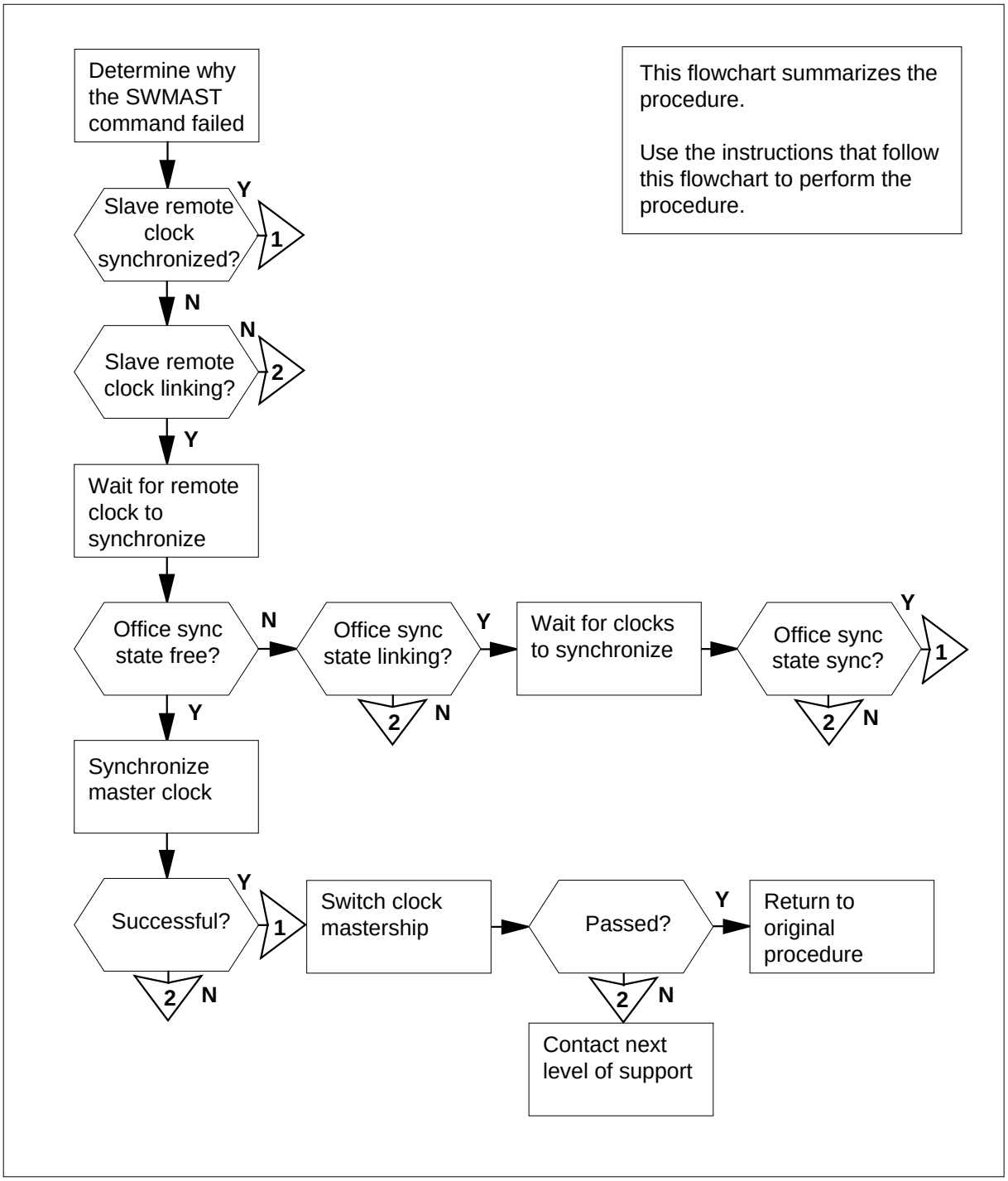
Use this procedure to clear a failure to switch clock mastership.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Failure to switch clock mastership (continued)

Summary of Failure to switch clock mastership



Failure to switch clock mastership (continued)

Failure to switch clock mastership alarm

DANGER
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

At the MAP display

1 Determine why the switch of mastership failed.

If the response	Do
is SWMAST not allowed, slave MS not remote SYNCed	step 2
is SWMAST not allowed, slave MS has serious clock faults	step 22
is SWMAST not allowed, mate MS is OOS	step 23
is other than listed here	step 24

2 To access the MS level of the MAPdisplay, type

>MAPCI;MTC;MS

and press the Enter key.

Example of a MAP display:

```
Message Switch   Clock  Shelf 0  Inter-MS Link 0 1
MS 0        .          M Free     .                . .
MS 1        .          Slave      .                . .
```

3 Determine the MS that is the slave MS.

Note: In the example in step 2, the slave MS is MS 1.

4 To access the Clock level of the MAP display, type

>CLOCK

and press the Enter key.

Example of a MAP display:

Failure to switch clock mastership (continued)

```
Card 02 Alm Int  %Adj Src Rem  %Adj Src | Car Stat Sp PM     CCT
MS 0  .  .  Syn +00.7 Rm0 Fr  +03.1 Lk0 | Lk0 Lck   0 DTC 002 02
MS 1  .  .  Syn +01.3 In0 Syn –02.7 In0 | Lk0 Smp   0 DTC 001 02
Links slipping:      4 out of 10276
```

5 Determine the state of the slave remote clock.

Note: The state of the slave remote clock appears on the right of the slave MS under the Rem header. In the example in step 4, the state of the slave remote clock is Syn.

If the state of the slave remote clock	Do
is Fr	step 6
is LKg	step 8
is Syn	step 21

6 To perform an in-service test on the clock card of the slave message switch (MS), type

>TST ms_number

and press the Enter key.

where

ms_number
is the number of the slave MS (0 or 1)

If the TST command	Do
passed, or passed with Istb	step 7
failed	step 23

7 Determine the state of the slave remote clock.

If the state of the slave remote clock	Do
is LKg	step 8
is Fr	step 10
is Syn	step 21

8 Wait until the slave remote clock stops linking and synchronizes. Continue the procedure.

Note: Allow up to 30 min for the slave remote clock to synchronize.

Failure to switch clock mastership (continued)

9 Determine if the CM is in sync.

If the state of the slave remote clock	Do
is Fr	step 10
is Syn	step 21
is LKg	step 24

10 To determine the office sync state of the clocks, type

>QUERYCK

and press the Enter key.

Note: The office sync state appears on the right of the Office SYNC state header.

Example of a MAP response:

```
Office SYNC state = LKng
Clock type = Stratum 2.5
Office configuration = Master External Office
External Frequency = fl0000
External Select = Analog
External Termination = 50ohm
External Alarm = Minor
Master Clock = MS0
Remote Clock Configuration = reference
MS0 Clock Alarms: REM EXT
MS1 Clock Alarms: none  ...
```

If the office sync state	Do
is Free	step 11
is LKng	step 15
is Sync	step 21

11 To start the synchronization of the master clock, type

>SYNC

and press the Enter key.

Example of a MAP response:

Failure to switch clock mastership (continued)

```
Request to TEST INSV MS: 0 Shelf:0 Card:2 submitted.
Request to TEST INSV MS: 0 Shelf:0 Card:2 passed.
Request to TEST INSV MS: 1 Shelf:0 Card:2 submitted.
Request to TEST INSV MS: 1 Shelf:0 Card:2 passed.
Request to Synchronize clock 0: submitted.
Request to Synchronize clock 0: passed.
Clock synchronization started ...
```

If the in-service test	Do
passed, and the response is `Clock synchronization started ...`	step 13
passed with `Istb`, the system generated a card list, and the response is `Clock synchronization started ...`	step 13
passed or passed with `Istb`, the response is `Request to Synchronize Clock 0: failed`, and the system returns an error response	step 17
passed, and the responses are `Warning: Master clock has a faulty remote` and `Clock synchronization started ...`	step 12
failed, the response is `Request to Synchronize Clock 0: failed`, and the system returns an error response	step 17
failed, and the system generated a card list	step 24

12 To determine if the Rem alarm is present, type

>QUERYCK

and press the Enter key.

Note: A Rem alarm appears on the right of the MS0 or MS1 Clock Alarms field.

Example of a MAP response:

Failure to switch clock mastership (continued)

```
Office SYNC state = LKng
Clock type = Stratum 2.5
Office configuration = Master External Office
External Frequency = fl0000
External Select = Analog
External Termination = 50ohm
External Alarm = Minor
Master Clock = MS0
Remote Clock Configuration = reference
MS0 Clock Alarms: none
MS1 Clock Alarms: Rem  ...
```

If the Rem alarm	Do
is present	step 24
is not present	step 14

13 To access the clock status information, type

>QUERYCK

and press the Enter key.

Example of a MAP response:

```
Office SYNC state = LKng
Clock type = Stratum 2.5
Office configuration = Master External Office
External Frequency = fl0000
External Select = Analog
External Termination = 50ohm
External Alarm = Minor
Master Clock = MS0
Remote Clock Configuration = reference
MS0 Clock Alarms: none
MS1 Clock Alarms: Rem  ...
```

14 Determine the office sync state of the clocks.

If the office sync state	Do
is LKng	step 15
is Sync	step 21
is Free	step 24

15 Wait for the clock to synchronize with the timing source. Continue the procedure.

Note: Allow up to 2h for the clock to synchronize with the timing source.

Failure to switch clock mastership (continued)

16 To determine if the clocks synchronize, type

>QUERYCK

and press the Enter key.

If the office sync state	Do
is Sync	step 21
is LKng or Free	step 24

17 Your next step depends on the error response that the system returned.

If the response	Do
is Currently no master clock. Re-attempt command in 10 seconds	step 18
is Clock is already syncing	step 19
is Clock must be Free running in Master-Internal Offices	step 24
is Data mismatch between the CM and MS 0/1	step 24
is Master clock has no remote reference	step 24
is Carriers are not inservice	step 24
is No external reference link available	step 24
is Master stratum1 alarm 0/1 present and SYNCLK table EXTALARM MAJOR	step 24

18 Wait 10s and continue the procedure.

Go to step 11.

19 Wait for the clock to synchronize with the timing source. Continue the procedure.

Note: Allow up to 2 h for the clock to synchronize with the timing source.

20 To determine if the clocks synchronized, type

>QUERYCK

and press the Enter key.

If the office sync state	Do
is Sync	step 21

Failure to switch clock mastership (end)

If the office sync state	Do
is LKng or Free	step 24

21 To switch clock mastership, type

>SWMAST

and press the Enter key.

Example of a MAP response:

```
Request to Switch Clock Mastership MS: 0 submitted.
Request to Switch Clock Mastership MS: 0 passed.
```

If the SWMAST command	Do
passed	step 25
failed	step 24

22 Perform the procedure *Clearing an MS CLOCK major alarm* in this document.

23 Perform the procedure *Clearing an MS SysB major alarm* in this document.

24 For additional help, contact the next level of support.

25 Return to the maintenance procedure that sent you to this procedure. Continue as directed.

Loading a PM

Application

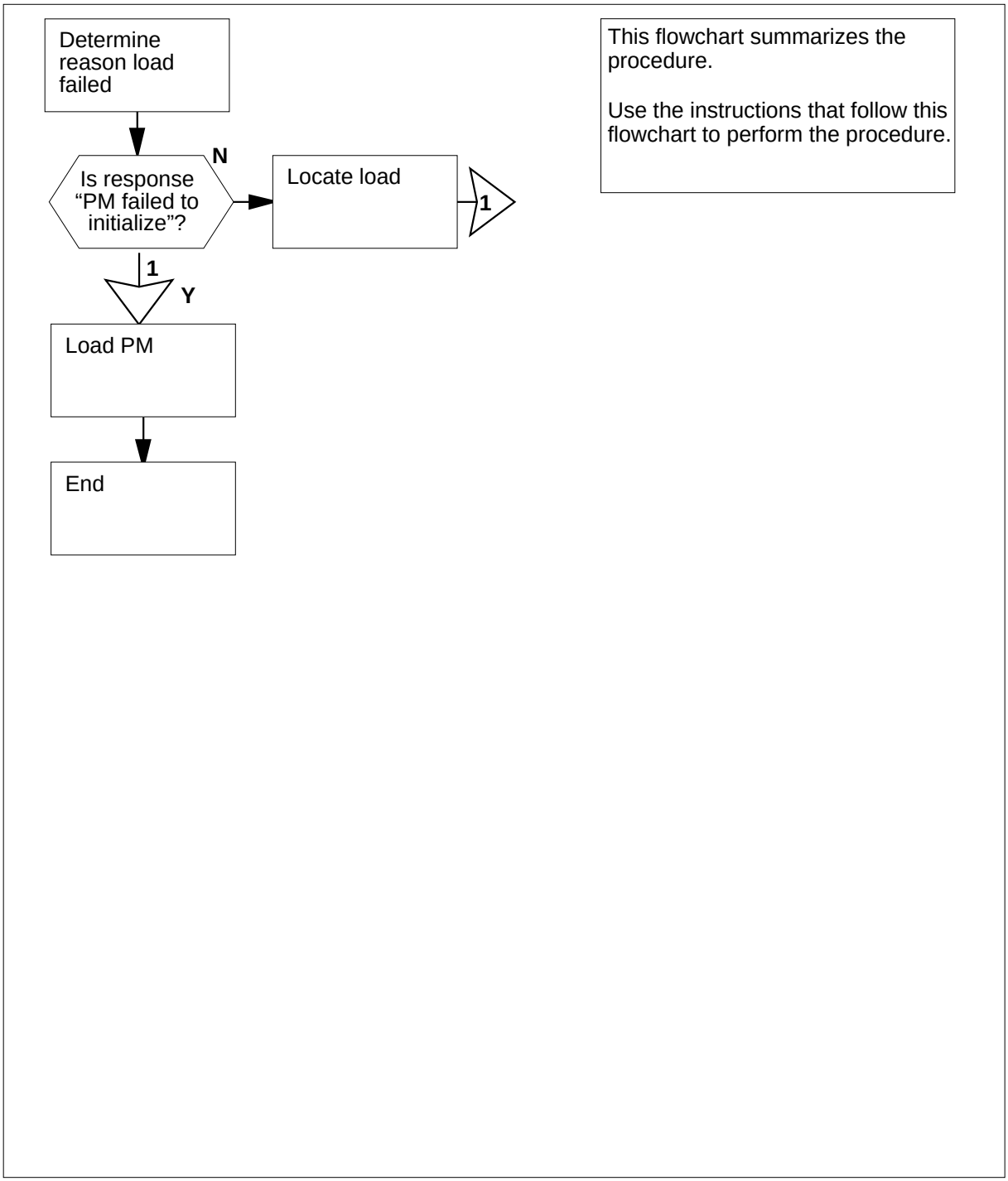
Use this procedure to load a PM after a failure of the command LOADPM.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Loading a PM (continued)

Summary of Loading a PM



Loading a PM (continued)

Loading a PM

At your current location

1

CAUTION
Possible loss of service
Perform this procedure during periods of low traffic to avoid loss of service or service degradation.

Proceed only if a step in a maintenance procedure directed to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

2 Follow the correct procedure according to the reason that the load attempt failed.

If the load failed and	Do
the MAP response is `Load File not in directory`	step 7
the MAP response is `PM Failed to Initialize`	step 3
the system generates a card list	step 4
the MAP response is other than listed here	step 32

3 Go to step 25 to apply the LOADPM command again.

4 Record the location, description, slot number, product engineering code (PEC) and PEC suffix of the cards on the list.

5 Perform the correct procedure in *Card Replacement Procedures* to change the first card on the list. Complete the procedure and return to this point.

6 Go to step 25.

7 Determine from office records the type of device that contains the PM load files.

If the load files	Do
are on tape	step 8
are on IOC disk	step 15
are on SLM disk	step 20

Loading a PM (continued)

8 Locate the tape that contains the PM load files.

At the MTD

9 Mount the tape on a magnetic tape drive.

At the MAP display

10 To mount the tape, type

>MOUNT tape_no

and press the Enter key.

where

tape_no
is the number of the tape drive that contains the PM load files

Example input:

>MOUNT 1

11 To list the contents of the tape in the user directory, type

>LIST Ttape_no

and press the Enter key.

where

tape_no
is the number of the tape drive

Example input:

>LIST T1

12 To demount the tape, type

>DEMOUNT Ttape_no

and press the Enter key.

where

tape_no
is the number of the tape drive

Example input:

>DEMOUNT T1

At the MTD

13 Remove the tape from the magnetic tape drive.

At the MAP

14 Go to step 25.

15 Determine from office records the input/output controller (IOC) disk and volume number that contains the PM load files.

16 To access the disk utility level, type

>DISKUT

Loading a PM (continued)

and press the Enter key.

Note: The command DISKUT applies to a SuperNode front end. For an NT40 front end, the command is DSKUT.

17 To confirm that the PM load files that you recorded in step 7 are in your user directory, type

```
>LISTFL  file_name
```

and press the Enter key.

Note: The command LISTFL file_name applies to a SuperNode front end. For an NT40 front end, the command is LISTVOL vol_name.

where

file_name
is the name of the volume that contains the PM load files

18 To exit the disk utility, type

```
>QUIT
```

and press the Enter key.

19 Go to step 24.

20 Determine from office records the system load module (SLM) disk and volume number that contains the PM load files.

21 To access the disk utility level, type

```
>DISKUT
```

and press the Enter key.

22 To confirm that the PM load files that you recorded in step 7 are in your user directory, type

```
>LISTFL  file_name
```

and press the Enter key.

where

file_name
is the name of the volume that contains the PM load files

23 To exit the disk utility, type

```
>QUIT
```

and press the Enter key.

24 Determine if the device specified for the PM load files matches the office records.

If the device name	Do
is not correct	step 32
is correct	step 25

Loading a PM (continued)

25 The next step depends on the item that you load.

If you	Do
load a single-unit PM or a DCH card	step 26
load a dual-unit PM	step 27
load a CMR card	step 28
load an STC card	step 29

26 To load the PM, type

`>LOADPM`

and press the Enter key.

If the LOADPM command	Do
passed	step 33
failed, and the reason is different from the first time LOADPM failed	step 2
failed, and you did not replace all the cards in the list in step 4	step 30
failed, and you replaced all the cards in the list in step 4	step 32
failed, but the reason is the same as the first time LOADPM failed	step 32

27 To load the PM unit, type

`>LOADPM UNIT unit_no`

and press the Enter key.

where

unit_no
is the number of the unit (0 or 1)

If the LOADPM command	Do
passed	step 33
failed, and the reason is different from the first time LOADPM failed	step 2

Loading a PM (continued)

If the LOADPM command	Do
failed, and you did not replace all the cards in the list in step 4	step 30
failed, and you replaced all the cards in the list in step 4	step 32
failed, but the reason is the same as the first time LOADPM failed	step32

28 To load the CMR card, type

>LOADPM UNIT unit_no CMR

and press the Enter key.

where

unit_no
is the number of the unit (0 or 1) that contains the CMR card to load

If the LOADPM command	Do
passed	step 33
failed, and the reason is different from the first time LOADPM failed	step 2
failed, and you did not replace all the cards in the list in step 4	step 30
failed, and you replaced all the cards in the list in step 4	step 32
failed, but the reason is the same as the first time LOADPM failed	step32

29 To load the STC, type

>STCLOAD UNIT unit_no A stc_loadname

and press the Enter key.

where

unit_no
is the number of the MSB unit (0 or 1)

stc_loadname
is the name of the STC load from office records

If the LOADPM command	Do
passed	step 33

Loading a PM (end)

If the LOADPM command	Do
failed, and the reason is different from the first time LOADPM failed	step 2
failed, and you did not replace all the cards in the list in step 4	step 30
failed, and you replaced all the cards in the list in step 4	step 32
failed, but the reason is the same as the first time LOADPM failed	step 32

30 Replace the next card on the list that the system generated in step 4. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

31 Go to step 25.

32 For additional help, contact the next level of support.

33 The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Monitoring system maintenance PM

Application

Use this procedure to monitor system recovery actions on a peripheral module (PM).

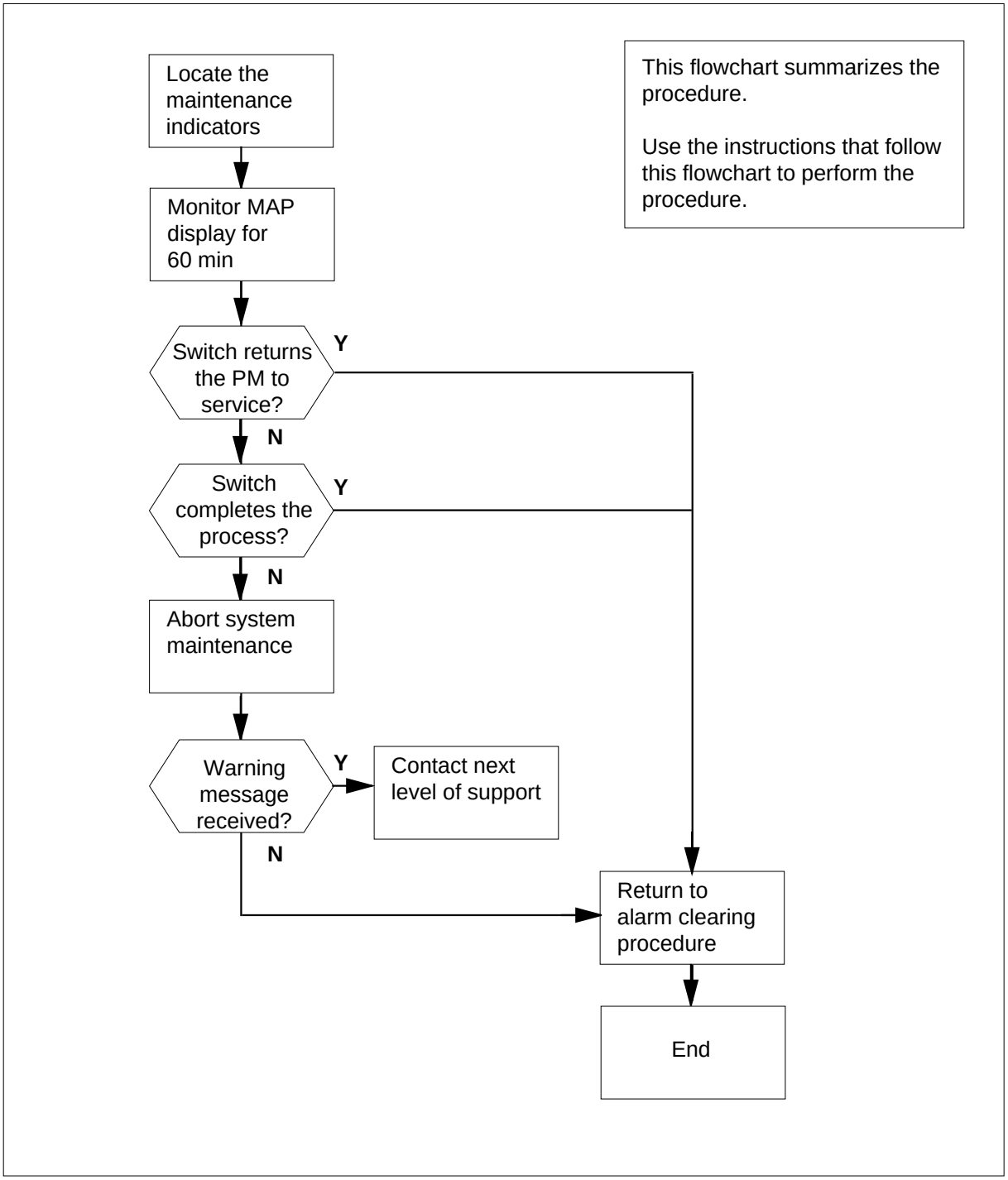
Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Monitoring system maintenance

PM (continued)

Summary of Monitoring system maintenance in a PM



Monitoring system maintenance
PM (continued)

Monitoring system maintenance in a PM

At the PM level of the MAP display

1

> **ATTENTION**
> Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure seperately equipment damage or a loss of service can occur.

Locate the system maintenance indicators. These indicators appear on the right of the maintenance flag (Mtce) in the MAP display for the posted PM.

Example of a MAP display:

```
LTC    0         SysB  Links_OOS:  CSide 20, PSide 0
Unit0:    Act       SysB      Mtce ROM/RAM Query
Unit1:    Inact     SysB      Mtce ROM/RAM Query
```

The system maintenance indicators identify the steps the switch performed as part of the automatic recovery process. In the previous example, `ROM/RAM Query` is the system maintenance indicator.

The following is a list of some of the system maintenance indicators and the time the switch requires to complete each step.

System maintenance indicators (Sheet 1 of 2)

Step	Completion time
`ROM/RAM Query`	a maximum of 1 min
`System Recovery`	varies, depending on the type of PM and the size of the load
`/Reset`	15 to 20 seconds
`/Status`	2 s to 1 min
`ROM/RAM Query`	a maximum of 1 min
`NonDestr ROMtst`	1 to 10 min
`/Loading:`	varies, depending on the PM type, load size, and available resources

Monitoring system maintenance
PM (continued)

System maintenance indicators (Sheet 2 of 2)

Step	Completion time
`/RUN`	a maximum of 5 s
`Initializing`	1 to 2.5 min
`/Clear Data`	a max of 30 s
`/Static Data`	from 30 s to several minutes
`Loading:Execs`	varies, depending on PM type, load size, and available resources
`Checksum`	5 to 10 s
Note: The automatic recovery process can skip or repeat steps, depending on the type of PM.	

2 Monitor the MAP display for 60 min while the switch attempts to recover the PM automatically.

If the switch	Do
does not complete the automatic recovery process in 60 min	step 3
completes the automatic recovery process, but the PM does not return to service	step 8
returns the PM to service	step 8

3

WARNING
Possible loss of service
If you abort system maintenance, you can affect maintenance on other PMs. If you abort system maintenance, you can lengthen service interruption or damage equipment.

To abort system maintenance, type

>ABTK

and press the Enter key.

The MAP display can respond with the following message.

Example of a MAP response:

Monitoring system maintenance
PM (end)

```
ABORTING SYSTEM MAINTENANCE ON THIS PM WILL AFFECT
MAINTENANCE ON THE OTHER PMS.
PLEASE CONFIRM ("YES", "Y", "NO", or "N"):
```

If you	Do
receive this message	step 4
do not receive this message	step 8

4 Do not respond to the message. Contact the next level of maintenance before you continue this procedure. The switch loads a group of PMs. If you abort system maintenance, you can damage these PMs.

If you	Do
cannot proceed	step 5
can proceed	step 7

5 To cancel the ABTK command, type

>NO

and press the Enter key.

6 Follow the instructions from the next level of maintenance. The instructions include how to clear the alarm that led you to this procedure. Go to step 9.

7 To abort the system maintenance, type

>YES

and press the Enter key.

8 Return to the step that led you to this procedure to clear the alarm.

9 The procedure is complete.

Moving an XSG to a spare XLIU

Application

Use this procedure when an X.25/X.75 link interface unit (XLIU) is out of service. When the XLIU is OOS, you must switch the X.25 service group (XSG) to a spare XLIU.

Note: The following restrictions apply:

- the XLIU must be a spare
- both the active XLIU and the spare XLIU must be on on the same shelf
- a BCS by the next day process (ONP) application or a dump and restore cannot be in progress when you use the SWTCH command

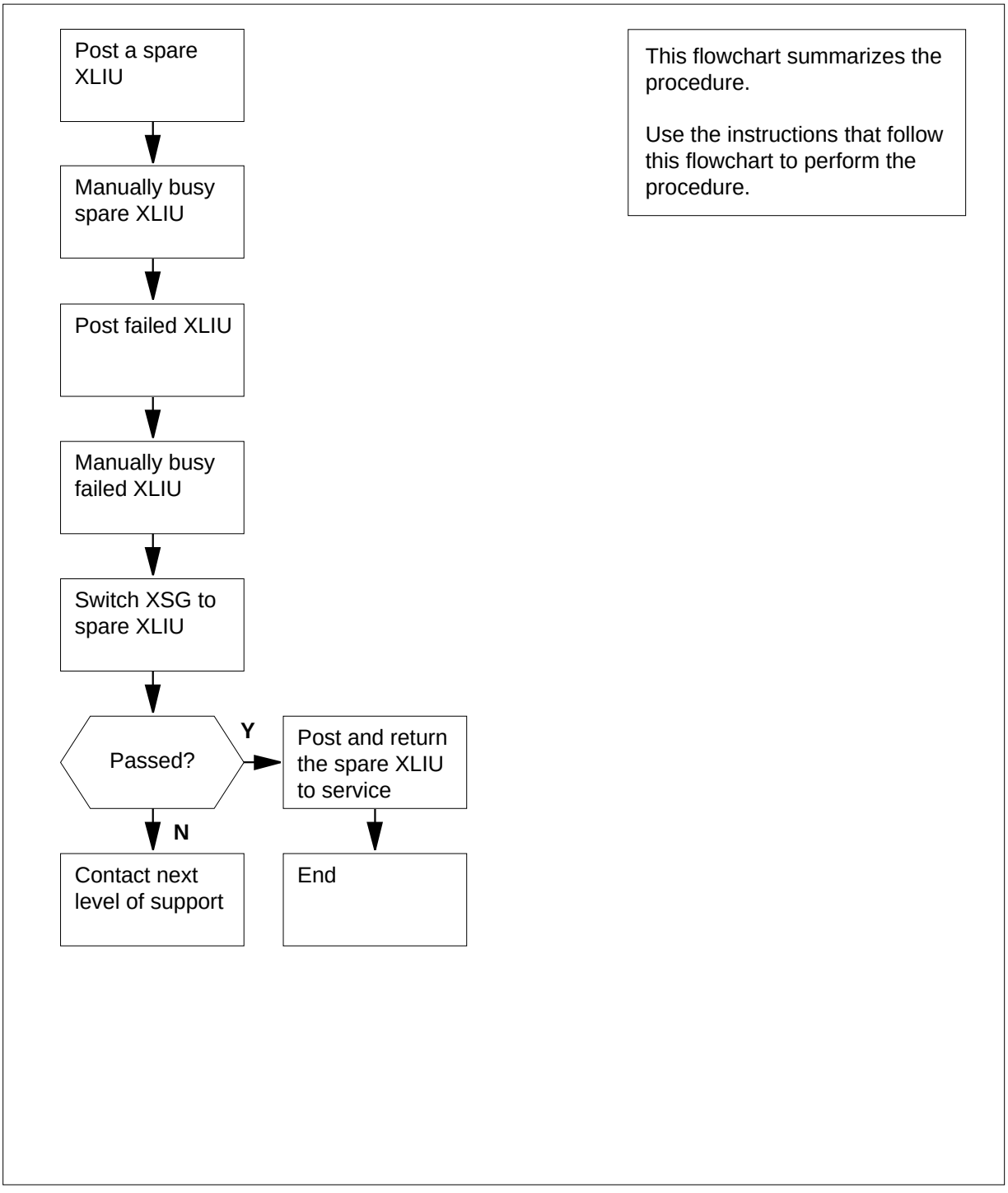
Outage time is 3 min 50 s.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Moving an XSG to a spare XLIU (continued)

Summary of Moving an XSG to a spare XLIU



Moving an XSG to a spare XLIU (continued)

Moving an XSG to a spare XLIU

At the MAP location:

1 Determine from office records or from operating company personnel the XLIU numbers of the out-of-service XLIU and a spare XLIU.

Note: The spare XLIU must be on the same shelf as the out-of-service XLIU.

2 To access the PM level of the MAP display, type

>MAPCI;MTC;PM

and press the Enter key.

Example of a MAP display:

```
                SysB     ManB     OffL     CBsy     ISTb     InSv
PM                 7        0        0        0       10       87
```

3 To post a spare XLIU, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no
is the number of the spare XLIU that you obtained at step 1

Example of a MAP display:

```
                SysB     ManB     OffL     CBsy     ISTb     InSv
PM                 7       26       34        0       10       27
XLIU               1        0        0        0        4       32

XLIU   132 InSv       Spre
```

If the spare XLIU	Do
is InSv or ISTb	step 5
is other than listed here	step 4

4 You must move the XSG to a spare XLIU that is in service (can handle traffic).

Go to step 18.

5 To manually busy the spare XLIU that uses the NOWAIT option, type

>BSY NOWAIT

and press the Enter key.

Example of a MAP response:

```
XLIU 132 BSY Passed
```

Moving an XSG to a spare XLIU (continued)

6 To test the spare XLIU, type

>TST

and press the Enter key.

Example of a MAP response
XLIU 132 TST Passed

If the TST command	Do
passed	step 9
failed	step 7

7 To reset the XLIU, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 9
failed	step 8

8 To load the XLIU, type

>LOADPM

and press the Enter key.

If the LOADPM command	Do
passed	step 9
failed	step 18

9 To post an out-of-service provisioned XLIU that has an assigned XSG, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no
is the number of the active XLIU

Example of a MAP display:

```
              SysB    ManB    OffL    CBsy    ISTb    InSv
PM               7      26      34       0      10      27
XLIU             1       0       0       0       4      32

XLIU  131 SysB    Rsvd
```

Moving an XSG to a spare XLIU (continued)

10 Manually force bsy the XLIU by typing

>BSY F0RCE

and press the Enter key.

Example of a MAP response:

```
Busying XLIU 131 will take XSG channels out of service.
Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

If the response is	Do
Busying the XLIU will take XSG channels out of service. Please confirm ("YES", "Y", "NO", or "N"):	Step13
Warning: XLIU 131 is currently being imaged. The BSY command will be aborted unless the FORCE option is used.	step 11

11 Continue

If	Do
proceed with BSY FORCE request	step 12
abort BSY FORCE request	step 19

12 Force bsy the XLIU by typing

>YES

and pressing the Enter key.

Example of a MAP response:

```
Imaging will be aborted on XLIU 131.
```

13 Proceed

If you are	Do
asked to confirm the command	step 14
not asked to confirm the command	step 15

14 To confirm the command, type

>YES

and press the Enter key.

15 To switch the service from the provisioned XLIU to the spare XLIU, type

>SWITCH xliu_no

and press the Enter key.

where

xliu_no
is the number of the spare XLIU

Example of a MAP response:

```
Takeover passed XLIU 131 to XLIU 132 XSG 5
```

If the SWITCH command	Do
passed	step 16
failed	step 18

16 To post the XLIU that assigns XSG, type

>POST XLIU xliu_no

and press the Enter key.

where

xliu_no
is the number of the XLIU to which you switched activity at step 15

17 To return the XLIU to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	step 20
failed	step 18

18 For additional help, contact the next level of support.

19 Abort the BSY FORCE request by typing

>NO

and pressing the Enter key. BSY request has been aborted, node imaging is continuing.

20 The procedure is complete.

Resetting a volume

Application

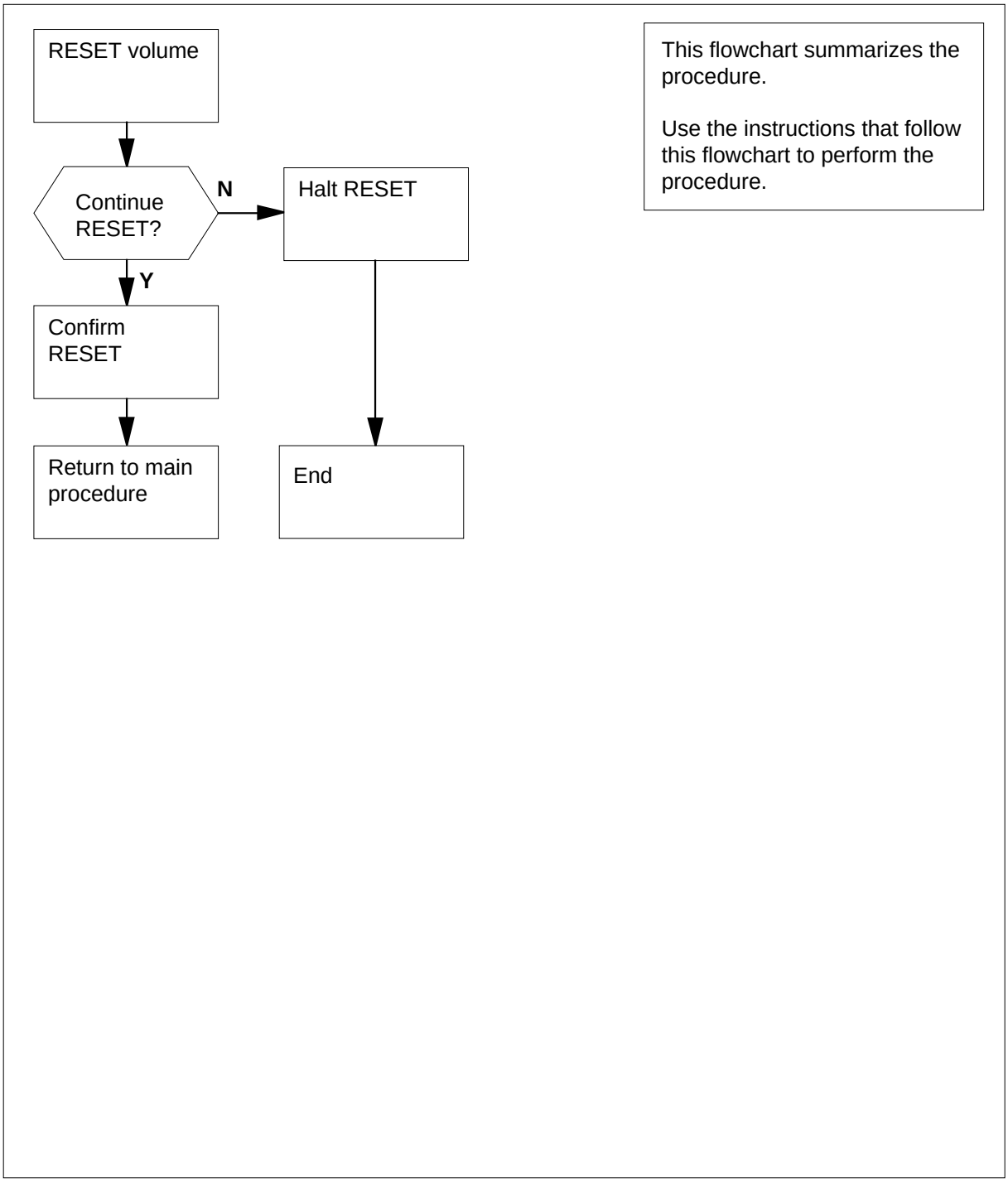
Use this procedure to reset a volume.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Resetting a volume (continued)

Summary of Resetting a volume



Resetting a volume (continued)

Resetting a volume

DANGER

Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

At the MAP terminal

1 To reset the affected volume, type

>RSETVOL pool_no vol_no

and press the Enter key.

where

pool_no
is the pool number (nn1)

vol_no
is the volume number (nn2)

Example of a MAP response:

```
FILE SYSTEM ERRORS HAVE OCCURRED ON THIS VOLUME WHICH MAY
AFFECT ITS ABILITY TO RECORD DATA ON THE VOLUME.
THE CAUSE OF THESE ERRORS SHOULD BE INVESTIGATED AND ALL
PROBLEMS SHOULD BE RESOLVED BEFORE RESETTING THIS VOLUME.
PLEASE CONFIRM (″YES″ OR ″NO″)
```

2 Determine if you want to continue to reset the volume.

If you	Do
want to continue	step 5
do not want to continue	step 3

3 To halt the reset, type

>NO

and press the Enter key.

4 You do not complete this alarm clearing procedure. Go to the next procedure.

5 To confirm the reset, type

>YES

and press the Enter key.

Example of a MAP display:

Resetting a volume (end)

```
REGULAR ssys VOLUME WILL BE MARKED AS ”READY”
vol_name:  VOLUME nn IN REGULAR POOL n, pool_name
DONE – AUDITING AFFECTED VOLUME/SUBSYSTEM(S)
```

6 The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Restoring LIM unit cross-links

Application

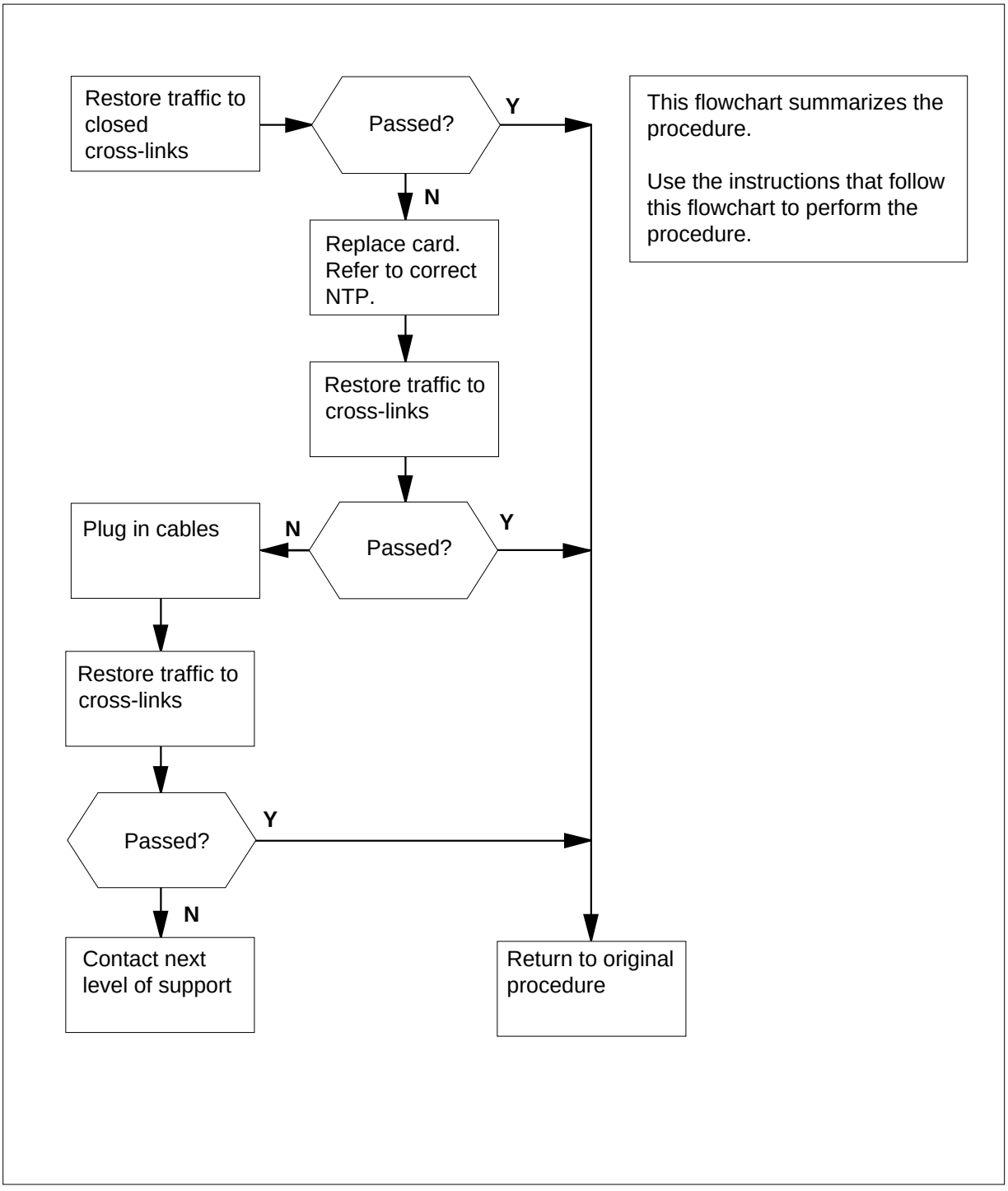
Use the following procedure to restore link interface module (LIM) unit cross-links.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Restoring LIM unit cross-links (continued)

Summary of Restoring LIM unit cross-links



Restoring LIM unit cross-links (continued)

Restoring LIM unit cross-links

At the MAP terminal

1

WARNING
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. If you use this procedure separately, equipment damage or loss of service can occur.

To determine the state of the LIM unit cross-links, type

>TRNSL unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) on which you are working

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 – MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 – MS 0:20:0) Open
LIM 1 UNIT 0 LINK 2 (9:2 – LIM 1:30:2) Closed
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 – MS 0:21:1) Open
LIM 1 UNIT 0 LINK 5 (10:1 – MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 – LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: Two cross-links are present between LIM units 0 and 1. These cross-links always have the assigned link numbers 2 and 6.

If	Do
all cross-links are Open	step 35
a cross-link is in a state other than Open	step 2

2 Record the link number of the cross-links that are not open.

Note: The link number (2 or 6) is on the right of the word LINK on the MAP response. In the example in step 1, link 2 is the closed link.

3 To manually busy one of the closed cross-links, type

>BSY LINK unit_no link_no

and press the Enter key.

where

Restoring LIM unit cross-links (continued)

unit_no
is the number of the LIM unit (0 or 1) where the cross-link is closed

link_no
is the number of the cross-link (2 or 6)

4 To return the closed cross-link that you busied in step 3 to service, type

>RTS LINK unit_no link_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) where the cross-link is closed

link_no
is the number of the cross-link (2 or 6)

Example input:

>RTS LINK 0 2

If the RTS command	Do
passed	step 28
failed, and the system generated a card list	step 5
failed, and the system did not generate a card list	step 29

5 Record the location, description, slot number, product engineering code (PEC), and the PEC suffix of the cards on the list.

6 Determine the state of the LIM unit you are working on.

If the state of the LIM unit	Do
is ManB	step 21
is Istb	step 7

7 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP display:

```
LIM 1 ISTb
                Links_OOS   Taps_OOS
Unit0:  ISTb            .        19
Unit1:  InSv            .        2
           Tap: 0  4  8  12  16  20  24  28  32
 FBus0: ManB     BBBB BBBB BBBB BBBB ---- ---- ---- ---B  BB--
 FBus1: InSv     ...M.  I...S.. ....  ----  ----  ----  ---.   ..--
```

Restoring LIM unit cross-links (continued)

Note: In the example, B under a tap number means that the F-bus is manual busy or that the controlling LIM unit is system busy or manual busy, a dot (.) means that the tap is in service, M means that the tap is manual-busy, I means that the tap is in-service trouble, S means that the tap is system-busy tap, and a dash (-) means the tap is unequipped.

8

WARNING
Possible loss of service
Make sure that the mate F-bus and the taps for equipped and online nodes are in service. Perform this action before you manually busy the LIM unit that is in service trouble. Failure to proceed in this order can isolate application-specific units (ASU) on link interface shelves 1, 2, and 3.

Determine the state of the mate F-bus.

Note: The F-bus 1 is the mate if you work on F-bus LIM unit 0. The F-bus 0 is the mate F-bus if you work on LIM unit 1. The F-bus state appears on the right of the words FBus0 or FBus1 in the example MAP display in step 7.

If the state of the mate F-bus	Do
is `InSv` or `ISTb`	step 11
is other than listed here	step 9

9 Perform the procedure *Clearing a PM LIMF major alarm* in this document to return the mate F-bus to service. Complete the procedure and return to this point.

10 To access the F-bus level of the MAP display, type

`>PM;POST LIM unit_no;FBUS`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

11 Determine the state of the taps on the mate F-bus.

Note: The tap states appear in the two rows of characters under the numbers 0 to 35 (or 0 to 23). The tap states appear in the example MAP display in step 7.

If the taps on the mate F-bus	Do
are in service (`.`) or in-service trouble (`I`)	step 14

Restoring LIM unit cross-links (continued)

If the taps on the mate F-bus	Do
are manually busy (M) or system busy (S)	step 12

12 Perform the correct alarm clearing procedure in this document to return the taps to service. Complete the procedure and return to this point.

13 To access the F-bus level of the MAP display, type

`>PM;POST LIM unit_no;FBUS`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) in use

14

WARNING
Loss of service
Manually busy the F-bus for the in-service trouble LIM unit before you manually busy the LIM unit. Failure to proceed in this order causes a loss of messaging for all ASUs in the link peripheral processor (LPP) or enhanced LPP (ELPP) that carry traffic.

To manually busy the F-bus for the LIM unit, type

`>BSY FBUS fbus_no`

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

If the response	Do
is LIM x FBus y Busy initiated. LIM x FBus y Busy passed.	step 16

Restoring LIM unit cross-links (continued)

If the response	Do
is LIM x FBus y Busy requText>ires confirmation because the following NIUs may be active on this bus... NIU xx unit 0 NIU xx unit 1 Please confirm ("YES", "Y", "NO", or "N"):	step 15

15 To confirm the command, type

>YES

and press the Enter key.

Example of a MAP display:

```
              Tap: 0  4  8  12  16  20  24  28  32
 FBus0: ManB     BBBB BBBB BBBB BBBB ---- ---- ---- ---B BB--
 FBus1: InSv     .... .... .... .... ---- ---- ---- ---.. .--

LIM 1 FBus 0 Busy initiated.
LIM 1 FBus 0 Busy passed.
```

Note: In the example, F-bus 0 was manually busy.

16 To force the LIM unit to busy, type

>BSY UNIT unit_no FORCE

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

Restoring LIM unit cross-links (continued)

```
LIM 1 UNIT 0 Busy initiated.
```

If the response is	Do
LIM x UNIT y Busy requires confirmation because the action will abort the current imaging process on LIM x UNIT y. Do you wish to proceed?Please confirm (“YES", “Y", “NO", or “N"):	step 17
LIM n UNIT n Busy requires confirmation because the action may cause a SEVERE system OUTAGE by isolating other nodes. Please confirm (“YES", “Y", “NO", or “N"):	step 18
Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed?Please confirm (“YES", “Y", “NO", or “N"):	step 19

Restoring LIM unit cross-links (continued)

If the response is	Do
`Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y and UNIT z. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed?Please confirm ("YES", "Y", "NO", or "N"):`	step 20
anything else	step 21

17 The LIM unit you are working on is imaging. Contact your next level of support to determine when it is safe to proceed. Continue with the rest of this procedure when instructed to do so.

18 The mate LIM unit is not in service. Busying the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.

19 The LIM unit you are working on is imaging. The mate unit is not in service. Busying the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.

20 The LIM unit you are working on and the mate unit are imaging. The mate unit is not in service. Busying the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.

21 Replace the NT9X17 card for this unit. Perform the correct card replacement procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

22 To load the LIM unit, type

`>LOADPM UNIT unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

If the LOADPM command	Do
passed	step 23

Restoring LIM unit cross-links (continued)

If the LOADPM command	Do
failed, and the system did not generate a card list	step 34
failed, and the system generated a card list	step 24

23 To return the LIM unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 27
failed, and the system generated a card list	step 24
failed, and the system did not generate a card list	step 29

24 Replace the NT9X23 card for this unit. Perform the correct card replacement procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

25 To load the LIM unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

If the LOADPM command	Do
passed	step 26
is other than listed here	step 34

26 To return the LIM unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

Restoring LIM unit cross-links (continued)

unit_no
is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 27
failed, and the system generated a card list	step 34
failed, and the sytem did not generate a card list	step 29

27 To return the cross-link to service, type

>RTS LINK unit_no link_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

link_no
is the number of the cross-link (2 or 6)

Example input:

>RTS LINK 0 2

If the RTS command	Do
passed	step 28
is other than listed here	step 29

28 To determine the state of the cross-links, type

>TRNSL unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

If	Do
all cross-links are Open	step 35
the cross-link you work on is Open and other cross-links are not Open	step 2
the cross-link you work on is not Open	step 29

Restoring LIM unit cross-links (continued)

At the LPP or ELPP

29 *Example of an LPP MAP display:*

```
LIM 1 ISTb
                Links_OOS   Taps_OOS
Unit0:  ISTb            .        19
Unit1:  InSv            .        2
            Tap: 0  4  8  12  16  20  24  28  32
 FBus0: ManB     BBBB BBBB BBBB BBBB ----  ----  ----  ---B  BB--
 FBus1: InSv     ...M.  I...S.. ....  ----  ----  ----  ---.   ..--
```

Determine if the cross-link cables plug into the interface cards on both sides of the LMS shelf.

If the cables	Do
are plugged in	step 34
are not plugged in	step 30

30 Plug the cables back into the interface cards on both ends of the local message switch (LMS) shelf.

At the MAP display

31 To return the LIM unit to service, type

`>RTS UNIT unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 32
failed	step 34

32 To return the cross-link to service, type

`>RTS LINK unit_no link_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

link_no
is the number of the cross-link (2 or 6)

Restoring LIM unit cross-links (end)

Example input:

```
>RTS  LINK  0 2
```

If the RTS command	Do
passed	step 33
is other than listed here	step 34

33 To determine the state of the cross-links, type

```
>TRNSL  unit_no
```

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

If	Do
all cross-links are `Open`	step 35
the cross-link you work on is `Open` and other cross-links are not `Open`	step 2
the cross-link you work on is not `Open` and you did not attempt to restore the cross-link on the mate LIM unit	step 2
any cross-links are in a state other than `Open` and you worked on both LIM units	step 34

34 For additional help, contact the next level of support.

35 The procedure is complete. Return to the main procedure that sent you to this procedure. Continue as directed.

Returning LIM-to-MS links to service

Application

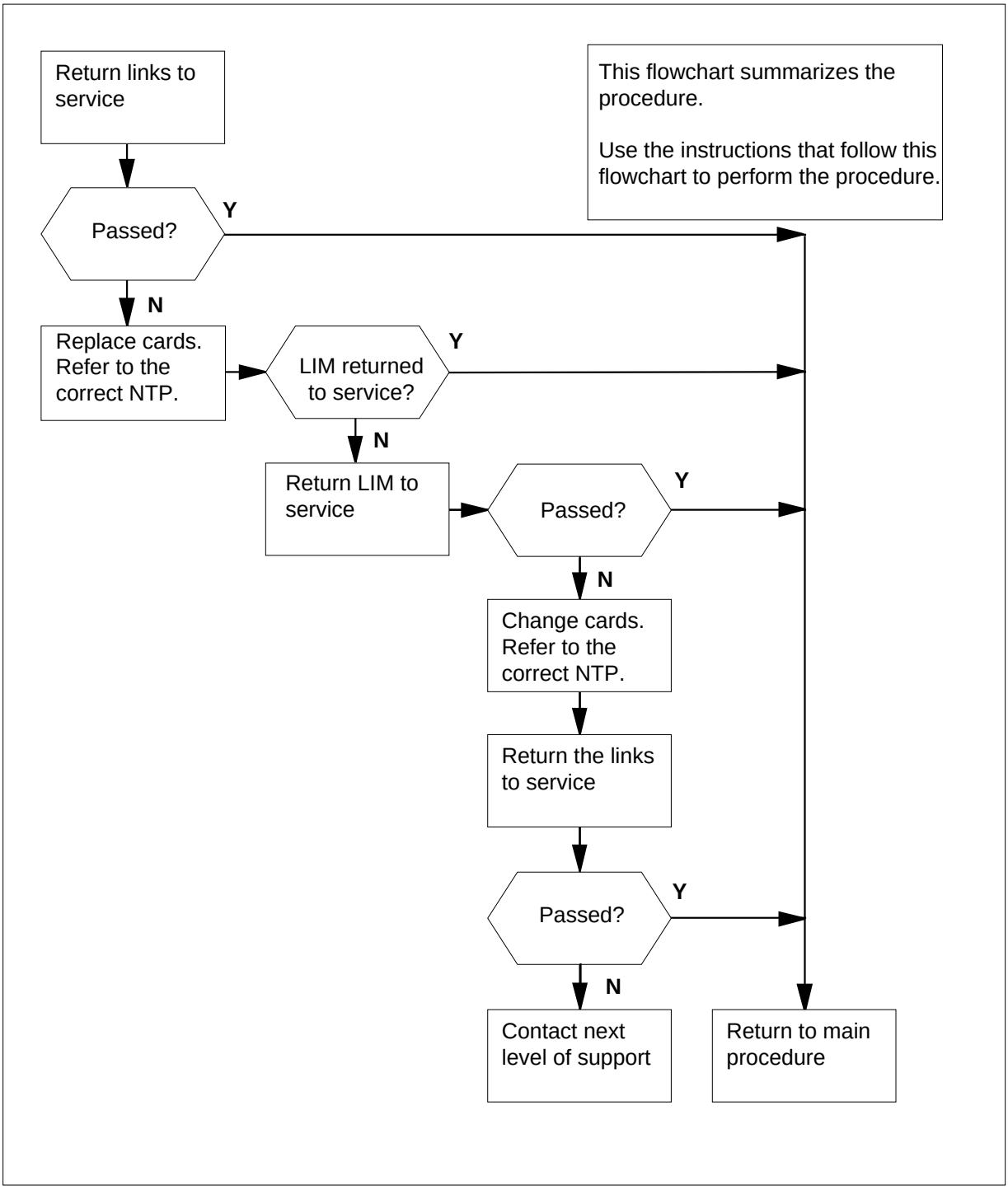
Use this procedure to return the links to service between the link interface module (LIM) to the message switch (MS) to service.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Returning LIM-to-MS links to service (continued)

Summary of Returning LIM-to-MS links to service



Returning LIM-to-MS links to service (continued)

Returning LIM-to-MS links to service

DANGER
Possible equipment damage or loss of service
Proceed only if a step in a maintenance prcedure directed you to this procedure. Use of this procedure can cause equipment damage or loss of service.

WARNING
Delay in the return of equipment to service
If the system generates more than one card list, replace all cards on a short card list before you replace any cards on a full card list.

At the MAP display

1 To determine the state of the LIM unit cross-links, type

`>TRNSL  unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 – MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 – MS 0:20:0) Other end closed
LIM 1 UNIT 0 LINK 2 (9:2 – LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 – MS 0:21:1) Other end closed
LIM 1 UNIT 0 LINK 5 (10:1 – MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 – LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the previous example, links 0, 1, 4, and 5 go from the LIM to the MS.

2 Determine if any LIM-to-MS link has a status other than Open.

If	Do
all LIM-to-MS links are `Open`	step 73
any LIM-to-MS link is in any other state	step 3

Returning LIM-to-MS links to service (continued)

3 Record the MS number, card number, and port number of all LIM-to-MS links that have a status other than Open.

Note: The MS number, card number, and port number appear on the right of the word MS on the MAP example in step 1. In the example, link 1 (which is `Other end closed`). The MS number of link 1 is 0. The card number is 20. The port number is 0.

4 Select a link from the list recorded in step 3.

5 To access the Shelf 0 level of the MAP display, type

`>MAPCI;MTC;MS;SHELF 0`

and press the Enter key.

6 To post the card number for the link that you selected in step 4, type

`>CARD card_no`

and press the Enter key.

where

card_no
is the number of the card for the link that you selected in step 4

7 To make sure that one or more links from the LIM terminate on the MS card you posted, type

`>TRNSL ms_no PORT port_no`

and press the Enter key.

where

ms_no
is the number of the MS (0 or 1) for the link that you selected in step 4

port_no
is the number of the port (0 to 3) for the link that you selected in step 4

Example input:

`>TRNSL 0 PORT 0`

Example of a MAP response:

```
Site    Flr RPos Bay_id  Shf Description Slot  EqPEC
HOST    01  A00  DPCC 0  39  MS 0:0:10   16    9X17AA FRNT
HOST    01  A00  DPCC 0  39  MS 0:0:10   16    9X23BA BACK
Port 0=LIM 2 (OK :Opened)
```

Note: In the example response, Port 0=LIM 2 indicates that a link from LIM 2 terminates on port 0. In the second line of text, 0:0:10 indicates that card 10, on MS 0 shelf 0 is posted.

Returning LIM-to-MS links to service (continued)

8

WARNING
Possible action that affects service
Do not busy all of the ports for the MS. A loss of traffic can occur if you busy the last port for the MS to the LIM. A loss of traffic can also occur when you return the first port to service after you busy all the ports.

To manually busy the port for the link that you selected in step 4, type

>BSY ms_no PORT port_no

and press the Enter key.

where

ms_no
is the number of the MS (0 or 1) for the link that you selected in step 4

port_no
is the number of the port (0 to 3) for the link that you selected in step 4

Example of a MAP response:

```
Request to MAN BUSY MS:1 shelf:0 card:10 port:0 submitted
Request to MAN BUSY MS:1 shelf:0 card:10 port:0 passed
```

If the BSY command	Do
passed	step 9
failed	step 72

9 To test the port, type

>TST ms_number PORT port_number

and press the Enter key.

where

ms_number
is the number of the MS (0 or 1) that contains the affected card

port_number
is the number of the system busy port (0 to 127)

Example of a MAP response:

```
Request to TEST OOS MS:0 shelf:0 card:4 port 1 submitted.
Request to TEST OOS MS:0 shelf:0 card:4 port 1 passed.
```

If the TST command	Do
passed	step 25

Returning LIM-to-MS links to service (continued)

If the TST command	Do
passed with `Istb`, and the system generates a card list	step 10
failed, and the system generates a card list	step 10
other than listed here	step 72

10 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the first card on the list.

11 To access the MS level of the MAP display, type

>MS

and press the Enter key.

12 Determine the clocking configuration.

Note: The clocking configuration appears under the Clock header of the MAP display.

If the MS that contains the card that you want to replace is	Do
the slave MS, indicated by `Slave` under the Clock header	step 16
the master MS, indicated by `Master or M Free` under the Clock header	step 13

13 To switch clock mastership, type

>SWMAST

and press the Enter key.

Example of a MAP response:

```
Request to Switch Clock Mastership MS: 0 submitted.
Request to Switch Clock Mastership MS: 0 passed.
```

If the SWMAST command	Do
passed	step 15
failed	step 14

14 Perform the procedure *Failure to switch clock mastership* in this document. Complete the procedure and return to this point.

15 Wait 10 min to make sure the MS is stable. Continue this procedure.

Returning LIM-to-MS links to service (continued)

16 To manually busy the MS that contains the card that you want to replace, type

>BSY ms_number

and press the Enter key.

where

ms_number
is the number of the MS (0 or 1) that contains the card that you want to replace

Example of a MAP response:

```
Request to MAN BUSY MS: 0 submitted.
Request to MAN BUSY MS: 0 passed.
```

If the response is	Do
P-side nodes will be isolated-taken Out Of Service. BSY Aborted.	step 72
Remaining links to P-side nodes are unstable.	step 72
Request to MAN BUSY MS:0 passed	step 17
Request to MAN BUSY MS:1 passed	step 17
Request to MAN BUSY MS:0 failed	step 72
Request to MAN BUSY MS:1 failed	step 72
other than listed here	step 72

17 To replace the card, perform the correct procedure in *Card Replacement Procedures.* Complete the procedure and return to this point.

18 To perform an out-of-service test on the manually busy MS, type

>TST ms_number

and press the Enter key.

where

ms_number
is the number of the manual busy MS (0 or 1)

If the TST command	Do
passed	step 22
passed with `Istb`, and the system generates a card list	step 19
passed with `Istb`, and you replaced all the cards on the list	step 72

Returning LIM-to-MS links to service (continued)

If the TST command	Do
failed, and you replaced all the cards on the list	step 72
failed, and the system generates a card list	step 20
other than listed here	step 72

19 Record the location, description, slot number, PEC, and PEC suffix of the next card on the list.

Go to step 17.

20 Determine if you replaced all the cards on the list.

If you	Do
replaced all the cards on the list	step 72
did not replace all the cards on the list	step 21

21 Record the location, description, slot number, PEC, and PEC suffix of the first card listed that you did not replace.

Go to step 17.

22 To return the manual busy MS to service, type

>RTS ms_number

and press the Enter key.

where

ms_number
is the number of the manual busy MS (0 or 1)

Example of a MAP response:

```
Request to RTS MS: 0 submitted.
Request to RTS MS: 0 passed.
```

If the RTS command	Do
passed	step 23
failed	step 72

23 To access the Shelf level of the MAP, type

>SHELF

and press the Enter key.

Example of a MAP Display:

Returning LIM-to-MS links to service (continued)

```
Shelf 0                  1 1 1 1
Card   1 2 3 4 5 6 7 8 9 0 1 2 3
Chain
MS 0   . . . M . . . . . . . .
MS 1   . . . . . . . . . . . .
```

24 To post the card number for the link that you selected in step 4, type

>CARD card_number

and press the Enter key.

where

card_number
is the number of the affected card (6 to 25)

Example of a MAP response:

```
Card 04 CMIC Interface Card Port: 0 1
MS 0             I                . M
MS 1             I                . .
```

25 To return the port to service, type

>RTS ms_number PORT port_number

and press the Enter key.

where

ms_number
is the number of the MS (0 or 1) for the link that you selected in step 4

port_number
is the number of the port (0 to 3) for the link that you selected in step 4

Example of a MAP response:

```
Request to RTS MS:1 shelf:0 card:10 port:0 submitted
Request to RTS MS:1 shelf:0 card:10 port:0 passed
```

If the RTS command	Do
passed, and you worked on all MS ports that you recorded in step 3	step 26
passed, and you did not work on all MS ports that you recorded in step 3	step 4
failed, and you worked on all MS ports that you recorded in step 3	step 26

Returning LIM-to-MS links to service (continued)

If the RTS command	Do
failed, and you did not work on all MS ports that you recorded in step 3	step 4

26 Determine if you returned all MS ports to service that you recorded in step 3.

If you	Do
returned all MS ports to service	step 27
did not return all MS ports to service	step 72

27 To access the PM level of the MAP display, type

>PM

and press the Enter key.

28 To post the LIM that lost links to the MS, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 16) that lost links to the MS

Example of a MAP Display:

```
LIM 1 ISTb
                          Links_OOS   Taps_OOS
Unit0:  ISTb              2.          0
Unit1:  InSv              .           0
```

29 Determine the state of the LIM unit that you worked on when you started this procedure.

If the state of the LIM unit is	Do
ISTb	step 32
ManB	step 30

30 To determine if the links between the LIM unit and the MS are open, type

>TRNSL unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) you are working on

Returning LIM-to-MS links to service (continued)

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 – MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 – MS 0:20:0) Open
LIM 1 UNIT 0 LINK 2 (9:2 – LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 – MS 0:21:1) Open
LIM 1 UNIT 0 LINK 5 (10:1 – MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 – LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the previous example, links 0, 1, 4, and 5 go from the LIM to the MS.

If all links are	Do
Open	step 31
other than listed here	step 51

31 To return the LIM unit to service, type

`>RTS UNIT unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 73
failed, and the system generated a card list	step 52
failed, and the system did not generate a card list	step 72

32 To determine if the links between the LIM unit and the MS are open, type

`>TRNSL unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

Returning LIM-to-MS links to service (continued)

```
LIM 1 UNIT 0 LINK 0 (9:0 – MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 – MS 0:20:0) Open
LIM 1 UNIT 0 LINK 2 (9:2 – LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 – MS 0:21:1) Open
LIM 1 UNIT 0 LINK 5 (10:1 – MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 – LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

If all links are	Do
Open	step 33
other than listed here	step 65

33 Determine if the LIM unit state changes from in-service trouble to in-service. Wait 8 min.

Note: In the example in step 32, the LIM unit state appears on the right of the LIM1.

If in 8 min the LIM unit state is	Do
InSv	step 73
ISTb	step 34

34 To display more information about the fault, type

`>QUERYPM UNIT unit_no FLT`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

If the response	Do
indicates that a fault is present, and the system generated a card list	step 36
is other than listed here	step 35

35 To test the LIM unit, type

`>TST UNIT unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Returning LIM-to-MS links to service (continued)

Example of a MAP response:

```
LIM 4 UNIT 1 Test initiated.
```

If the TST command	Do
passed	step 73
failed, and the system generated a card list	step 36
failed, and the system did not generate a card list	step 72

36 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

37 To access the F-bus level of the MAP display, type

>FBUS

and press the Enter key.

Example of a MAP Display:

```
LIM 1 ISTb
                              Links_OOS Taps_OOS
Unit0:    ISTb           .              19
Unit1:    InSv           .              2
             Tap:   0    4    8    12   16   20   24   28   32
 FBus0: ManB        BBBB BBBB BBBB BBBB ---- ---- ---- ---B BB--
 FBus1: InSv        ...M .I.. .S.. .... ---- ---- ---- ---. ..--
```

Note: In the previous example, B under a tap number indicates that the F-bus is manual busy. The B also indicates the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual busy tap. An I indicates an in-service trouble tap. An S indicates a system busy tap. A hyphen (-) indicates a tap that is not equipped.

38

WARNING

Possible loss of service

Make sure that the mate F-bus is in service before you busy the LIM unit that is in-service trouble. Make sure that the taps for equipped and online nodes are also in service before you manually busy the LIM unit that is in service trouble. Failure to proceed in this order can isolate application-specific units (ASU) on link interface shelves 1, 2, and 3.

Returning LIM-to-MS links to service (continued)

Determine the state of the mate F-bus.

Note: F-bus 1 is the mate F-bus if you work on LIM unit 0. The F-bus 0 is the mate F-bus if you work on LIM unit 1. The F-bus state appears on the right of the words FBus0 or FBus1 in the example MAP display in step 37.

If the state of the mate F-bus is	Do
InSv or ISTb	step 41
other than listed here	step 39

39 Perform the procedure *Clearing a PM LIMF major alarm* in this document to return the mate F-bus to service. Complete the procedure and return to this point.

40 To access the F-bus level of the MAP display, type

```
>MAPCI;MTC;PM;POST  LIM  lim_no;F-BUS
```

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 16) that you are working on

41 Determine the state of the taps on the mate F-bus.

Note: The tap states appear in the two rows of characters under the numbers 0 to 35 (or 0 to 23). The tap states appear in the example in step 37.

If the taps on the mate F-bus are	Do
in service (.) or in-service trouble (I)	step 44
manually busy (M) or system busy (S)	step 42

42 Perform the correct alarm clearing procedure in this document to return the taps to service. Complete the procedure and return to this point.

43 To acess the F-bus level of the MAP display, type

```
>MAPCI;MTC;PM;POST  LIM  lim_no;FBUS
```

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 16) that you are working on

Returning LIM-to-MS links to service (continued)

44

WARNING
Loss of service
You must busy the F-bus for the in-service trouble LIM unit you are working on before you busy the LIM unit. Failure to proceed in this order can cause a loss of messaging for all ASUs in the LPP that carry the traffic.

To manually busy the F-bus for the LIM unit you are working on, type

>BSY FBUS fbus_no

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

If the response is	Do
LIM x FBus y Busy initiated. LIM x FBus y Busy passed.	step 46
LIM x FBus y Busy requires confirmation because the following NIUs may be active on this bus... NIU xx unit 0 NIU xx unit 1 Please confirm ("YES", "Y", "NO", or "N"):	step 45

45 To confirm the command, type

>YES

Example of a MAP:

```
            Tap:   0    4    8    12   16   20   24   28   32
FBus0: ManB        BBBB BBBB BBBB BBBB ---- ---- ---- ---B BB--
FBus1: InSv        .... .... .... .... ---- ---- ---- ---. ..--

LIM 1 FBus 0 Busy initiated.
LIM 1 FBus 0 Busy passed.
```

Note: In the example, F-bus 0 is manually busy.

46 To force the LIM unit to busy, type

>BSY UNIT unit_no FORCE

and press the Enter key.

Returning LIM-to-MS links to service (continued)

where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

```
LIM 1 UNIT 0 Busy initiated.
```

If the response is	Do
LIM x UNIT y Busy requires confirmation because the action will abort the current imaging process on LIM x UNIT y. Do you wish to proceed? Please confirm (“YES", “Y", “NO", or “N"):	step 47
LIM x UNIT y Busy requires confirmation because the action may cause a SEVERE system OUTAGE by isolating other nodes. Please confirm (“YES", “Y", “NO", or “N"):	step 48
Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed? Please confirm (“YES", “Y", “NO", or “N"):	step 49

Returning LIM-to-MS links to service (continued)

If the response is	Do
Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y and UNIT z. LIM x UNIT y Busy requires confirmation be-cause the action may also cause a SE-VERE system OUTAGE by iso-lating other nodes. Do you wish to proceed? Please confirm (“YES", “Y", “NO", or “N"):	step 50
anything else	step 54

47 The LIM unit you are working on is imaging. Contact your next level of support to determine when it is safe to proceed. Continue with the rest of this procedure when instructed to do so.

48 The mate unit is not in service. Busying the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.

49 The LIM unit you are working on is imaging. The mate unit is not in service. Busying the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.

50 The LIM unit you are working on and the mate unit are imaging. The mate unit is not in service. Busying the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.

51 To test the LIM unit, type

`>TST UNIT unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

```
LIM 4 UNIT 1 Test initiated.
```

If the TST command	Do
passed	step 64
failed, and the system generated a card list	step 53

Returning LIM-to-MS links to service (continued)

If the TST command	Do
failed, and the system did not generate a card list	step 72

52 To test the LIM unit, type

>TST UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

```
LIM 4 UNIT 1 Test initiated.
```

If the TST command	Do
passed	step 73
failed, and the system generated a card list	step 53
failed, and the system did not generate a card list	step 72

53 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

54 To reset the manual busy LIM unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the manual busy LIM unit (0 or 1)

If the PMRESET command	Do
passed	step 63
failed	step 55

55 To load the LIM unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

Returning LIM-to-MS links to service (continued)

unit_no
is the number of the LIM unit to reload (0 or 1)

If the LOADPM command	Do
passed	step 63
other than listed here	step 56

56 Replace the NT9X17 card for this unit. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

57 To reload the LIM unit, type

```
>LOADPM  UNIT  unit_no
```

and press the Enter key.

where

unit_no
is the number of the LIM unit to reload (0 or 1)

If the LOADPM command	Do
passed	step 63
failed, and you did not replace the NT9X23 (NT9X62 for an LPP with fiber links) card for this unit	step 59
failed, and you replaced the NT9X23 (NT9X62 for an LPP with fiber links) card for this unit	step 58

58 Make sure you replaced all the cards on the list that you recorded.

If you	Do
did not replace all the cards on the list you recorded	step 61
replaced all the cards on the list you recorded	step 72

59 Replace the NT9X23 (NT9X62 for an LPP with fiber links) card for this unit. Perform the correct procedure in the *Card Replacement Procedures*. Complete the procedure and return to this point.

60 Go to step 57.

61 Replace the next card on the list you recorded. Perform the correct procedure in the *Card Replacement Procedures*. Complete the procedure and return to this point.

Returning LIM-to-MS links to service (continued)

62 Go to step 57.

63 To return the LIM unit to service, type

`>RTS UNIT unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 64
failed	step 72

64 To determine if the LIM-to-MS links are open, type

`>TRNSL unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) that lost its MS links

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 – MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 – MS 0:20:0) Other end closed
LIM 1 UNIT 0 LINK 2 (9:2 – LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 – MS 0:21:1) Other end closed
LIM 1 UNIT 0 LINK 5 (10:1 – MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 – LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the example, links 0, 1, 4, and 5 go from the LIM to the MS.

If the states of all the LIM-to-MS links are	Do
Open	step 73
other than listed here	step 65

65 Record the following information for all LIM to MS links that are not open.

- LIM number
- LIM unit number
- link number
- LIM card number
- LIM port number

- MS number
- MS card number
- MS port number

Note: The example in step 64 shows LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Other end closed. This line in the MAP response indicates that a DS30 (SR128 for an LPP with fiber links) link (link 1) terminates on LIM 1, unit 0, card 09R, port 1. The DS30 (SR128 for an LPP with fiber links) link (link 1) also terminates on MS 0, logical card 20, port 0.

66 The links that you recorded in step 65 can have faults . Replace any cards that have faults.

67 To access the Shelf 0 level of the MAP display, type

```
>MAPCI;MTC;MS;SHELF  0
```

and press the Enter key.

68 To post the logical MS card number that you recorded in step 65, type

```
>CARD  card_no
```

and press the Enter key.

where

card_no
is the logical card number that you recorded in step 65

69 To determine the MS slot number for the NT9X23 or NT9X62 (for an LPP with fiber links) paddleboard on which the DS30 or SR128 (for an LPP with fiber links) link between the LIM and MS terminates, type

```
>TRNSL  ms_no  PORT  port_no
```

and press the Enter key.

where

ms_no
is the number of the MS (0 or 1) that you recorded in step 65

port_no
is the number of a port (0 to 3) that you recorded in step 65

Note: For each MS logical card number that you recorded in step 65, there is a slot number that belongs to an NT9X23 (NT9X62 for an LPP with fiber links) paddleboard.

Example input:

```
>TRNSL  0  PORT  0
```

Example of a MAP response for an LPP:

```
Site    Flr RPos Bay_id Shf  Description Slot EqPEC
HOST    01  A00  DPCC   0 39 MS 0:0:10   16   9X17AA FRNT
HOST    01  A00  DPCC   0 39 MS 0:0:10   16   9X23BA BACK
Port 0=LIM 2 (OK :Opened)
```

Example of a MAP response for an LPP with fiber links:

Returning LIM-to-MS links to service (end)

```
Site    Flr RPos Bay_id Shf  Description Slot EqPEC
HOST    01  A00  DPCC   0 39 MS 0:0:10   16   9X17AD FRNT
HOST    01  A00  DPCC   0 39 MS 0:0:10   16   9X62BB BACK
Port 0=LIM 2 (OK :Opened)
```

Note: The line `MS 0:0:10 16 9X23BA BACK`, appears in the example response. This line indicates that a DS30 link (SR128 for an LPP with fiber links) terminates on an NT9X23 (NT9X62 for an LPP with fiber links) card in slot 16R, on MS 0, shelf 0, logical card 10. The DS30 (SR128 for an LPP with fiber links) link is between the LIM and MS.

70 Record the MS slot number for the NT9X23 (NT9X62 for an LPP with fiber links) paddleboard on which the DS30 (SR128 for an LPP with fiber links) link between the LIM and MS terminate.

71 Determine if you recorded the MS slot number for all MS logical card numbers that you recorded in step 65.

If you	Do
recorded all the slot numbers	step 72
did not record all the slot numbers	step 68

72 For addditional help, contact the next level of support.

73 The procedure is complete. Return to the main procedure that sent you to this procedure and continue as directed.

Returning LIM-to-MS links to service for an ELPP

Application

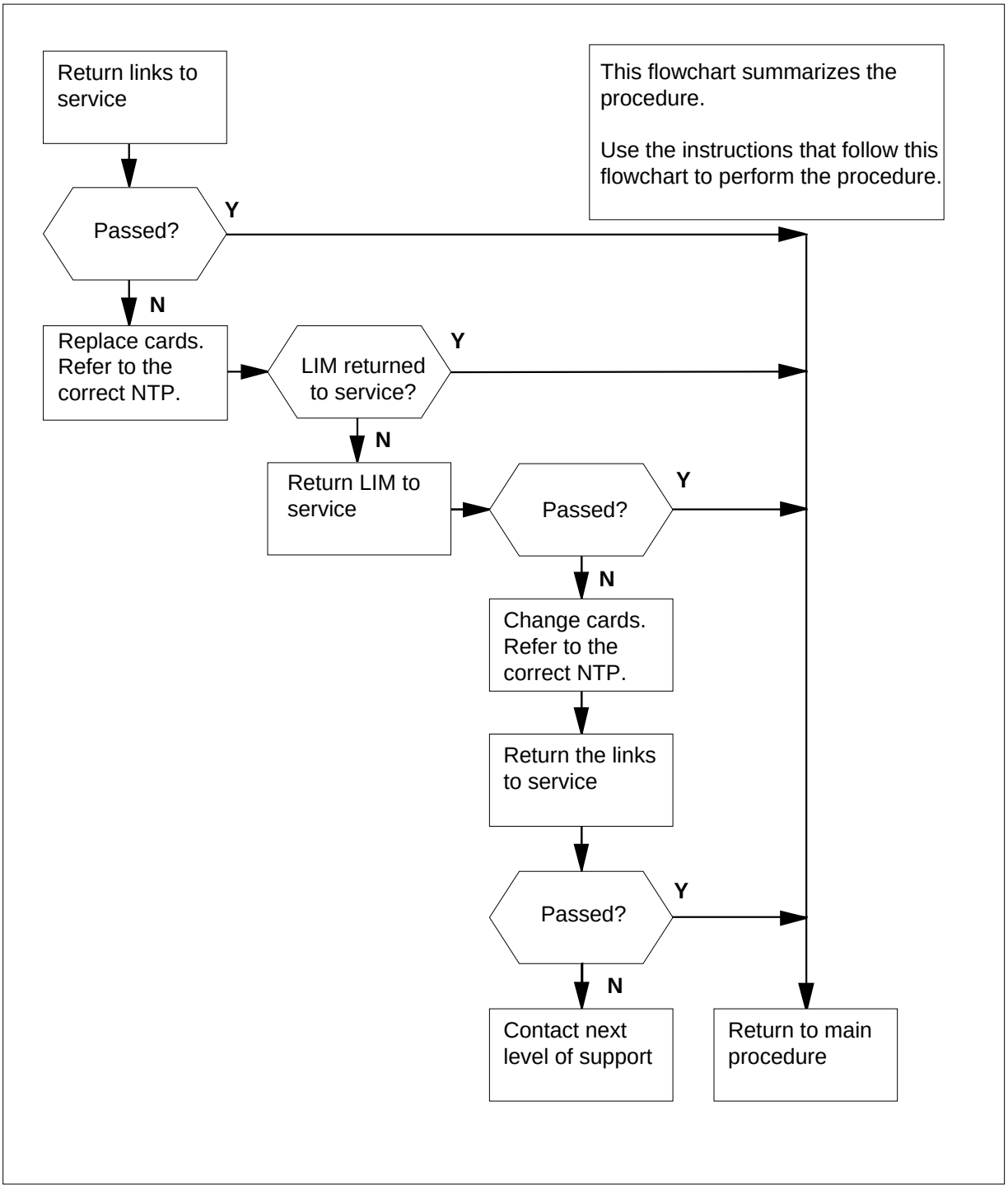
Use this procedure to return to service SR128 links between the link interface module (LIM) and the message switch (MS) in the enhanced link peripheral processor (ELPP).

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Returning LIM-to-MS links to service for an ELPP (continued)

Summary of Returning LIM-to-MS links to service for an ELPP.



Returning LIM-to-MS links to service for an ELPP (continued)

Returning LIM-to-MS links to service for an ELPP

DANGER
Possible equipment damage or loss of service
Proceed only if a step in a maintenance procedure directed you to this procedure. Use of this procedure can cause equipment damage or loss of service.

WARNING
Delay in the return of equipment to service
If the system generates more than one card list, replace all the cards on a short card list before you replace any cards in a full card list.

At the MAP display

1 To determine the state of the LIM unit cross-links, type

`>TRNSL  unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 – MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 – MS 0:20:0) Other end closed
LIM 1 UNIT 0 LINK 2 (9:2 – LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 – MS 0:21:1) Other end closed
LIM 1 UNIT 0 LINK 5 (10:1 – MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 – LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the previous example, links 0, 1, 4, and 5 go from the LIM to the MS.

2 Determine if any LIM-to-MS link has a state other than Open.

If	Do
all LIM-to-MS links are `Open`	step 74
any LIM-to-MS link is in any other state	step 3

Returning LIM-to-MS links to service for an ELPP (continued)

3 Record the MS number, card number, and port number of all LIM-to-MS links that have a state other than Open.

Note: The MS number, card number, and port number appear on the right of the word MS on the MAP example in step 1. In the example, link 1 (which is `Other end closed`). The MS number of link 1 is 0. The card number is 20. The port number is 0.

4 Select a link from the list recorded in step 3.

5 To access the Shelf 0 level of the MAP display, type

`>MAPCI;MTC;MS;SHELF 0`

and press the Enter key.

6 To post the card number for the link that you selected in step 4, type

`>CARD card_no`

and press the Enter key.

where

card_no
is the number of the card for the link that you selected in step 4

7 To make sure that one or more links from the LIM that you are working on terminate on the MS card you posted, type

`>TRNSL ms_no PORT port_no`

and press the Enter key.

where

ms_no
is the number of the MS (0 or 1) for the link that you selected in step 4

port_no
is the number of the port (0 to 3) for the link that you selected in step 4

Example input:

`>TRNSL 0 PORT 0`

Example of a MAP response:

```
Site    Flr RPos  Bay_id  Shf Description Slot EqPEC
HOST    01  A00   DPCC 0  39  MS 0:0:10   16   9X17AD FRNT
HOST    01  A00   DPCC 0  39  MS 0:0:10   16   9X62BB BACK
Port 0=LIM 2 (OK :Opened)
```

Note: In the example response, Port 0=LIM 2 indicates that a link from LIM 2 terminates on port 0. In the second line of text, 0:0:10 indicates that card 10, on MS 0, shelf 0 is posted.

Returning LIM-to-MS links to service for an ELPP (continued)

8

WARNING
Possible action that affects service
Do not busy all of the ports for the MS. A loss of traffic can occur if you busy all ports for the MS to the LIM links. A loss of traffic can also occur when you return the first port to service after you busy all the ports.

To manually busy the port for the link that you selected in step 4, type

>BSY ms_no PORT port_no

and press the Enter key.

where

ms_no
is the number of the MS (0 or 1) for the link that you selected in step 4

port_no
is the number of the port (0 to 3) for the link that you selected in step 4

Example of a MAP response:

```
Request to MAN BUSY MS:1 shelf:0 card:10 port:0 submitted
Request to MAN BUSY MS:1 shelf:0 card:10 port:0 passed
```

If the BSY command	Do
passed	step 9
failed	step 73

9 To test the port, type

>TST ms_number PORT port_number

and press the Enter key.

where

ms_number
is the number of the MS (0 or 1) that contains the affected card

port_number
is the number of the system-busy port (0 to 127)

Example of a MAP response:

```
Request to TEST OOS MS:0 shelf:0 card:4 port 1 submitted.
Request to TEST OOS MS:0 shelf:0 card:4 port 1 passed.
```

If the TST command	Do
passed	step 25

Returning LIM-to-MS links to service for an ELPP (continued)

If the TST command	Do
passed with `Istb`, and the system generates a card list	step 10
failed, and the system generates a card list	step 10
other than listed here	step 73

10 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the first card on the list.

11 To access the MS level of the MAP display, type

>MS

and press the Enter key.

12 Determine the clocking configuration.

Note: The clocking configuration appears under the Clock header of the MAP display.

If the MS that contains the card that you want to replace is	Do
the slave MS, indicated by `Slave` under the Clock header	step 16
the master MS, indicated by `Master or M Free` under the Clock header	step 13

13 To switch clock mastership, type

>SWMAST

and press the Enter key.

Example of a MAP response:

```
Request to Switch Clock Mastership MS: 0 submitted.
Request to Switch Clock Mastership MS: 0 passed.
```

If the SWMAST command	Do
passed	step 15
failed	step 14

14 Perform the procedure *Failure to switch clock mastership* in this document. Complete the procedure and return to this point.

15 Wait 10 min to make sure the MS is stable. Continue this procedure.

Returning LIM-to-MS links to service for an ELPP (continued)

16 To manually busy the MS that contains the card that you want to replace, type

>BSY ms_number

and press the Enter key.

where

ms_number
is the number of the MS (0 or 1) that contains the card that you want to replace

Example of a MAP response:

```
Request to MAN BUSY MS: 0 submitted.
Request to MAN BUSY MS: 0 passed.
```

If the response is	Do
P-side nodes will be isolated-taken Out Of Service. BSY Aborted.	step 73
Remaining links to P-side nodes are unstable.	step 73
Request to MAN BUSY MS:0 passed	step 17
Request to MAN BUSY MS:1 passed	step 17
Request to MAN BUSY MS:0 failed	step 73
Request to MAN BUSY MS:1 failed	step 73
other than listed here	step 73

17 To replace the card, perform the correct procedure in *Card Replacement Procedures.* Complete the procedure and return to this point.

18 To perform an out-of-service test on the manual-busy MS, type

>TST ms_number

and press the Enter key.

where

ms_number
is the number of the manual-busy MS (0 or 1)

If the TST command	Do
passed	step 22
passed with `Istb`, and the system generates a card list	step 19

Returning LIM-to-MS links to service for an ELPP (continued)

If the TST command	Do
passed with `Istb`, and you replaced all the cards on the list	step 73
failed, and you replaced all the cards on the list	step 73
failed, and the system generates a card list	step 20
other than listed here	step 73

19 Record the location, description, slot number, PEC, and PEC suffix of the next card on the list.

Go to step 17.

20 Determine if you replaced all the cards on the list.

If you	Do
replaced all the cards on the list	step 73
did not replace all the cards on the list	step 21

21 Record the location, description, slot number, PEC, and PEC suffix of the first card listed that you did not replace.

Go to step 17.

22 To return the manual busy MS to service, type

`>RTS ms_number`

and press the Enter key.

where

ms_number
is the number of the manual busy MS (0 or 1)

Example of a MAP response:

```
Request to RTS MS: 0 submitted.
Request to RTS MS: 0 passed.
```

If the RTS command	Do
passed	step 23
failed	step 73

23 To access the Shelf level of the MAP, type

`>SHELF`

Returning LIM-to-MS links to service for an ELPP (continued)

and press the Enter key.

Example of a MAP display:

```
Shelf 0                  1 1 1 1
Card   1 2 3 4 5 6 7 8 9 0 1 2 3
Chain
MS 0   . . . M . . . . . . . .
MS 1   . . . . . . . . . . . .
```

24 To post the card number for the link that you selected in step 4, type

>CARD card_number

and press the Enter key.

where

card_number
is the number of the affected card (6 to 25)

Example of a MAP response:

```
Card 04 CMIC Interface Card Port: 0 1
MS 0             I                . M
MS 1             I                . .
```

25 To return the port to service, type

>RTS ms_number PORT port_number

and press the Enter key.

where

ms_number
is the number of the MS (0 or 1) for the link that you selected in step 4

port_number
is the number of the port (0 to 3) for the link that you selected in step 4

Example of a MAP response:

```
Request to RTS MS:1 shelf:0 card:10 port:0 submitted
Request to RTS MS:1 shelf:0 card:10 port:0 passed
```

If the RTS command	Do
passed, and you worked on all MS ports that you recorded in step 3	step 26
passed, and you did not work on all MS ports that you recorded in step 3	step 4

Returning LIM-to-MS links to service for an ELPP (continued)

If the RTS command	Do
failed, and you worked on all MS ports that you recorded in step 3	step 26
failed, and you did not work on all MS ports that you recorded in step 3	step 4

26 Determine if you returned all MS ports to service that you recorded in step 3.

If you	Do
returned all MS ports to service	step 27
did not return all MS ports to service	step 73

27 To access the PM level of the MAP display, type

>PM

and press the Enter key.

28 To post the LIM that lost links to the MS, type

>POST LIM lim_no

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 16) that lost links to the MS

Example of a MAP display:

```
LIM 1 ISTb      OOS     OOS_Taps
           Links  LIS1 LIS2 LIS3
Unit0: ISTb    2   .    .    .
Unit1: InSv    .   .    .    .
```

29 Determine the state of the LIM unit that you worked on when you started this procedure.

If the state of the LIM unit is	Do
ISTb	step 32
ManB	step 30

30 To determine if the links between the LIM unit and the MS are open, type

>TRNSL unit_no

and press the Enter key.

Returning LIM-to-MS links to service for an ELPP (continued)

where

unit_no
is the number of the LIM unit (0 or 1) you are working on

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 – MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 – MS 0:20:0) Open
LIM 1 UNIT 0 LINK 2 (9:2 – LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 – MS 0:21:1) Open
LIM 1 UNIT 0 LINK 5 (10:1 – MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 – LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the previous example, links 0, 1, 4, and 5 go from the LIM to the MS.

If all links are	Do
Open	step 31
other than listed here	step 52

31 To return the LIM unit to service, type

>RTS UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 74
failed, and the system generated a card list	step 53
failed, and the system did not generate a card list	step 73

32 To determine if the links between the LIM unit and the MS are open, type

>TRNSL unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) that you are working on

Example of a MAP response:

Returning LIM-to-MS links to service for an ELPP (continued)

```
LIM 1 UNIT 0 LINK 0 (9:0 – MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 – MS 0:20:0) Open
LIM 1 UNIT 0 LINK 2 (9:2 – LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 – MS 0:21:1) Open
LIM 1 UNIT 0 LINK 5 (10:1 – MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 – LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

If all links are	Do
Open	step 33
other than listed here	step 66

33 Determine if the LIM unit state changes from in-service trouble to in-service. Wait 8 min.

Note: In the example in step 32, the LIM unit state appears on the right of the LIM1.

If in 8 min the LIM unit state is	Do
InSv	step 74
ISTb	step 34

34 To display more information about the fault, type

`>QUERYPM UNIT unit_no FLT`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

If the response	Do
indicates that a fault is present, and the system generated a card list	step 36
is other than listed here	step 35

35 To test the LIM unit, type

`>TST UNIT unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Returning LIM-to-MS links to service for an ELPP (continued)

Example of a MAP response:

```
LIM 4 UNIT 1 Test initiated.
```

If the TST command	Do
passed	step 74
failed, and the system generated a card list	step 36
failed, and the system did not generate a card list	step 73

36 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

37 To access the LIS level of the MAP display, type

`>LIS  lis_no`

and press the Enter key.

where

lis_no
is the number of the link interface shelf (LIS) (1 to 3)

Example of a MAP display:

```
LIM 1 ISTb      OOS     OOS_Taps
           Links LIS1 LIS2 LIS3
Unit0: ISTb    2   .   .    .
Unit1: InSv    2   .   .    .

LIS 1      Tap: 0       4     8
FBus0:  ManB    BBBB    BBBB  ----
FBus1:  InSv    ...M    .I..  .S..
```

Note: In the previous example, B under a tap number indicates that the F-bus is manual busy. The B also indicates the controlling LIM unit is system busy or manual busy. A dot (.) indicates an in-service tap. An M indicates a manual busy tap. An I indicates an in-service trouble tap. An S indicates a system busy tap. A hyphen (-) indicates a tap that is not equipped.

Returning LIM-to-MS links to service for an ELPP (continued)

38

WARNING
Possible loss of service
Make sure that the mate F-bus is in service before you busy the LIM unit that is in-service trouble. Make sure that the taps for equipped and online nodes are also in service before you manually busy the LIM unit that is in service trouble. Failure to proceed in this order can isolate application-specific units (ASU) on link interface shelves 1, 2, and 3.

Determine the state of the mate F-bus.

Note: F-bus 1 is the mate F-bus if you work on LIM unit 0. The F-bus 0 is the mate F-bus if you work on LIM unit 1. The F-bus state appears on the right of the words FBus0 or FBus1 in the example MAP display in step 37.

If the state of the mate F-bus is	Do
InSv or ISTb	step 41
other than listed here	step 39

39 Perform the procedure *Clearing a PM LIMF major alarm* in this document to return the mate F-bus to service. Complete the procedure and return to this point.

40 To access the LIS level of the MAP display, type

`>MAPCI;MTC;PM;POST LIM lim_no;LIS lis_no`

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 16) that you are working on

lis_no
is the number of the LIS (1 to 3) that you are working on

41 Determine the state of the taps on the mate F-bus.

Note: The tap states appear in the two rows of characters under the numbers 0 to 11. The tap states appear in the example in step 37.

If the taps on the mate F-bus are	Do
in service (.) or in-service trouble (`I`)	step 44
manually busy (`M`) or system busy (`S`)	step 42

Returning LIM-to-MS links to service for an ELPP (continued)

42 Perform the correct alarm clearing procedure in this document to return the taps to service. Complete the procedure and return to this point.

43 To acess the LIS level of the MAP display, type

`>MAPCI;MTC;PM;POST LIM lim_no;LIS lis_no`

and press the Enter key.

where

lim_no
is the number of the LIM (0 to 16) that you are working on

lis_no
is the number of the LIS (1 to 3) that you are working on

44

WARNING
Loss of service
You must busy the F-bus for the in-service trouble LIM unit you are working on before you busy the LIM unit. Failure to proceed in this order can cause a loss of messaging for all ASUs in the ELPP that carry the traffic.

To manually busy the F-bus for the LIM unit you are working on, type

`>BSY FBUS fbus_no`

and press the Enter key.

where

fbus_no
is the number of the F-bus (0 or 1)

If the response is	Do
LIM x FBus y Busy initiated. LIM x FBus y Busy passed.	step 46
LIM x LIS y FBus z Busy requires confirmation because the action may cause a SEVERE system OUTAGE. The following NIU(s) may be active on this bus:NIU # unit # Do you wish to proceed with this operation? Please confirm ("YES", "Y", "NO", or "N"):	step 45

45 To confirm the command, type

`>YES`

and press the Enter key.

Example of a MAP display:

Returning LIM-to-MS links to service for an ELPP (continued)

```
            Tap:   0       4       8
FBus0: ManB        BBBB    BBBB    BBBB
FBus1: InSv        ....    ....    ....

LIM 1 FBus 0 Busy initiated.
LIM 1 FBus 0 Busy passed.
```

Note: In the example, F-bus 0 is manually busy.

46 Repeat steps 37 to 44 for the other two LISs.

If you did	Do
work on all three LISs	step 47
not work on all three LISs	step 37

47 To force the LIM unit to busy, type

>BSY UNIT unit_no FORCE

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

```
LIM 1 UNIT 0 Busy initiated.
```

If the response is	Do
LIM x UNIT y Busy requires confirmation because the action will abort the current imaging process on LIM x UNIT y. Do you wish to proceed? Please confirm (“YES", “Y", “NO", or “N"):	step 48
LIM x UNIT y Busy requires confirmation because the action may cause a SEVERE system OUTAGE by isolating other nodes. Please confirm (“YES", “Y", “NO", or “N"):	step 49

Returning LIM-to-MS links to service for an ELPP (continued)

If the response is	Do
Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed? Please confirm (“YES", “Y", “NO", or “N"):	step 50
Bsy of LIM x UNIT y will abort the current imaging process on LIM x UNIT y and UNIT z. LIM x UNIT y Busy requires confirmation because the action may also cause a SEVERE system OUTAGE by isolating other nodes. Do you wish to proceed? Please confirm (“YES", “Y", “NO", or “N"):	step 51
anything else	step 55

48 The LIM unit you are working on is imaging. Contact your next level of support to determine when it is safe to proceed. Continue with this procedure when instructed to do so.

49 The mate unit is not in service. Busying the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.

50 The LIM unit you are working on is imaging. The mate unit is not in service. Busying the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.

51 The LIM unit you are working on and the mate unit are imaging. The mate unit is not in service. Busying the unit you are working on can cause a service outage. Contact your next level of support to determine if it is safe to proceed and proceed as instructed.

52 To test the LIM unit, type

>TST UNIT unit_no

and press the Enter key.

where

Returning LIM-to-MS links to service for an ELPP (continued)

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

```
LIM 4 UNIT 1 Test initiated.
```

If the TST command	Do
passed	step 65
failed, and the system generated a card list	step 54
failed, and the system did not generate a card list	step 73

53 To test the LIM unit, type

>TST UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1)

Example of a MAP response:

```
LIM 4 UNIT 1 Test initiated.
```

If the TST command	Do
passed	step 74
failed, and the system generated a card list	step 54
failed, and the system did not generate a card list	step 73

54 Record the location, description, slot number, product engineering code (PEC), and PEC suffix of the cards on the list.

55 To reset the manual busy LIM unit, type

>PMRESET UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the manual busy LIM unit (0 or 1)

If the PMRESET command	Do
passed	step 64

Returning LIM-to-MS links to service for an ELPP (continued)

If the PMRESET command	Do
failed	step 56

56 To load the LIM unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit to reload (0 or 1)

If the LOADPM command	Do
passed	step 64
other than listed here	step 57

57 Replace the NT9X17 card for this unit. Perform the correct procedure in *Card Replacement Procedures*. Complete the procedure and return to this point.

58 To reload the LIM unit, type

>LOADPM UNIT unit_no

and press the Enter key.

where

unit_no
is the number of the LIM unit to reload (0 or 1)

If the LOADPM command	Do
passed	step 64
failed, and you did not replace the NT9X62 card for this unit	step 60
failed, and you replaced the NT9X62 card for this unit	step 59

59 Make sure you replaced all the cards on the list that you recorded.

If you	Do
did not replace all the cards on the list you recorded	step 62
replaced all the cards on the list you recorded	step 73

Returning LIM-to-MS links to service for an ELPP (continued)

60 Replace the NT9X62 card for this unit. Perform the correct procedure in the *Card Replacement Procedures*. Complete the procedure and return to this point.

61 Go to step 58.

62 Replace the next card on the list you recorded. Perform the correct procedure in the *Card Replacement Procedures*. Complete the procedure and return to this point.

63 Go to step 58.

64 To return the LIM unit to service, type

`>RTS UNIT unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) to return to service

If the RTS command	Do
passed	step 65
failed	step 73

65 To determine if the LIM-to-MS links are open, type

`>TRNSL unit_no`

and press the Enter key.

where

unit_no
is the number of the LIM unit (0 or 1) that lost its MS links

Example of a MAP response:

```
LIM 1 UNIT 0 LINK 0 (9:0 – MS 1:20:0) Open
LIM 1 UNIT 0 LINK 1 (9:1 – MS 0:20:0) Other end closed
LIM 1 UNIT 0 LINK 2 (9:2 – LIM 1:30:2) Open
LIM 1 UNIT 0 LINK 3 is unequipped.
LIM 1 UNIT 0 LINK 4 (10:0 – MS 0:21:1) Other end closed
LIM 1 UNIT 0 LINK 5 (10:1 – MS 1:21:1) Open
LIM 1 UNIT 0 LINK 6 (10:2 – LIM 1:29:2) Open
LIM 1 UNIT 0 LINK 7 is unequipped.
```

Note: In the example, links 0, 1, 4, and 5 go from the LIM to the MS.

If the states of all the LIM-to-MS links are	Do
Open	step 74
other than listed here	step 66

Returning LIM-to-MS links to service for an ELPP (continued)

66 Record the following information for all LIM-to-MS links that are not open.

- LIM number
- LIM unit number
- link number
- LIM card number
- LIM port number
- MS number
- MS card number
- MS port number

Note: The example in step 65 shows LIM 1 UNIT 0 LINK 1 (9:1 - MS 0:20:0) Other end closed. This line in the MAP response indicates that a SR128 link (link 1) terminates on LIM 1, unit 0, card 09R, port 1. The SR128 link (link 1) also terminates on MS 0, logical card 20, port 0.

67 The links that you recorded in step 66 can have faults . Replace any cards that have faults.

68 To access the Shelf 0 level of the MAP display, type

```
>MAPCI;MTC;MS;SHELF  0
```

and press the Enter key.

69 To post the logical MS card number that you recorded in step 66, type

```
>CARD  card_no
```

and press the Enter key.

where

card_no
is the logical card number that you recorded in step 66

70 To determine the MS slot number for the NT9X62 paddleboard on which the SR128 link between the LIM and MS terminates, type

```
>TRNSL  ms_no  PORT  port_no
```

and press the Enter key.

where

ms_no
is the number of the MS (0 or 1) that you recorded in step 66

port_no
is the number of a port (0 to 3) that you recorded in step 66

Note: For each MS logical card number that you recorded in step 66, there is a slot number that belongs to an NT9X62 paddleboard.

Example input:

```
>TRNSL  0  PORT  0
```

Example of a MAP response:

Returning LIM-to-MS links to service for an ELPP (end)

```
Site    Flr RPos Bay_id  Shf   Description  Slot EqPEC
HOST    01  A00  DPCC    0  39 MS 0:0:10    16  9X17AD FRNT
HOST    01  A00  DPCC    0  39 MS 0:0:10    16  9X62BB BACK
Port 0=LIM 2 (OK :Opened)
```

Note: The line `MS 0:0:10 16 9X62BB BACK`, appears in the example response. This line indicates that a SR128 link terminates on an NT9X62 card in slot 16R, on MS 0, shelf 0, logical card 10. The SR128 link is between the LIM and MS.

71 Record the MS slot number for the NT9X62 paddleboard on which the SR128 link between the LIM and MS terminate.

72 Determine if you recorded the MS slot number for all MS logical card numbers that you recorded in step 66.

If you	Do
recorded all the slot numbers	step 73
did not record all the slot numbers	step 69

73 For addditional help, contact the next level of support.

74 The procedure is complete. Return to the main procedure that sent you to this procedure and continue as directed.

Running a C7BERT

Application

Use this procedure to perform the following:

- local or remote loopback on an NT9X77AA, NT9X78BA, NT9X78CA, NT9X78DA or NT9X78DB card for LIUBASIC
- local or remote loopback on an NTEX26AA channelized access link
- link fault sectionalization
- CCS7 bit error rate test (C7BERT)
- inject bit errors during C7BERT

Use this procedure to run the CCS7 bit error rate test (C7BERT).

Definition

Bit error rate tests measure the quality of a CCS7 digital transmission path.

Run a C7BERT under the following conditions:

- before you put a CCS7 signaling link into service
- when you isolate faults

Common procedures

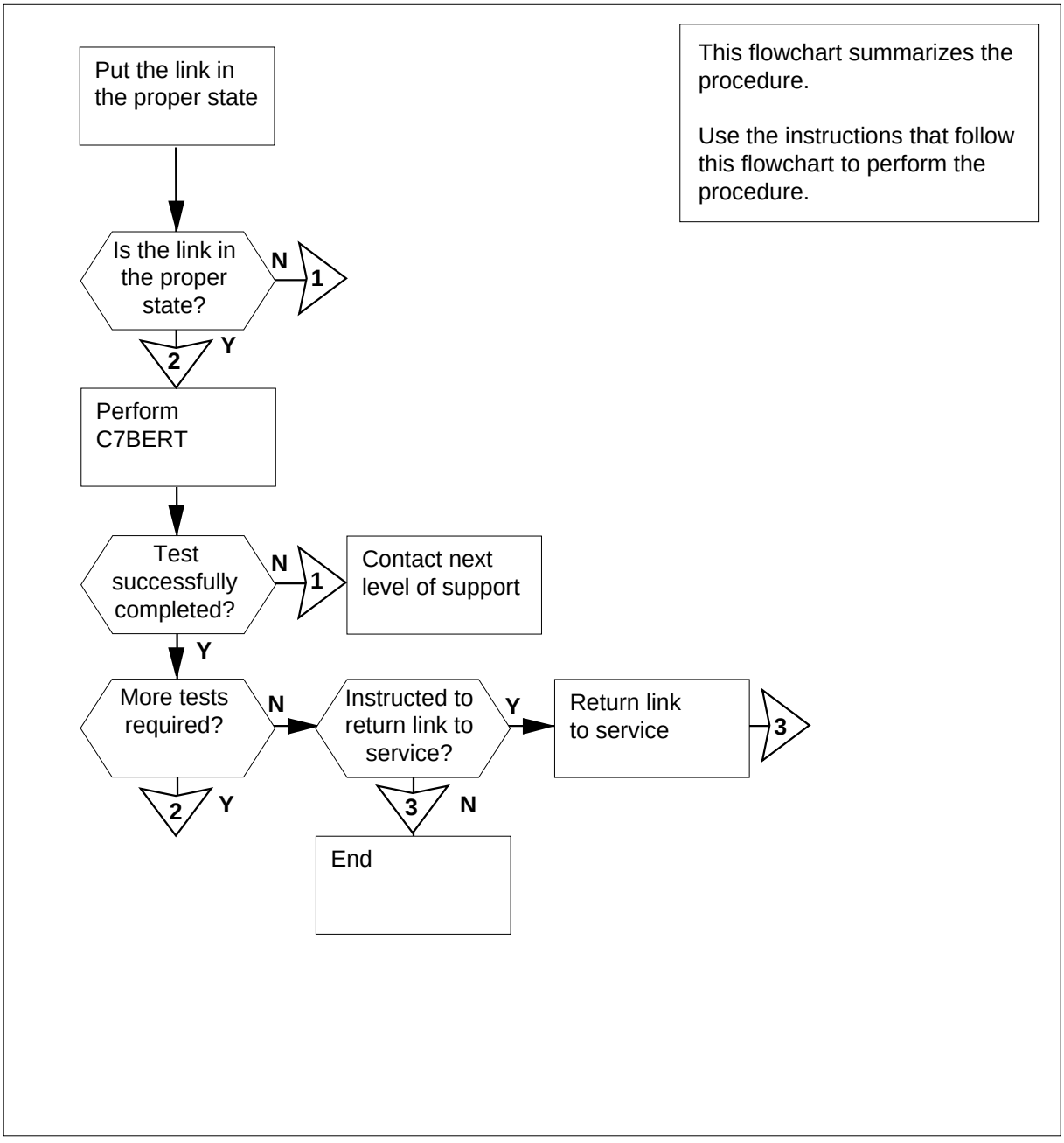
There are no common procedures.

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

Running a C7BERT (continued)

Summary of Running a C7BERT



Running a C7BERT

ATTENTION

To run link fault sectionalization (LFS) the SOC option TEL0007 must have the RTU set to "Y" and the state set to "on".

ATTENTION

If link fault sectionalization (LFS) is activated, an anomaly in the NT9X78BA and NT9X78CA cards can cause latch past to occur. When the last DS0DP is a BA or CA paddle board, LFS may latch past the last DS0DP link.

For example, if the fifth and last device in a link is a BA or CA card, LFS may latch the sixth or seventh DS0DP.

Before running this procedure, check the number and type of devices on a link. This information helps reduce the link diagnosis time.

At the MAP terminal

1 Contact the next level of support to obtain the following information:

- how the test stops (manually or automatically)
- if reports are necessary and how many times each hour (1 to 12)

2 If you perform a remote loopback, inform operating company personnel at the far-end office that

- you must busy and deactivate the link
- operating company personnel must busy and deactivate the link at that end

3 To access the C7LKSET level of the MAP display, type

`>MAPCI;MTC;CCS;CCS7;C7LKSET`

and press the Enter key.

Example of a MAP response:

```
    Traf Sync                                          Link
LK  Stat Stat  Resource Stat Physical Access Stat      Action
```

4 To post the LINKSET that includes the link that you want to test, type

`>POST  C  linkset_name`

and press the Enter key.

Running a C7BERT (continued)

where

linkset_name
is the name of the LINKSET (as defined in table C7LKSET)

Example of a MAP response:

```
   Traf Sync                                        Link
LK Stat Stat Resource Stat Physical Access Stat  Action
0  OffL DAct LIU7 12  OffL DS0A
1  ManB DAct LIU7 13  InSv DS0A
Size of Posted Set = 2
```

If the LINKSET	Do
has a minimum of five entries	step 5
has a maximum of four entries	step 6

5 To display the rest of the links in the LINKSET, type

>NEXT

and press the Enter key.

6 Determine the state of the LIU7 for the link you want to test.

Note: The LIU7 state appears under the STAT header on the right of Resource.

If the LIU7 state	Do
is SysB or OffL	step 7
is ManB	step 10
is InSv or ISTb	step 12
is other than listed here	step 67

7 To access the PM level of the MAP display, type

>PM

and press the Enter key.

Example of a MAP display:

```
         SysB   ManB   OffL   CBsy   ISTb   InSv
 PM         1     10     12      0      6     49
```

8 To post the LIU7, type

>POST LIU7 liu7_no

and press the Enter key.

Note: The number of the LIU7 is under the Resource header of the MAP display. In the example in step 4, the LIU7 connected to link 1 is 13.

where

liu7_no
is the number of the LIU7 connected to the link you want to test

Example of a MAP response:

```
LIU7 13 InSv
```

9 To force the LIU7 to busy, type

>BSY F0RCE

and press the Enter key.

If the BSY command	Do
passed	step 10
failed	step 67

10 To reset the LIU7, type

>PMRESET

and press the Enter key.

If the PMRESET command	Do
passed	step 11
failed	step 67

11 To return the LIU7 to service, type

>RTS

and press the Enter key.

If the RTS command	Do
passed	return to C7LKSET level of MAP
failed	step 67

12 Determine the traffic state of the link that you want to test.

Note: The traffic state of the link appears under the Traf Stat header of the MAP display.

If the traffic state	Do
is ManB	step 15
is other than listed here	step 13
is other than listed here	step 14

Running a C7BERT (continued)

13 To inhibit the link that you want to test, type

>INH link_no

and press the Enter key.

where

link_no
is the number of the link that you want to test (0 to 15)

If the INH command	Do
passed	step 14
failed	step 67

14 To manually busy the link, type

>BSY link_no

and press the Enter key.

where

link_no
is the number of the link that you want to test (0 to 15)

If the BSY command	Do
passed	step 12
failed	step 67

15 Determine the synchronization state of the link.

Note: The synchronization state of the link appears under the Sync Stat header.

Example of a MAP response:

```
   Traf Sync                                        Link
LK Stat Stat Resource Stat Physical  Access Stat  Action
0  OffL DAct LIU7 12  OffL DS0A
1  ManB DAct LIU7 13  InSv DS0A
```

If the synchronization state	Do
is DAct	step 16
is other than listed here	step 17

16 To activate the link, type

>ACT link_no

and press the Enter key.

where

link_no
is the number of the link that you want to test (0 to 15)

If the ACT command	Do
passed	step 17
failed	step 67

17 To deactivate the link, type

>DEACT link_no FORCE

and press the Enter key.

where

link_no
is the number of the link that you want to test (0 to 15)

Note: The response can take a maximum of 10 min.

If the DEACT command	Do
passed	step 18
failed	step 67

18 To access the C7BERT level of the MAP display, type

>C7BERT

and press the Enter key.

19 To perform a local loopback, proceed to step 20

To perform a remote loopback, proceed to step 21

To perform a link fault sectionalization, proceed to step 67

20 To activate a local loopback, type

>PMLOOP LOCON link_no

and press the Enter key.

where

link_no
is the number of the link that you want to test (0 to 15)

If the response	Do
is `Link 1: Loopback Local on completed`	step 30
is `Link 1: Failed - PMLOOP <Local|Remote> is already active`	step 48 or 49

Running a C7BERT (continued)

If the response	Do
is `Link 1: Failed - C7BERT already active on this link`	step 23
is `This command is not implemented`	step 22
is `Link nn: Failed - PM not equipped with 9X78DA or 9X78DB`	step 22
is `Link 1: Loopback Local on completed. WARNING: In DTE mode, the V.35 clock must be present for C7BERT to pass`	step 67
is other than listed here	step 67

21 To activate a remote loopback, type

`>PMLOOP RMTON link_no`

and press the Enter key.

where

link_no
is the number of the link that you want to test (0 to 15)

If the response	Do
is `Link 1: Loopback Remote On completed`	step 30
is `Link 1: Failed - PMLOOP <Local|Remote> is already active`	step 48 or 49
is `Link 1: Failed - C7BERT already active on this link`	step 23
is `This command is not implemented`	step 22
is `Link 1: Loopback Remote On completed. WARNING: In DTE mode, the V.35 clock must be present for C7BERT to pass`	step 67

If the response	Do
is `Failed – Unable to seize trunk`	Check the DTC that corresponds and try the remote loopback again.
is `Failed – Unable to set up NIU connection (NIU-LIU)`	Check the NIU that corresponds and try the remote loopback again.
is other than listed here	step 67

22 PM loop functionality is not available on your switch.

If	Do
you want to run a C7BERT	step 24
other than listed here	step 67

23 To stop the present C7BERT, type

`>STOP link_no`

and press the Enter key.

where

link_no
is the number of the link that you entered in PMLOOP command

Note: The STOP command overrides any set stop time without warning.

If the response	Do
is Link 1: C7BERT stopped	repeat PMLOOP
is other than listed here	step 67

24 Apply manual loopbacks to the network elements you want to test.

25 To determine if a stop time is set, type

`>SETSTOP link_no STATUS`

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

If the response	Do
is Link nn: Stop time set at: time	step 26

Running a C7BERT (continued)

If the response	Do
is Link nn: No stop time has been set	step 27
is other than listed here	step 67

26 To clear the stop time, type

>SETSTOP link_no CLEAR

and press the Enter key.

where

link_no
is the number of the link on which the C7BERT runs

If the response	Do
is Stop time cleared	step 27
is other than listed here	step 67

27 To set the new stop time, type

>SETSTOP link_no SET day hours minutes

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

day
is the day you want the test to stop automatically (MON, TUE, WED, THU, FRI, SAT or SUN)

hours
is the hour you want the test to stop automatically (0 to 23)

minutes
is the minute you want the test to stop automatically (00 to 59)

Example input:

>SETSTOP 3 SET MON 10 30

Note: The example entry sets the stop time for link 3 on Monday at 10:30 a.m.

If the response	Do
is Link nn: Stop time set at: 19xx/yy/zz hh:mm:00.000 ddd	step 28

Running a C7BERT (continued)

If the response	Do
is other than listed here	step 67

28 Determine if the stop time is correct.

If the stop time	Do
is correct	step 29
is not correct	step 26

29 Wait until the stop time.

Go to step 45.

30 To start the C7BERT, type

`>START link_no`

and press the Enter key.

where

link_no
is the number of the link that you want to test (0 to 15)

If the response	Do
is Link n: C7BERT started	step 31
is Link n:Failed - Link state is invalid for C7BERTLink must be ManB and DAct (or LFS)	step 6
is other than listed here	step 67

31 To display the test results of the C7BERT, type

`>QUERY link_no PR`

and press the Enter key.

where

link_no
is the number of the link that you test (0 to 15)

Example of a MAP response:

Running a C7BERT (continued)

```
query 1 pr
Link  1: C7BERT query
Run Time     :       662   Err Free Secs:       662
Tx Frames    :     19016   Rx Sync Errs :         0
Rx Frames    :     19019   Rx Bad Frames:         0
Rx Bit Errors:         0   Rx Bits      :  38931896
Bit Err Rate : 0 x 10–15
```

If the response	Do
is a display of C7BERT statistics	step 32
is other than listed here	step 67

32 Determine if the transmission of any Tx frames occurred.

Note: The number of frames transmitted appears on the right of the Tx Frames header of the MAP display. In the example in step 31, the number of frames transmitted is 19 016 .

If Tx frames	Do
transmitted	step 33
did not transmit	step 67

33 The test runs correctly. The system generates test results when:

- you request reports
- you stop the test manually
- you stop the test automatically at a set time

Determine your next action.

Note: If a switch restart occurs when a C7BERT runs on a link, the test stops automatically. The test also stops when the LIU7 associated with the link fails.

If	Do
you want to request reports at exact intervals	step 40
you want to stop the test manually	step 44
you want to stop the test automatically at a set time	step 50

Running a C7BERT (continued)

If	Do
the link connects to a NT9X77AA or a NT9X78BA/CA/DA/DB card and you want to inject bit errors	step 34

34 To display C7BERT results, type

>QUERY link_no PR

and press the Enter key.

where

link_no
is the number of the link to test (0 to 15)

Example of a MAP response:

```
Link 1: C7BERT query
Run Time     :      1224   Err Free Secs:      1133
Tx Frames    :     32538   Rx Sync Errs :         0
Rx Frames    :     32580   Rx Bad Frames:         1
Rx Bit Errors:         0   Rx Bits      :  66673662
Bit Err Rate : 1 x 10– 8
```

If the response	Do
is a result of test statistics	step 35
is other than listed here	step 67

35 Record the number of Rx bit errors.

Note: In the example in step 34, the number of bit errors received appears on the right of Rx bit errors.

36 To inject bit errors, type

>INJERR link_no

and press the Enter key.

where

link_no
is the number of the link that you tested in step 30

Example of a MAP response:

```
injerr 1
```

If the response	Do
is Link 1: INJECT ERROR completed	step 37

Running a C7BERT (continued)

If the response	Do
is Link n:Failed - C7BERT is not active on this link	step 30
is other than listed here	step 67

37 To display the results of injected bit errors, type

>QUERY link_no PR

and press the Enter key.

where

link_no
is the number of the link to test (0 to 15)

Example of a MAP response:

```
Link  1: C7BERT query
Run Time     :      1134   Err Free Secs:      1133
Tx Frames    :     32568   Rx Sync Errs :         0
Rx Frames    :     32570   Rx Bad Frames:         1
Rx Bit Errors:         6   Rx Bits      :  66670792
Bit Err Rate : 1 x 10– 8
```

If the response	Do
is a result of test statistics	step 38
is other than listed here	step 67

38 Determine the result of injected bit errors.

Note: In the example in step 37, the number of bit errors received appears on the right of Rx Bit Errors.

39 Subtract the result of the C7BERT that you recorded in step 35 from the result that you obtained in step 38.

If the difference	Do
is six	step 33
is other than listed here	step 67

40 To determine if report requests occurred, type

>REPORT link_no STATUS

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

If the response	Do
is Link nn: Report interval already set at: mm times per hour	step 41
is Link nn: Automatic query reporting is not active	step 42
is other than listed here	step 67

41 To clear the previous report interval, type

>REPORT link_no OFF

and press the Enter key.

where

link_no
is the number of the link on which the C7BERT runs

Example of a MAP response:

```
Link nn: Automatic query reporting has been terminated
```

42 To set the number of reports for each hour, type

>REPORT link_no ON number

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

number
is the number of reports for each hour (1 to 12)

Example input:

>REPORT 1 ON 6

If the response	Do
is Link nn: Report interval set at: nn times per hour	step 43
is other than listed here	step 67

43 Determine if the report interval is correct.

If the interval	Do
is correct	step 33

Running a C7BERT (continued)

If the interval	Do
is not correct	step 41

44 To stop the C7BERT, type

>STOP link_no

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

Note: The STOP command overrides any set stop time without warning.

If the response	Do
is Link 1: C7BERT stopped with a display of test statistics	step 45
is other than listed here	step 67

45 Give the results to the next level of support.

If the link	Do
terminates on an NT9X77AA, NT9X78BA/CA/DA/DB, or NTEX26AA card. You ran a PM local or remote loopback. You must return the link to service	step 48 or 49
terminates on an NT9X77AA, NT9X78BA/CA/DA/DB, or NTEX26AA card. You ran a PM local or remote loopback. You must perform more tests	step 48 or 49
does not terminate on an NT9X77AA, NT9X78BA/CA/DA/DB, or NTEX26AA card	step 46
is other than listed here	step 111

46 Remove the manual loopback across network elements.

47 Your next step depends on the instructions that you received from the next level of support.

If	Do
instructed to return the link to service	step 55
instructed to perform more tests	step 24

Running a C7BERT (continued)

If	Do
other than listed here	step 111

48 To deactivate a local loopback, type

>PMLOOP LOCOFF link_no

and press the Enter key.

where

link_no
is the number of the link that you tested in step 20

If the response	Do
is `pmloop off 1Link 1: Loopback Local off completed`	step 55
is other than listed here	step 67

49 To deactivate a remote loopback, type

>PMLOOP RMTOFF link_no

and press the Enter key.

where

link_no
is the number of the link that you tested in step 20

If the response	Do
is `pmloop off 1Link 1: Loopback Remote off completed`	step 55
is other than listed here	step 67

50 To determine if a stop time is set, type

>SETSTOP link_no STATUS

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

If the response	Do
is Link nn: Stop time set at:time	step 51

Running a C7BERT (continued)

If the response	Do
is Link nn: No stop time has been set	step 52
is other than listed here	step 67

51 To clear the stop time, type

>SETSTOP link_no CLEAR

and press the Enter key.

where

link_no
is the number of the link on which the C7BERT runs

If the response	Do
is Stop time cleared	step 52
is other than listed here	step 67

52 To set the new stop time, type

>SETSTOP link_no SET day hours minutes

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

day
is the day you want the test to stop automatically (MON, TUE, WED, THU, FRI, SAT, or SUN)

hours
is the hour you want the test to stop automatically (0 to 23)

minutes
is the minute you want the test to stop automatically (00 to 59)

Example input:

>SETSTOP 3 SET MON 10 30

Note: The example entry sets the stop time for link 3 on Monday at 10:30 a.m.

If the response	Do
is Link nn: Stop time set at: 19xx/yy/zz hh:mm:00.000 ddd	step 53

Running a C7BERT (continued)

If the response	Do
is other than listed here	step 67

53 Determine if the stop time is correct.

If the stop time	Do
is correct	step 54
is not correct	step 51

54 Wait until the stop time.

Go to step 45.

55 To quit the C7BERT level of the MAP display, type

`>QUIT`

and press the Enter key.

56 To activate the link on which the C7BERT ran, type

`>ACT link_no`

and press the Enter key.

where

link_no
is the number of the link (0 to 15)

If the ACT command	Do
passed	step 57
failed	step 67
generates a response other than listed here	step 67

57 Determine the synchronization state of the link.

Note: The synchronization state appears under the Sync Stat header of the MAP display.

If the synchronization state	Do
is Alnd	step 64
is other listed here	step 58

58 Wait 8 min, and continue this procedure.

Running a C7BERT (continued)

59 Determine the synchronization state of the link.

If the synchronization state	Do
is not Alnd, and you did not ask the far-end office to activate the link	step 60
is not Alnd, and you asked the far-end office to activate the link	step 62

60 Determine from office records the far-end office that connects to the linkset posted in step 4.

61 Contact the far-end office. Tell operating company personnel at the location that:

- you must busy and deactivate the link to align the link again
- the link activates from both ends after you busy and deactivate the link

Go to step 57.

62 To deactivate the link, type

>DEACT link_no FORCE

and press the Enter key.

where

link_no
is the number of the link that you activated in step 56

63 Tell operating company personnel at the far-end office to activate the link. To activate the link from your end, type

>ACT link_no

and press the Enter key.

where

link_no
is the number of the link that you activated in step 56

If the ACT command	Do
passed	step 64
failed	step 67

64 To return the link to service, type

>RTS link_no

and press the Enter key.

where

link_no
is the number of the link that you activated in step 56

If the RTS command	Do
passed	step 65
failed	step 67

65 To uninhibit the link, type

>UINH link_no

and press the Enter key.

where

link_no
is the number of the link that you activated in step 56

If the UINH command	Do
passed	step 111
failed	step 67

66 For additional help, contact the next level of support.

67

ATTENTION

To run link fault sectionalization (LFS) the SOC option TEL0007 must have the RTU set to "Y" and the state set to "on".

ATTENTION

If link fault sectionalization (LFS) is activated, an anomaly in the NT9X78BA and NT9X78CA cards can cause latch past to occur. When the last DS0DP is a BA or CA paddle board, LFS may latch past the last DS0DP link.

For example, if the fifth and last device in a link is a BA or CA card, LFS may latch the sixth or seventh DS0DP.

Before running this procedure, check the number and type of devices on a link. This information helps reduce the link diagnosis time.

68 To activate link fault sectionalization, type

>LFSLOOP START link_no element_type loopback_type occurrence

and press the Enter key.

Running a C7BERT (continued)

where

link_no
is the number of the link that you want to test (0 to 15)

element_type
is the type of network element to use the loopback on (DS0DP, OCUDP, CSU, NEI, or DSU)

loopback_type
is if the loopback is latching or non-latching (LATCH or NONLATCH)

occurrence
is the occurrence of the element type where link fault sectionalization is to initiate (1 to 16)

Example input:

```
>LFSLOOP  START  1  DS0DP  LATCH  1
```

69 The response that the system generates will determine your next step.

If the response	Do
is Link nn: LFS ON complete Looped back at element mm	step 80
Link nn: LFS ON complete Looped back at element mm WARNING: Physical loop may exist as confirmation byte not received.	step 80
is LFS a nonlatch sequence initiated for element mm. Run C7BERT to verify loop-back at element mm.	step 80
is Link nn: Failed - C7BERT already active on this link	step 73
is Link 1: Failed - LFS already active on this link	step 71
is Link nn: Has not gone into loopback. Element mm has not responded Link nn: LFS OFF complete	step 72
is Link nn: Has not gone into loopback. Link nn: LFS OFF complete	step 72
is |Link nn: Failed - PM not equipped with 9X78DA or 9X78DB	step 70
is other than listed here	step 110

Running a C7BERT (continued)

70 PM loop functionality is not available on your switch.

If	Do
you want to run a C7BERT	step 74
other than listed here	step 110

71 To remove the link fault sectionalization already applied, type

`>LFSLOOP STOP link_no`

and press the Enter key.

where

link_no
is the number of the link that you entered in step 67

If the response	Do
is LFSLoop stop nLink n: LFS OFF complete	step 67
is other than listed here	step 110

72 Record the element type and occurrence specified in step 67.

Note: The link fault sectionalization failed at the element type and occurrence that you specified.

The failure occurred for one of the following reasons:

- The element type and occurrence specified is beyond the location of the link problem.
- The element type and occurrence are not present.

Go to step 110.

73 To stop the current C7BERT, type

`>STOP link_no`

and press the Enter key.

where

link_no
is the number of the link that you entered in step 67

Note: The STOP command overrides any set stop time without warning.

If the response	Do
is Link 1: C7BERT stopped	step 67
is other than listed here	step 110

74 Apply manual loopbacks to the network elements you want to test.

Running a C7BERT (continued)

75 To determine if a stop time is set, type

>SETSTOP link_no STATUS

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

If the response	Do
is Link nn: Stop time set at:time	step 76
is Link nn: No stop time has been set	step 77
is other than listed here	step 110

76 To clear the stop time, type

>SETSTOP link_no CLEAR

and press the Enter key.

where

link_no
is the number of the link on which the C7BERT runs

If the response	Do
is Stop time cleared	step 77
is other than listed here	step 110

77 To set the new stop time, type

>SETSTOP link_no SET day hours minutes

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

day
is the day you want the test to stop automatically (MON, TUE, WED, THU, FRI, SAT, or SUN)

hours
is the hour you want the test to stop automatically (0 to 23)

minutes
is the minute you want the test to stop automatically (00 to 59)

Example input:

>SETSTOP 3 SET MON 10 30

Running a C7BERT (continued)

Note: The example entry sets the stop time for link 3 on Monday at 10:30 a.m.

If the response	Do
is Link nn: Stop time set at: 19xx/yy/zz hh:mm:00.000 ddd	step 78
is other than listed here	step 110

78 Determine if the stop time is correct.

If the stop time	Do
is correct	step 79
is not correct	step 76

79 Wait until the stop time.

Go to step 95.

80 To start the C7BERT, type

>START link_no

and press the Enter key.

where

link_no
is the number of the link that you want to test (0 to 15)

If the response	Do
is Link n: C7BERT started	step 81
is Link n:Failed - Link state is invalid for C7BERTLink must be ManB and DAct (or LFS)	step 6
is other than listed here	step 110

81 To display the test results of the C7BERT, type

>QUERY link_no PR

and press the Enter key.

where

link_no
is the number of the link to test (0 to 15)

Example of a MAP response:

Running a C7BERT (continued)

```
query 1 pr
Link  1: C7BERT query
Run Time     :       662   Err Free Secs:       662
Tx Frames    :     19016   Rx Sync Errs :         0
Rx Frames    :     19019   Rx Bad Frames:         0
Rx Bit Errors:         0   Rx Bits      :  38931896
Bit Err Rate : 0 x 10–15
```

If the response	Do
is a display of C7BERT statistics	step 82
is other than listed here	step 110

82 Determine if the transmission of any Tx frames occurred.

Note: The number of frames transmitted appears on the right of the Tx Frames header of the MAP display. In the example in step 31, the number of frames transmitted is 19 016 .

If Tx frames	Do
transmitted	step 83
did not transmit	step 110

83 The test runs correctly. The system generates test results when:

- you request reports
- you stop the test manually
- you stop the test automatically at a set time

Determine your next action

Note: If a switch restart occurs while a C7BERT runs on a link, the test stops automatically. The test stops when the LIU7 for the link fails.

If	Do
you want to request reports	step 90
you want to stop the test manually	step 94
you want to stop the test automatically at a set time	step 75
the link connects to a NT9X77AA or a NT9X78BA/CA/DA/DB card and you want to inject bit errors	step 84

Running a C7BERT (continued)

84 To display C7BERT results, type

>QUERY link_no PR

and press the Enter key.

where

link_no
is the number of the link that you want to test (0 to 15)

Example of a MAP response:

```
Link 1: C7BERT query
Run Time     :      1224   Err Free Secs:      1133
Tx Frames    :     32538   Rx Sync Errs :         0
Rx Frames    :     32580   Rx Bad Frames:         1
Rx Bit Errors:         0   Rx Bits      :  66673662
Bit Err Rate : 1 x 10– 8
```

If the response	Do
is a display of test statistics	step 85
is other than listed here	step 110

85 Record the number of Rx bit errors.

Note: In the example in step 84, the number of bit errors received appears on the right of Rx bit errors.

86 To inject bit errors, type

>INJERR link_no

and press the Enter key.

where

link_no
is the number of the link that you tested in step 80

Example of a MAP response:

```
injerr 1
```

If the response	Do
is Link 1: INJECT ERROR completed	step 87
is Link n:Failed - C7BERT is not active on this link	step 80
is other than listed here	step 110

87 To display the result of injected bit errors, type

>QUERY link_no PR

Running a C7BERT (continued)

and press the Enter key.

where

link_no
is the number of the link to test (0 to 15)

Example of a MAP response:

```
Link  1: C7BERT query
Run Time     :      1134   Err Free Secs:      1133
Tx Frames    :     32568   Rx Sync Errs :         0
Rx Frames    :     32570   Rx Bad Frames:         1
Rx Bit Errors:         6   Rx Bits      :  66670792
Bit Err Rate : 1 x 10– 8
```

If the response	Do
is a result of test statistics	step 88
is other than listed here	step 110

88 Determine the result of injected bit errors.

Note: In the example in step 87, the number of bit errors received appears on the right of Rx Bit Errors.

89 Subtract the result of the C7BERT that you recorded in step 85 from the result that you obtained in step 88.

If the difference	Do
is six	step 83
is other than listed here	step 110

90 To determine if report requests occurred, type

>REPORT link_no STATUS

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

If the response	Do
is Link nn: Report interval already set at: mm times per hour	step 91
is Link nn: Automatic query reporting is not active	step 92
is other than listed here	step 110

Running a C7BERT (continued)

91 To clear the previous report interval, type

>REPORT link_no OFF

and press the Enter key.

where

link_no
is the number of the link on which the C7BERT runs

MAP response:

```
Link nn: Automatic query reporting has been terminated
```

92 To set the number of reports for each hour, type

>REPORT link_no ON number

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

number
is the number of reports for each hour (1 to 12)

Example input:

>REPORT 1 ON 6

If the response	Do
is Link nn: Report interval set at:nn times per hour	step 93
is other than listed here	step 110

93 Determine if the report interval is correct.

If the interval	Do
is correct	step 83
is not correct	step 91

94 To stop the C7BERT, type

>STOP link_no

and press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the C7BERT runs

Running a C7BERT (continued)

Note: The STOP command overrides any set stop time without warning.

If the response	Do
is Link 1: C7BERT stopped with a display of test statistics	step 95
is other than listed here	step 110

95 Give the results to the next level of support.

If	Do
the link terminates on an NT9X77AA or NT9X78BA/CA/DA/DB card. You ran a link fault sectionalization. You must return the link to service	step 99
the link terminates on an NT9X77AA or NT9X78BA/CA/DA/DB card. You ran a link fault sectionalization. You must perform more tests	step 71
link does not terminate on an NT9X77AA or NT9X78BA/CA/DA/DB card	step 96
other than listed here	step 111

96 Remove the manual loopback across network elements.

97 Your next step depends on the instructions that you received from the next level of support.

If	Do
instructed to return the link to service	step 99
instructed to perform more tests	step 74
other than listed here	step 111

98 To remove the link fault sectionalization, type

`>LFSLOOP STOP link_no`

and press the Enter key.

where

Running a C7BERT (continued)

link_no
is the number of the link that you tested (0 to 15)

If the response	Do
is LFSLoop stop n Link n: LFS OFF complete	step 99
is other than listed here	step 110

99 To quit the C7BERT level of the MAP display, type

>QUIT

and press the Enter key.

100 To activate the link on which the C7BERT runs, type

>ACT link_no

and press the Enter key.

where

link_no
is the number of the link (0 to 15)

If the ACT command	Do
passed	step 101
failed	step 110
generates a result other than listed here	step 110

101 Determine the synchronization state of the link.

Note: The synchronization state appears under the Sync Stat header of the MAP display.

If the synchronization state	Do
is Alnd	step 108
is other than listed here	step 102

102 Wait 8 min, and continue the procedure.

103 Determine the synchronization state of the link.

If the synchronization state	Do
is not Alnd, and you did not ask the far-end office to activate the link	step 104

Running a C7BERT (continued)

If the synchronization state	Do
is not Alnd, and you asked the far-end office to activate the link	step 106

104 Determine from office records the far-end office that connects to the linkset you posted in step 4.

105 Contact the far-end office. Tell operating company personnel at that location:

- you must busy and deactivate the link in order to realign the link
- the link must be activated from both ends after you busy and deactivate the link.

Go to step 101.

106 To deactivate the link, type

>DEACT link_no FORCE

and press the Enter key.

where

link_no
is the number of the link that you activated in step 100

107 Tell operating company personnel at the far-end office to activate the link. To activate the link from your end, type

>ACT link_no

and press the Enter key.

where

link_no
is the number of the link that you activated in step 100

If the ACT command	Do
passed	step 108
failed	step 110

108 To return the link to service, type

>RTS link_no

and press the Enter key.

where

link_no
is the number of the link that you activated in step 100

If the RTS command	Do
passed	step 111
failed	step 110

109 To uninhibit the link, type

`>UINH  link_no`

and press the Enter key.

where

link_no
is the number of the link that you activated in step 100

If the UINH command	Do
passed	step 111
failed	step 110

110 For additional help, contact the next level of support.

111 The procedure is complete.

Running a C7BERT for high-speed links

Application

Use this procedure to do the following:

- perform local or remote loopback on an NTEX78AA card for LIUBASIC
- perform far-end DS-1 ESF loopback (CARLOOP)
- inject bit errors during HSL C7BERT
- run the CCS7 bit error rate test for high-speed links (HSL C7BERT)

Note: Do not use CARLOOP loopback test for HSLs connected to an asynchronous transfer mode (ATM) switch. CARLOOP test for HSLs is only valid over a direct connection.

Definition

Bit error rate testing measures the quality of a CCS7 digital transmission path.

Run an HSL C7BERT in the following situations:

- before bringing a CCS7 high-speed signaling link into service
- when isolating faults

Common procedures

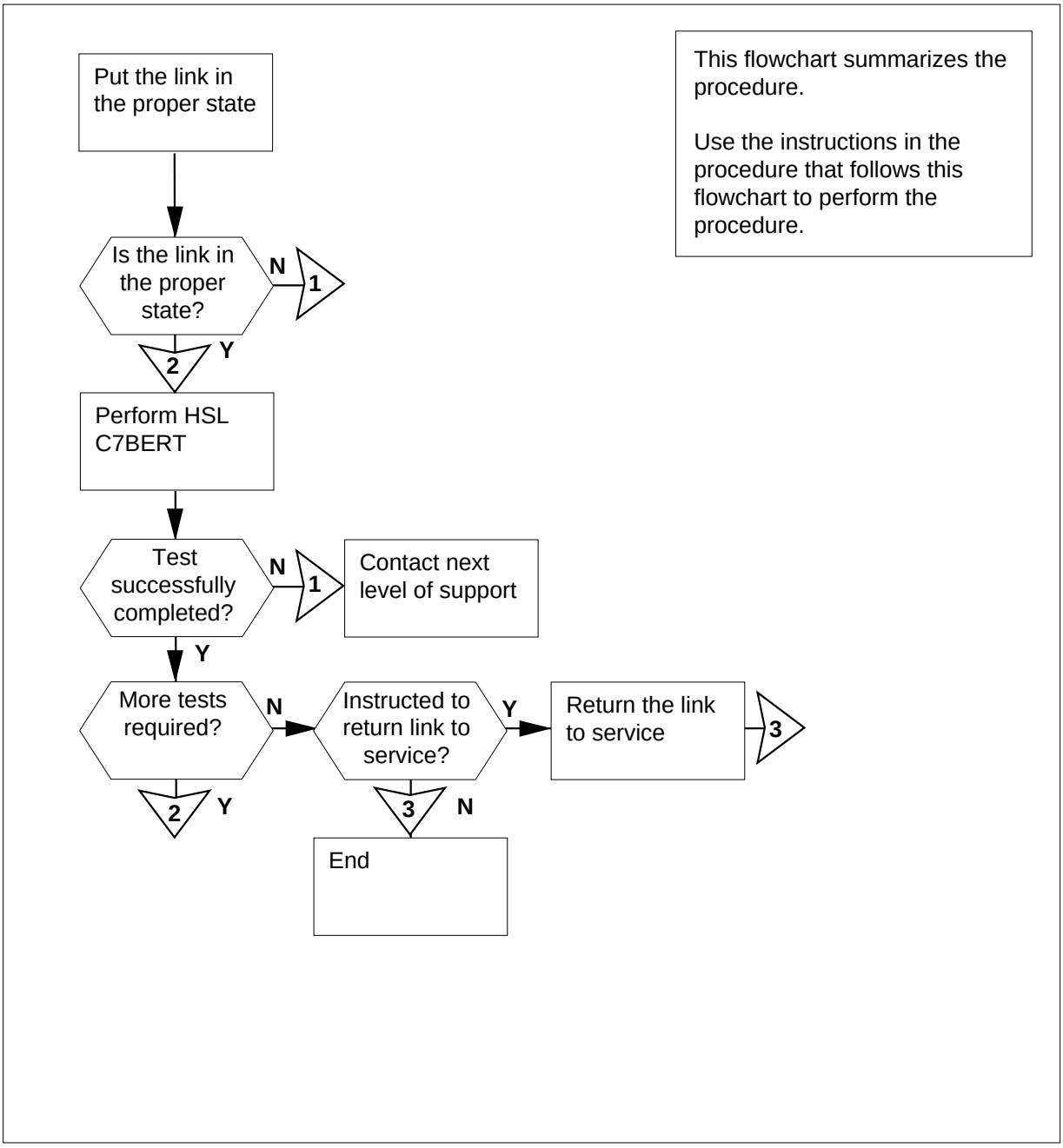
None

Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart as a summary of the procedure. Follow the steps to perform the procedure.

Running a C7BERT for high-speed links (continued)

Summary of Running an HSL C7BERT



Running a C7BERT for high-speed links (continued)

Running an HSL C7BERT

CAUTION
Risk of service interruption
The following procedure takes a CCS7 link out of service. Before proceeding, consult your next level of support to ensure network impact is minimized.

At the MAP terminal

1 Contact the next level of support to obtain the following information:

- how to stop the test (manually or automatically)
- if periodic reports are required and how many times each hour (1 to 12)

2 If you want to perform a remote loopback, inform personnel at the far-end office that

- you want to busy and return the link to service
- they must busy and return the link to service at their end

3 Enter the C7LKSET level of the MAP display by typing

`>MAPCI;MTC;CCS;CCS7;C7LKSET`

Press the Enter key.

Example of a MAP response:

```
   Traf Sync                                          Link
LK Stat Stat  Resource Stat Physical Access Stat      Action
```

4 To post the linkset that includes the link that you want to test type

`>POST  C  linkset_name`

and press the Enter key.

where

linkset_name
is the name of the linkset (as defined in table C7LKSET)

Example of a MAP response:

```
   Traf Sync                                      Link
LK Stat Stat Resource Stat Physical Access Stat   Action
0  OffL DAct  DLIU 12  OffL DS1
1  SysB DAct  DLIU 13  InSv DS1
Size of Posted Set = 2
```

Running a C7BERT for high-speed links (continued)

5 Determine the state of the DLIU associated with the link to be tested.

Note: The DLIU state is shown under the Stat header to the right of the Resource header.

If the DLIU state is	Do
SysB, ManB, or OffL	step 6
InSv or ISTb	step 16
anything else	step 77

Note: The DLIU consists of two peripherals: the high-speed link router (HSLR) and the high-speed link interface unit (HLIU).

6 Enter the PM level of the MAP display by typing

>PM

Press the Enter key.

Example of a MAP display:

```
         SysB   ManB   OffL   CBsy   ISTb   InSv
PM          1     10     12      0      6     49
```

7 Post the HLIU by typing

>POST HLIU dliu_no

Press the Enter key.

Note: The number of the DLIU is under the Resource header of the MAP display. In the example in step 4, the HLIU connected to link 1 is 13.

where

dliu_no
is the number of the DLIU connected to the link you want to test

Example of a MAP response:

```
HLIU 13 InSv
```

If the HLIU state is	Do
SysB	step 8
OffL	step 9
ManB	step 10
InSv or ISTb	step 11

Running a C7BERT for high-speed links (continued)

8 Wait one to three minutes for the HLIU to change from SysB to InSv.

IfAfter three minutes, if the state of the HLIU is	Do
InSv	step 11
SysB	step 77
anything else	step 77

9 Busy the HLIU by typing

>BSY

Press the Enter key.

If the BSY command	Do
passed	step 10
failed	step 77

10 Return the HLIU to service by typing

>RTS

Press the Enter key.

If the RTS command	Do
passed	step 11
failed	step 77

11 Post the HSLR by typing

>POST HSLR dliu_no

Press the Enter key.

where

dliu_no
is the number of the DLIU associated with the HSLR you want to post

If the state of the HSLR is	Do
InSv or ISTb	step 15
ManB	step 14
OffL	step 13
SysB	step 12

Running a C7BERT for high-speed links (continued)

12 Wait one to three minutes for the HSLR to change from SysB to InSv.

IfAfter three minutes, if the state of the HSLR is	Do
InSv	step 15
SysB	step 77
anything else	step 77

13 Busy the HSLR by typing

>BSY

Press the Enter key.

If the BSY command	Do
passed	step 15
failed	step 77

14 Return the HSLR to service by typing

>RTS

Press the Enter key.

If the RTS command	Do
passed	step 15
failed	step 77

15 Enter the C7LKSET level of the MAP display by typing

>MAPCI;MTC;CCS;CCS7;C7LKSET

Press the Enter key.

16 Determine the traffic state of the link you want to test.

Note: The traffic state of the link is shown under the Traf Stat header of the MAP display. The synchronization state is shown under the Sync Stat header of the MAP display.

If the traffic and synchronization states are in the sequence given	Do
`Offl DAct`	step 17
`Bsy DAct`	step 18
`SysB DAct`	step 22
`SysB SysB`	step 20

Running a C7BERT for high-speed links (continued)

If the traffic and synchronization states are in the sequence given	Do
anything else	step 19

17 Busy the link by typing

>BSY link_no

Press the Enter key.

where

link_no
is the number of the link you want to test (0 to 15)

If the BSY command	Do
passed	step 19
failed	step 77

18 Return the link to service by typing

>RTS link_no

Press the Enter key. This action places the link into the SysB/DAct state.

where

link_no
is the number of the link you want to test (0 to 15)

If the RTS command	Do
passed	step 22
failed	step 77

19 Inhibit the link you want to test by typing

>INH link_no

Press the Enter key.

where

link_no
is the number of the link you want to test (0 to 15)

If the INH command	Do
passed	step 20
failed	step 77

20 Manually busy the link by typing

>BSY link_no

Press the Enter key.

Running a C7BERT for high-speed links (continued)

where

link_no
is the number of the link you want to test (0 to 15)

If the BSY command	Do
passed	step 21
failed	step 77

21 Return the link to service by typing

>RTS link_no

Press the Enter key. This action places the link into the SysB/DAct state.

where

link_no
is the number of the link you want to test (0 to 15)

If the RTS command	Do
passed	step 22
failed	step 77

22 Enter the C7BERT level of the MAP display by typing

>C7BERT

Press the Enter key.

If you want to	Do
perform a local loopback	step 23
perform a remote loopback	step 24
perform a far-end DS-1 ESF loopback	step 32
run C7BERT	step 38
enable the high-speed signaling terminal (HST) to scan for control codes	step 62
perform an intermediate loopback C7BERT test	step 37

23 Activate a local loopback by typing

>PMLOOP LOCON link_no

Press the Enter key.

Running a C7BERT for high-speed links (continued)

where

link_no
is the number of the link you want to test (0 to 15)

If the response is	Do
`Link 1: Loopback Local on completed`	step 38
`Link 1: Failed - PMLOOP <Local|Remote|Enable> is already active`	step 26
`Link 1: Failed - C7BERT already active on this link`	step 31
`Link 1: Failed - Link state is invalid for HSL PMLoop. Link must be SysB and DAct`	step 16
anything else	step 77

24 Activate a remote loopback by typing

`>PMLOOP RMTON link_no`

Press the Enter key.

where

link_no
is the number of the link you want to test (0 to 15)

Note: A remote loopback establishes a loopback for the far-end. The far-end must run C7BERT to test the quality of the link.

If the response is	Do
`Link 1: Loopback Remote On completed`	step 25
`Link 1: Failed - PMLOOP <Local|Remote|Enable> is already active`	step 26
`Link 1: Failed - C7BERT already active on this link`	step 31

Running a C7BERT for high-speed links (continued)

If the response is	Do
`Link 1: Failed - Link state is invalid for HSL PMLoop. Link must be SysB and DAct`	step 16
anything else	step 77

25 Inform personnel at the far end that the remote loopback is active and the far end personnel can begin their tests. After the far-end tests are finished, release the loopback by typing

`>PMLOOP RMTOFF link_no`

Press the Enter key.

where

link_no
is the number of the link you entered in PMLOOP command

If the PMLOOP command	Do
passed and you want to perform more C7BERT procedures	step 22
passed and you do not want to perform other C7BERTprocedures	step 67
failed	step 77

26 Enter the PM level of the MAP display by typing

`>PM`

Press the Enter key.

27 Post the HLIU by typing

`>POST HLIU dliu_no`

Press the Enter key.

28 Clear the loopback state by typing

`>LOOPBK C`

Press the Enter key.

If the response is	Do
LoopBk passed	step 29
anything else	step 77

Running a C7BERT for high-speed links (continued)

29 Enter the C7LKSET level of the MAP display by typing

`>MAPCI;MTC;CCS;CCS7;C7LKSET`

Press the Enter key.

30 Enter the C7BERT level of the MAP display by typing

`>C7BERT`

Press the Enter key.

If you want to	Do
activate a local loopback	step 23
activate a remote loopback	step 24

31 Stop the existing HSL C7BERT by typing

`>STOP link_no`

Press the Enter key.

where

link_no
is the number of the link you entered in step 23 or 24

Note: The STOP command overrides any preset stop time without warning.

If you want to	Do
activate a local loopback	step 23
activate a remote loopback	step 24

32 Contact personnel at the far end to confirm that the far-end signaling terminal is able to receive control codes.

Note: If the equipment type is DMS, personnel at the far-end can determine the signaling terminal status as follows:

- Type *PM* and press the Enter key to access the PM level of the MAP display.
- Type *POST HLIU dliu_no* and press the Enter key to post the HLIU.
- Type *LOOPBK S* and press the Enter key to display the terminal status.

Users of equipment that is not DMS should contact their next level of support to obtain the procedures for their equipment.

33 Activate the far-end DS-1 ESF loopback from your end by typing

`>CARLOOP START link_no loopback_type`

Press the Enter key.

where

link_no
is the number of the link you want to test (0 to 15)

Running a C7BERT for high-speed links (continued)

loopback_type
indicates if the loopback is line (R) or payload (P)

Example input:

```
>CARLOOP  START  1  R
```

34 Your next step depends on the response.

If the response is	Do
Link nn: DS-1 ESF Loop ON complete Carrier line loopback at far-end paddle-board	step 38
Link nn: Failed - C7BERT already active on this link	step 35
Link 1: Failed - Far-end DS-1 ESF already active on this link	step 36
Link nn: Failed - Has not gone into loopback.	step 77
anything else	step 77

35 Stop the existing HSL C7BERT by typing

```
>STOP  link_no
```

Press the Enter key.

where

link_no
is the number of the link you entered in step 33

Note: The STOP command overrides any preset stop time without warning.

If the response is	Do
Link 1: C7BERT stopped	step 33
anything else	step 77

36 Remove the far-end DS-1 ESF loopback already applied by typing

```
>CARLOOP  STOP  link_no
```

Press the Enter key.

where

Running a C7BERT for high-speed links (continued)

link_no
is the number of the link you entered in step 33

If the response is	Do
CARLoop stop nLink n: DS-1 ESF OFF complete	step 33
anything else	step 77

37 Contact personnel at the intermediate point and request a loopback.

38 Start the HSL C7BERT by typing

>START link_no

Press the Enter key.

where

link_no
is the number of the link you want to test (0 to 15)

If the response is	Do
Link n: C7BERT started	step 39
Link n:Failed - Link state is invalid for HSL C7BERTLink must be SysB/DAct or SysB/CAR	step 16
anything else	step 77

39 Display the test results of the HSL C7BERT by typing

>QUERY link_no PR

Press the Enter key.

where

link_no
is the number of the link being tested (0 to 15)

Example of a MAP response:

Running a C7BERT for high-speed links (continued)

```
query 1 pr
Link  1: C7BERT query
Run Time     :       662   Err Free Secs:       662
Tx Frames    :     19016   Rx Sync Errs :         0
Rx Frames    :     19019   Rx Bad Frames:         0
Rx Bit Errors:         0   Rx Bits      :  38931896
Bit Err Rate : 0 x 10–15
```

If the response is	Do
a display of HSL C7BERT statistics	step 40
anything else	step 77

40 Determine if any Tx frames were transmitted.

Note: The number of frames transmitted appears to the right of the Tx Frames header of the MAP display. In the example in step 39, the number of frames transmitted is 19 016 .

If	Do
any Tx frames were transmitted	step 41
no Tx frames were transmitted	step 77

41 The test is running correctly.

Test results generate when:

- the periodic reporting function is active
- operating company personnel stop the test manually
- the test stops automatically at a pre-set time

Note: If a switch restart occurs when an HSL C7BERT is running on a link, the test stops automatically. The test also stops automatically if the HLIU associated with the link fails.

If	Do
you want to request periodic reports	step 53
you want to stop the test manually	step 57
you want to stop the test automatically at a pre-set time	step 42
you want to inject bit errors	step 47

Running a C7BERT for high-speed links (continued)

42 Determine if a stop time has been set by typing

>SETSTOP link_no STATUS

Press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the HSL C7BERT is running

If the response is	Do
Link nn: Stop time set at: time	step 43
Link nn: No stop time has been set	step 44
anything else	step 77

43 Clear the stop time by typing

>SETSTOP link_no CLEAR

Press the Enter key.

where

link_no
is the number of the link on which the HSL C7BERT is running

If the response is	Do
Stop time cleared	step 44
anything else	step 77

44 Set the new stop time by typing

>SETSTOP link_no SET day hours minutes

Press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the HSL C7BERT is running

day
is the day on which you want the test to stop automatically (MON, TUE, WED, THU, FRI, SAT, or SUN)

hours
is the hour at which you want the test to stop automatically (0 to 23)

minutes
is the minute at which you want the test to stop automatically (00 to 59)

Example input:

>SETSTOP 3 SET MON 10 30

Running a C7BERT for high-speed links (continued)

Note: The example entry sets the stop time for link 3 on Mondays at 10:30 a.m.

If the response is	Do
Link nn: Stop time set at: 19xx/yy/zz hh:mm:00.000 ddd	step 45
anything else	step 77

45 Determine if the stop time is correct.

If the stop time is	Do
correct	step 46
incorrect	step 43

46 Wait until the stop time.

Go to step 58.

47 Display HSL C7BERT results by typing

`>QUERY link_no PR`

Press the Enter key.

where

link_no
is the number of the link being tested (0 to 15)

Example of a MAP response:

```
Link 1: C7BERT query
Run Time     :      1224   Err Free Secs:      1133
Tx Frames    :     32538   Rx Sync Errs :         0
Rx Frames    :     32580   Rx Bad Frames:         1
Rx Bit Errors:         0   Rx Bits      :  66673662
Bit Err Rate : 1 x 10– 8
```

If the response is	Do
a display of test statistics	step 48
anything else	step 77

48 Record the number of Rx bit errors.

Note: In the example in step 47, the number of bit errors received appears to the right of Rx bit errors.

49 Inject bit errors by typing

`>INJERR link_no`

Running a C7BERT for high-speed links (continued)

Press the Enter key.

where

link_no
is the number of the link you tested in step 38

Example of a MAP response:

```
injerr 1
```

If the response is	Do
Link 1: INJECT ERROR completed	step 50
Link n:Failed - C7BERT is not active on this link	step 38
anything else	step 77

50 Display the result of injecting bit errors by typing

`>QUERY link_no PR`

Press the Enter key.

where

link_no
is the number of the link that you want to test (0 to 15)

Example of a MAP response:

```
Link  1: C7BERT query
Run Time     :      1134   Err Free Secs:      1133
Tx Frames    :     32568   Rx Sync Errs :         0
Rx Frames    :     32570   Rx Bad Frames:         1
Rx Bit Errors:         1   Rx Bits      :  66670792
Bit Err Rate : 1 x 10– 8
```

If the response is	Do
a display of test statistics	step 51
anything else	step 77

51 Determine the result of injecting bit errors.

Note: In the example in step 50, the number of bit errors received appears to the right of Rx Bit Errors.

Running a C7BERT for high-speed links (continued)

52 Subtract the result of the HSL C7BERT recorded in step 48 from the result obtained in step 50. This action checks for correct bit error rate (BER) circuit operation.

If the difference is	Do
1	step 41
anything else	step 77

53 Determine if periodic reports have been requested by typing

`>REPORT link_no STATUS`

Press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the HSL C7BERT is running

If the response is	Do
Link nn: Automatic query reporting set at: mm times per hour	step 54
Link nn: Automatic query reporting is not active	step 55
anything else	step 77

54 Clear the previous report interval by typing

`>REPORT link_no OFF`

Press the Enter key.

where

link_no
is the number of the link on which the HSL C7BERT is running

MAP response:

```
Link nn: Automatic query reporting has been terminated
```

55 Set the number of reports per hour by typing

`>REPORT link_no ON number`

Press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the HSL C7BERT is running

number
is the number of reports per hour (1 to 12)

Running a C7BERT for high-speed links (continued)

Example input:

>REPORT 1 ON 6

If the response is	Do
Link nn: Report interval set at:nn times per hour	step 56
anything else	step 77

56 Determine if the report interval is correct.

If the interval is	Do
correct	step 41
incorrect	step 54

57 Stop the HSL C7BERT by typing

>STOP link_no

Press the Enter key.

where

link_no
is the number of the link (0 to 15) on which the HSL C7BERT is running

Note: The STOP command overrides any preset stop time without warning.

If the response is	Do
Link 1: C7BERT stopped	step 58
anything else	step 77

58 Give the results to the personnel responsible for the next level of support. Your next step depends on the instructions received from your next level of support.

If	Do
the far-end DS-1 loopback is established	step 60
the local loopback is established	step 59
an intermediate loopback is established	step 61

59 Remove the local loopback by typing

>PMLOOP LOCOFF link_no

Press the Enter key.

Running a C7BERT for high-speed links (continued)

where

link_no
is the number of the link you tested (0 to 15)

If the response is	Do
`pmloop off` and more tests are required	step 22
`pmloop off` and you want to exit from C7BERT	step 67
anything else	step 77

60 Remove the far-end DS-1 ESF loopback by typing

`>CARLOOP STOP link_no`

Press the Enter key.

where

link_no
is the number of the link you tested (0 to 15)

If the response is	Do
`Link n: DS-1 ESF OFF complete` and more tests are required	step 22
`Link n: DS-1 ESF OFF complete` and you want to exit C7BERT	step 67
anything else	step 77

61 Tell personnel at the intermediate point to remove the intermediate loopback.

If you want to	Do
run more tests	step 22
exit from C7BERT	step 67

62 Enter the PM level of the MAP display by typing

`>PM`

Press the Enter key.

63 Post the HLIU by typing

`>POST HLIU dliu_no`

Press the Enter key.

64 Enable the HST to scan for control codes by typing

`>LOOPBK E`

Running a C7BERT for high-speed links (continued)

Press the Enter key.

If the response is	Do
`loopbk passed`	step 65
anything else	step 77

65 Wait for the far end to finish testing. When far-end testing is complete, clear the loopback state by typing

`>LOOPBK C`

Press the Enter key.

If the response is	Do
`loopbk passed`	step 66
anything else	step 77

66 Enter the C7LKSET level of the MAP display by typing

`>MAPCI;MTC;CCS;CCS7;C7LKSET`

Press the Enter key.

If	Do
more tests are required	step 22
you want to exit C7BERT	step 67

67 Quit the C7BERT level of the MAP display by typing

`>QUIT`

Press the Enter key.

68 Activate the link on which the HSL C7BERT was running by typing

`>ACT link_no`

Press the Enter key.

where

link_no
is the number of the link (0 to 15)

If the ACT command	Do
passed	step 69
failed	step 77

Running a C7BERT for high-speed links (continued)

69 Determine the synchronization state of the link.

Note: The synchronization state appears under the Sync Stat header of the MAP display.

If the synchronization state is	Do
Sync	step 76
anything else	step 70

70 Wait eight minutes, then continue the procedure.

71 Determine the synchronization state of the link.

If the synchronization state is	Do
SysB, and you have not asked the far-end office to activate the link	step 73
SysB, and you have asked the far-end office to activate the link	step 72

72 Use office records to determine which far-end office connects to the linkset posted in step 4.

73 Contact the far-end office. Tell the personnel there that you will reactivate the link.

74 Tell personnel at the far-end office to activate the link.

75 Activate the link from your end by typing

```
>ACT  link_no
```

Press the Enter key.

where

link_no
is the number of the link you activated in step 68

If the ACT command	Do
passed	step 76
failed	step 77

76 Uninhibit the link by typing

```
>UINH  link_no
```

Press the Enter key.

where

Running a C7BERT for high-speed links (end)

link_no
is the number of the link you activated in step 68

If the UINH command	Do
passed	step 78
failed	step 77

77 For additional help, contact the personnel responsible for the next level of support.

78 You have completed this procedure.

Index

A

Activating CCS7 links Vol. 4, 4-16
Activity switch with memory match Vol. 4, 4-26
alarm clearing
  APPL CallP
    major Vol. 1, 1-3
  CCS LK
    minor Vol. 1, 2-24
  CCS LKM
    major Vol. 1, 2-52
  CCS LSSM
    major Vol. 1, 2-78
  CCS PC
    minor Vol. 1, 2-87
  CCS PCC
    critical Vol. 1, 2-91
  CCS RSC
    critical Vol. 1, 2-95
  CCS RSM
    major Vol. 1, 2-101
  CCS RSSC
    critical Vol. 1, 2-106
  CCS RTRC
    critical Vol. 1, 2-115
  CCS RTRM
    major Vol. 1, 2-124
  CM AutoLd
    minor Vol. 1, 3-3
  CM CBsyMC
    major Vol. 1, 3-6
  CM ClkFlt
    major Vol. 1, 3-14
  CM CMFlt
    major Vol. 1, 3-21
  CM CMTrap
    major Vol. 1, 3-34
  CM E2A
    minor Vol. 1, 3-37
  CM EccOn
    minor Vol. 1, 3-41
  CM IMAGE
    critical Vol. 1, 3-46
  CM Image
    minor Vol. 2, 4-125
  CM JInact
    minor Vol. 1, 3-49
  CM LowMem
    critical Vol. 1, 3-52
  CM LowSpr
    major Vol. 1, 3-60
    minor Vol. 1, 3-68
  CM MBsyMC
    major Vol. 1, 3-76
  CM MC Tbl
    minor Vol. 1, 3-84
  CM MemCfg
    minor Vol. 1, 3-96
  CM MemCor
    Major Vol. 1, 3-109
    minor Vol. 1, 3-115
  CM MemFlt
    minor Vol. 1, 3-118
  CM MemLim
    minor Vol. 1, 3-123
  CM NoBrst
    minor Vol. 1, 3-139
  CM NoOvr
    minor Vol. 1, 3-146
  CM NoSYNC
    major Vol. 1, 3-153
  CM NoTOD
    critical Vol. 1, 3-159
  CM PMCFlt
    major Vol. 1, 3-166

CM PMCTbl
minor Vol. 1, 3-176
CM PrcOpt
major Vol. 1, 3-185
CM RExFlt
major Vol. 1, 3-188
CM RExSch
minor Vol. 1, 3-191
CM RExTst
minor Vol. 1, 3-197
CM SBsyMC
major Vol. 1, 3-202
CM SLMLIM
major Vol. 1, 3-213
CM SLMLim
minor Vol. 1, 3-216
CM SRAMFL
major Vol. 1, 3-219
CM SramFl
minor Vol. 1, 3-226
E911_LDT_CRITICAL
critical Vol. 1, 4-67
E911_LDT_MAJOR
major Vol. 1, 4-71
Ext CPPOOL
critical Vol. 1, 4-42
major Vol. 1, 4-47
Ext Crit
critical Vol. 1, 4-3
EXT E911_ALI_MAJOR
Major Vol. 1, 4-57
EXT E911_ALI_MINOR
Minor Vol. 1, 4-62
EXT E911_PSAP_OFFHK
minor Vol. 1, 4-93
EXT E911_RCER
minor alarm Vol. 1, 4-105
EXT E911_RCER_MAJOR
Major Vol. 1, 4-100
EXT E911_SRDB_MEMORY
Minor Vol. 1, 4-110
Ext FSP
APC cabinet major Vol. 1, 4-128
CCC frame major Vol. 1, 4-137
CDSN cabinet major Vol. 1, 4-201
CDSN cabinet with MSP shelf major Vol. 1, 4-146
CIOE cabinet major Vol. 1, 4-219
CIOE cabinet with MSP shelf major Vol. 1, 4-153
CIPE cabinet with MSP shelf major Vol. 1, 4-160
CISM, CMTA and CTME cabinet with an MSP shelf major Vol. 1, 4-167
CPDC cabinet major Vol. 1, 4-174
DCE frame major Vol. 1, 4-182
DPCC cabinet major Vol. 1, 4-191
DSNE frame major Vol. 1, 4-201
DTE frame major Vol. 1, 4-210
IDTE frame major Vol. 1, 4-210
IOE frame major Vol. 1, 4-219
LPP cabinet major Vol. 1, 4-242
major Vol. 1, 4-125
MEX frame major Vol. 1, 4-250
MS7E frame major Vol. 1, 4-265
NET0, NET1 (circuit breakers and fuses) major Vol. 1, 4-274
NET0, NET1 frame (fuses only) major Vol. 1, 4-283
NETC frame major Vol. 1, 4-292
PDC frame major Vol. 1, 4-301
Ext FSP major
CTME cabinet with FSP Vol. 1, 4-341
TME frame Vol. 1, 4-341
Ext Maj
major Vol. 1, 4-12
Ext Min
minor Vol. 1, 4-34
IOD DDUOS on an IOM
major or minor Vol. 2, 1-178
IOD DEVBnn
critical, major, or minor Vol. 2, 1-76
IOD DMNTnn
minor Vol. 2, 1-79
IOD HOLDnn
minor Vol. 2, 1-85
IOD ITOC
critical Vol. 2, 1-88
minor Vol. 2, 1-95
IOD KEEPn
minor Vol. 2, 1-103
IOD MPCLNK
minor Vol. 2, 1-106
IOD MTDOS in an IOC
minor Vol. 2, 1-235
IOD nCKEr
minor Vol. 2, 1-126

IOD nCKOS
major or minor Vol. 2, 1-142
IOD nDDUOS
major or minor Vol. 2, 1-164
IOD nDPCOS
minor Vol. 2, 1-191
IOD nIOCOS
major or minor Vol. 2, 1-196
IOD nMPCOS
major or minor Vol. 2, 1-211
IOD nMPCOS on an IOM
major or minor Vol. 2, 1-222
IOD nnAMA
critical, major, or minor Vol. 2, 1-260
IOD nnJF
critical, major, or minor Vol. 2, 1-264
IOD nnOM
critical, major, or minor Vol. 2, 1-268
IOD NO AMA on device type DISK
critical Vol. 2, 1-272
IOD NO AMA on device type TAPE
critical Vol. 2, 1-281
IOD NO ssys on device type DISK
critical, major, or minor Vol. 2, 1-295
IOD NO ssys on device type TAPE
critical Vol. 2, 1-304
IOD nSVC
critical Vol. 2, 1-317
IOD PnnVnn
minor Vol. 2, 1-323
IOD POOLnn
minor Vol. 2, 1-333
IOD SENDn
minor Vol. 2, 1-344
IOD SLMbsy
major Vol. 2, 1-349
minor Vol. 2, 1-355
IOD SLMoff
minor Vol. 2, 1-361
IOD SLMtbl
minor Vol. 2, 1-367
IOD ssys B
minor Vol. 2, 1-373, Vol. 2, 1-374
IOD ssys E
minor Vol. 2, 1-377
IOD ssys F
minor Vol. 2, 1-381
IOD ssys l
minor Vol. 2, 1-384
IOD ssys MP
critical Vol. 2, 1-389
IOD ssys P
critical Vol. 2, 1-389
IOD XMITn
minor Vol. 2, 1-398
LCM ringing generator (LRG)
critical Vol. 3, 1-621
Lns DF
in a remote oscillator shelf Vol. 2, 2-3
Lns DIAG
in a remote oscillator shelf Vol. 2, 2-7
Lns FAC
in a remote oscillator shelf Vol. 2, 2-11
Lns HZD
in a remote oscillator shelf Vol. 2, 2-15
Lns IMAJ
in a remote oscillator shelf Vol. 2, 2-19
Lns IMIN
in a remote oscillator shelf Vol. 2, 2-23
Lns LCARD
in a remote oscillator shelf Vol. 2, 2-27
Lns LSET
in a remote oscillator shelf Vol. 2, 2-31
Lns MCARD
in a remote oscillator shelf Vol. 2, 2-35
Lns MSET
in a remote oscillator shelf Vol. 2, 2-39
Lns NDIAG
in a remote oscillator shelf Vol. 2, 2-43
Lns OMAJ
critical, major, or minor Vol. 2, 2-47
Lns OMIN
critical, major, or minor Vol. 2, 2-51
Lns PSDF
in a remote oscillator shelf Vol. 2, 2-55
Lns PSPD
in a remote oscillator shelf Vol. 2, 2-59
Lns QDIAG
in a remote oscillator shelf Vol. 2, 2-63
Lns SDIAG
in a remote oscillator shelf Vol. 2, 2-67
Lns TCM
in a remote oscillator shelf Vol. 2, 2-71
Monitoring system maintenance
PM Vol. 4, 4-139
MS CLOCK
major Vol. 2, 3-8

MS CMIC
minor Vol. 2, 3-11
MS DDM
major Vol. 2, 3-24
MS IMSL
minor Vol. 2, 3-35
MS ISTB
minor Vol. 2, 3-43
MS ManB
major Vol. 2, 3-57
MS MaxPt
minor Vol. 2, 3-61
MS MBCD
minor Vol. 2, 3-64
MS MBCH
minor Vol. 2, 3-73
MS MBCL
minor Vol. 2, 3-82
MS MbFb
minor Vol. 2, 3-91
MS MBPT
minor Vol. 2, 3-96
MS MbTp
minor Vol. 2, 3-101
MS MSpair
critical Vol. 2, 3-114
MS NOIMSL
major Vol. 2, 3-106
MS REx
minor Vol. 2, 3-117
MS RExByp
minor Vol. 2, 3-121
MS RExFlt
minor Vol. 2, 3-134
MS SBCD
minor Vol. 2, 3-141
MS SBCH
minor Vol. 2, 3-150
MS SBCL
minor Vol. 2, 3-158
MS SbFb
major Vol. 2, 3-168
MS SBPT
minor Vol. 2, 3-173
MS SbTp
major Vol. 2, 3-182
MS SPAN
minor Vol. 2, 3-187
MS SysB
major Vol. 2, 3-191
MS TRIstb
minor Vol. 2, 3-203
MS TROOS
major Vol. 2, 3-206
Net Bsy
minor Vol. 2, 4-3
Net CBsy
major Vol. 2, 4-9
Net CdPr
critical Vol. 2, 4-22
Net CSLk
minor Vol. 2, 4-27
Net ISTb
minor Vol. 2, 4-40
Net Istb
minor Vol. 2, 4-37
Net Istb (on a crosspoint card)
minor Vol. 2, 4-46
Net Istb (on a link)
minor Vol. 2, 4-51
Net Istb (on a system card)
minor Vol. 2, 4-58
Net JcTr
minor Vol. 2, 4-63
Net Link
minor Vol. 2, 4-71
Net LOAD
minor Vol. 2, 4-82
Net MBCd
minor Vol. 2, 4-94
Net MBsy
minor Vol. 2, 4-100
Net Pair
critical Vol. 2, 4-105
Net PSLk
minor Vol. 2, 4-111
Net REx
minor Vol. 2, 4-122
Net RExOff
minor Vol. 2, 4-128
Net RExSch
minor Vol. 2, 4-131
Net SBCd
major Vol. 2, 4-137
Net SBsy
major Vol. 2, 4-143

Net Shlv
critical Vol. 2, 4-148
Net SysB
minor Vol. 2, 4-152
PM APU
critical Vol. 3, 1-111
major Vol. 3, 1-134
minor Vol. 3, 1-153
PM CBSY
major Vol. 3, 1-178
PM DCH
major Vol. 3, 1-182
minor Vol. 3, 1-192
PM DTC
critical Vol. 3, 1-211
major Vol. 3, 1-231
minor Vol. 3, 1-252
PM EIU
critical Vol. 3, 1-265
major Vol. 3, 1-292
minor Vol. 3, 1-316
PM EXND
minor Vol. 3, 1-342
PM FP
CPUFlt minor Vol. 3, 1-362
critical Vol. 3, 1-347
device-related fault minor Vol. 3, 1-369
JInact minor Vol. 3, 1-384
LowMem minor Vol. 3, 1-387
major Vol. 3, 1-353
MemCor minor Vol. 3, 1-395
MemFlt minor Vol. 3, 1-401
MMThrs minor Vol. 3, 1-407
NoOvr minor Vol. 3, 1-410
NoSync minor Vol. 3, 1-416
PrtFlt minor Vol. 3, 1-422
PrtTbl minor Vol. 3, 1-427
Trap minor Vol. 3, 1-436
PM FRIU
major on an LPP Vol. 3, 1-452
minor (on an SSLPP) Vol. 3, 1-499
minor on an LPP Vol. 3, 1-464
PM HLIU
critical Vol. 3, 1-510
PM HSLR
critical Vol. 3, 1-524
PM IPML
major Vol. 3, 1-542
minor Vol. 3, 1-542
PM ISTb
minor Vol. 3, 1-550
PM LCM
critical Vol. 3, 1-561
major Vol. 3, 1-576
minor Vol. 3, 1-589
PM LCME
major Vol. 3, 1-609
PM LGC
critical Vol. 3, 1-632
major Vol. 3, 1-652
minor Vol. 3, 1-674
PM LIM
critical Vol. 3, 1-689
major Vol. 3, 1-701
minor Vol. 3, 1-715
PM LIMF
critical Vol. 3, 1-725
major Vol. 3, 1-734
PM LIMREX
minor Vol. 3, 1-742
PM LIU7
critical Vol. 3, 1-743
major Vol. 3, 1-759, Vol. 4, 1-19
minor Vol. 3, 1-773, Vol. 4, 1-33
PM LMDrwr
major Vol. 3, 1-792
minor Vol. 3, 1-792
PM LMPr
critical Vol. 3, 1-797
PM LMRex
minor Vol. 3, 1-806
PM LMRGen
major Vol. 3, 1-810
minor Vol. 3, 1-810
PM LTC
critical Vol. 3, 1-814
major Vol. 3, 1-834
minor Vol. 3, 1-855
PM LTCI
critical Vol. 3, 1-868
major Vol. 3, 1-868
minor Vol. 3, 1-868
PM MSB6, MSB7
critical Vol. 4, 1-52
major Vol. 4, 1-52
minor Vol. 4, 1-52

PM NIU
critical Vol. 4, 1-82
major Vol. 4, 1-101
minor Vol. 4, 1-116
PM PMLOAD
minor Vol. 4, 1-145
PM SDM
major Vol. 1, 1-5
minor Vol. 1, 1-6
PM STC
major Vol. 4, 1-156
minor Vol. 4, 1-156
PM SysB
major Vol. 4, 1-168
PM VLCM
minor Vol. 4, 1-247
PM VPU
critical Vol. 4, 1-251
major Vol. 4, 1-276
minor Vol. 4, 1-298
PM XLIU
critical Vol. 4, 1-324
major Vol. 4, 1-338
minor Vol. 4, 1-351
talk battery
minor Vol. 4, 1-194
Talk battery (TB)
critical Vol. 4, 1-182
Trks C
minor Vol. 4, 2-49
Trks CB
critical, major, or minor Vol. 4, 2-55
Trks CC
critical Vol. 4, 2-61
Trks CE
critical, major, or minor Vol. 4, 2-69
Trks CG
minor Vol. 4, 2-74
Trks CM
major Vol. 4, 2-81
Trks CR C and CR M
critical Vol. 4, 2-88
Trks CS
critical, major, or minor Vol. 4, 2-96
Trks EX
critical, major, or minor Vol. 4, 2-102
Trks GC, GM, and G
critical, major, or minor Vol. 4, 2-106
Trks MB
critical, major, or minor Vol. 4, 2-115
Trks MJ C and MJ M
critical or major Vol. 4, 2-120
Trks MN C and MN M
critical or major Vol. 4, 2-128
Trks SB
critical, major, or minor Vol. 4, 2-137
Allocating a volume Vol. 4, 4-34
APPL CallP
major
clearing Vol. 1, 1-3

C

C7BERT
Running Vol. 4, 4-211
cable, temporary fiber
connecting ENET to MS Vol. 4, 4-91
connecting ENET to PM Vol. 4, 4-80
connecting MS to SSLPP Vol. 4, 4-69
card replacement common procedures
Correcting a load mismatch Vol. 4, 4-103
CCS LK
minor
clearing Vol. 1, 2-24
CCS LKM
major
clearing Vol. 1, 2-52
CCS LSSM
major
clearing Vol. 1, 2-78
CCS PC
minor
clearing Vol. 1, 2-87
CCS PCC
critical
clearing Vol. 1, 2-91
CCS RSC
critical
clearing Vol. 1, 2-95
CCS RSM
major
clearing Vol. 1, 2-101
CCS RSSC
critical
clearing Vol. 1, 2-106

CCS RTRC
critical
clearing Vol. 1, 2-115
CCS RTRM
major
clearing Vol. 1, 2-124
CM AutoLd
minor
clearing Vol. 1, 3-3
CM CBsyMC
major
clearing Vol. 1, 3-6
CM ClkFlt
major
clearing Vol. 1, 3-14
CM CMFlt
major
clearing Vol. 1, 3-21
CM CMTrap
major
clearing Vol. 1, 3-34
CM E2A
minor
clearing Vol. 1, 3-37
CM EccOn
minor
clearing Vol. 1, 3-41
CM IMAGE
critical
clearing Vol. 1, 3-46
CM Image
minor
clearing Vol. 2, 4-125
CM JInact
minor
clearing Vol. 1, 3-49
CM LowMem
critical
clearing Vol. 1, 3-52
CM LowSpr
major
clearing Vol. 1, 3-60
minor
clearing Vol. 1, 3-68
CM MBsyMC
major
clearing Vol. 1, 3-76
CM MC Tbl
minor
clearing Vol. 1, 3-84
CM MemCfg
minor
clearing Vol. 1, 3-96
CM MemCor
Major
clearing Vol. 1, 3-109
minor
clearing Vol. 1, 3-115
CM MemFlt
minor
clearing Vol. 1, 3-118
CM MemLim
minor
clearing Vol. 1, 3-123
CM NoBrst
minor
clearing Vol. 1, 3-139
CM NoOvr
minor
clearing Vol. 1, 3-146
CM NoSYNC
major
clearing Vol. 1, 3-153
CM NoTOD
critical
clearing Vol. 1, 3-159
CM PMCFlt
major
clearing Vol. 1, 3-166
CM PMCTbl
minor
clearing Vol. 1, 3-176
CM PrcOpt
major
clearing Vol. 1, 3-185
CM RExFlt
major
clearing Vol. 1, 3-188
CM RExSch
minor
clearing Vol. 1, 3-191
CM RExTst
minor
clearing Vol. 1, 3-197

CM SBsyMC
major
clearing Vol. 1, 3-202
CM SLMLIM
major
clearing Vol. 1, 3-213
CM SLMLim
minor
clearing Vol. 1, 3-216
CM SRAMFL
major
clearing Vol. 1, 3-219
CM SramFl
minor
clearing Vol. 1, 3-226
common procedures
Activating CCS7 links Vol. 4, 4-16
Activity switch with memory match Vol. 4, 4-26
Allocating a volume Vol. 4, 4-34
cable, temporary fiber
connecting ENET to MS Vol. 4, 4-91
connecting ENET to PM Vol. 4, 4-80
connecting MS to SSLPP Vol. 4, 4-69
critical
Clearing PM C-side faults Vol. 4, 4-47
Deallocating a volume Vol. 4, 4-118
Failure to switch clock mastership Vol. 4, 4-122
LCM
Clearing ringing generator faults Vol. 4, 4-63
LME frame
checking the fuse unit Vol. 4, 4-38
major
Clearing PM C-side faults Vol. 4, 4-47
minor
Clearing PM C-side faults Vol. 4, 4-47
PM
Loading Vol. 4, 4-131
Resetting a volume Vol. 4, 4-150
Restoring LIM unit cross links Vol. 4, 4-43
RLM frame
checking the fuse unit Vol. 4, 4-38
XSG
moving to a spare XLIU Vol. 4, 4-144
critical
Clearing PM C-side faults Vol. 4, 4-47

D

Deallocating a volume Vol. 4, 4-118

E

E911_LDT_CRITICAL
critical
clearing Vol. 1, 4-67
E911_LDT_MAJOR
major
clearing Vol. 1, 4-71
Ext CPPOOL
critical
clearing Vol. 1, 4-42
major
clearing Vol. 1, 4-47
Ext Crit
critical
clearing Vol. 1, 4-3
EXT E911_ALI_MAJOR
Major
clearing Vol. 1, 4-57
EXT E911_ALI_MINOR
Minor
clearing Vol. 1, 4-62
EXT E911_PSAP_OFFHK
minor
clearing Vol. 1, 4-93
EXT E911_RCER
minor alarm
clearing Vol. 1, 4-105
EXT E911_RCER_MAJOR
Major
clearing Vol. 1, 4-100
EXT E911_SRDB_MEMORY
Minor
clearing Vol. 1, 4-110
Ext FSP
APC cabinet major
clearing Vol. 1, 4-128
CCC frame major
clearing Vol. 1, 4-137
CDSN cabinet major
clearing Vol. 1, 4-201
CDSN cabinet with MSP shelf major
clearing Vol. 1, 4-146
CIOE cabinet major
clearing Vol. 1, 4-219

CIOE cabinet with MSP shelf major
clearing Vol. 1, 4-153
CIPE cabinet with MSP shelf major
clearing Vol. 1, 4-160
CISM, CMTA and CTME cabinet with an MSP shelf major
clearing Vol. 1, 4-167
CPDC cabinet major
clearing Vol. 1, 4-174
DCE frame major
clearing Vol. 1, 4-182
DPCC cabinet major
clearing Vol. 1, 4-191
DSNE frame major
clearing Vol. 1, 4-201
DTE frame major
clearing Vol. 1, 4-210
IDTE frame major
clearing Vol. 1, 4-210
IOE frame major
clearing Vol. 1, 4-219
LPP cabinet major
clearing Vol. 1, 4-242
major
clearing Vol. 1, 4-125
MEX frame major
clearing Vol. 1, 4-250
MS7E frame major
clearing Vol. 1, 4-265
NET0, NET1 (circuit breakers and fuses) major
clearing Vol. 1, 4-274
NET0, NET1 frame (fuses only) major
clearing Vol. 1, 4-283
NETC frame major
clearing Vol. 1, 4-292
PDC frame major
clearing Vol. 1, 4-301
Ext Maj
major
clearing Vol. 1, 4-12
Ext Min
minor
clearing Vol. 1, 4-34

F

Failure to switch clock mastership Vol. 4, 4-122

I

IOD DDUOS on an IOM
major or minor
clearing Vol. 2, 1-178
IOD DEVBnn
critical, major, or minor
clearing Vol. 2, 1-76
IOD DMNTnn
minor
clearing Vol. 2, 1-79
IOD HOLDnn
minor
clearing Vol. 2, 1-85
IOD ITOC
critical
clearing Vol. 2, 1-88
minor
clearing Vol. 2, 1-95
IOD KEEPn
minor
clearing Vol. 2, 1-103
IOD MPCLNK
minor
clearing Vol. 2, 1-106
IOD MTDOS in an IOC
minor
clearing Vol. 2, 1-235
IOD nCKEr
minor
clearing Vol. 2, 1-126
IOD nCKOS
major or minor
clearing Vol. 2, 1-142
IOD nDDUOS
major or minor
clearing Vol. 2, 1-164
IOD nDPCOS
minor
clearing Vol. 2, 1-191
IOD nIOCOS
major or minor
clearing Vol. 2, 1-196
IOD nMPCOS
major or minor
clearing Vol. 2, 1-211
IOD nMPCOS on an IOM
major or minor
clearing Vol. 2, 1-222

IOD nnAMA
critical, major, or minor
clearing Vol. 2, 1-260
IOD nnJF
critical, major, or minor
clearing Vol. 2, 1-264
IOD nnOM
critical, major, or minor
clearing Vol. 2, 1-268
IOD NO AMA on device type DISK
critical
clearing Vol. 2, 1-272
IOD NO AMA on device type TAPE
critical
clearing Vol. 2, 1-281
IOD NO ssys on device type DISK
critical, major, or minor
clearing Vol. 2, 1-295
IOD NO ssys on device type TAPE
critical
clearing Vol. 2, 1-304
IOD nSVC
critical
clearing Vol. 2, 1-317
IOD PnnVnn
minor
clearing Vol. 2, 1-323
IOD POOLnn
minor
clearing Vol. 2, 1-333
IOD SENDn
minor
clearing Vol. 2, 1-344
IOD SLMbsy
major
clearing Vol. 2, 1-349
minor
clearing Vol. 2, 1-355
IOD SLMoff
minor
clearing Vol. 2, 1-361
IOD SLMtbl
minor
clearing Vol. 2, 1-367
IOD ssys B
minor
clearing Vol. 2, 1-373, Vol. 2, 1-374
IOD ssys E
minor
clearing Vol. 2, 1-377
IOD ssys F
minor
clearing Vol. 2, 1-381
IOD ssys l
minor
clearing Vol. 2, 1-384
IOD ssys MP
critical
clearing Vol. 2, 1-389
IOD ssys P
critical
clearing Vol. 2, 1-389
IOD XMITn
minor
clearing Vol. 2, 1-398

L

LCM
Clearing ringing generator faults Vol. 4, 4-63
LCM ringing generator (LRG)
critical
clearing Vol. 3, 1-621
LME frame
checking the fuse unit Vol. 4, 4-38
Lns DF
in a remote oscillator shelf
clearing Vol. 2, 2-3
Lns DIAG
in a remote oscillator shelf
clearing Vol. 2, 2-7
Lns FAC
in a remote oscillator shelf
clearing Vol. 2, 2-11
Lns HZD
in a remote oscillator shelf
clearing Vol. 2, 2-15
Lns IMAJ
in a remote oscillator shelf
clearing Vol. 2, 2-19
Lns IMIN
in a remote oscillator shelf
clearing Vol. 2, 2-23
Lns LCARD
in a remote oscillator shelf
clearing Vol. 2, 2-27

Lns LSET
in a remote oscillator shelf
clearing Vol. 2, 2-31
Lns MCARD
in a remote oscillator shelf
clearing Vol. 2, 2-35
Lns MSET
in a remote oscillator shelf
clearing Vol. 2, 2-39
Lns NDIAG
in a remote oscillator shelf
clearing Vol. 2, 2-43
Lns OMAJ
critical, major, or minor
clearing Vol. 2, 2-47
Lns OMIN
critical, major, or minor
clearing Vol. 2, 2-51
Lns PSDF
in a remote oscillator shelf
clearing Vol. 2, 2-55
Lns PSPD
in a remote oscillator shelf
clearing Vol. 2, 2-59
Lns QDIAG
in a remote oscillator shelf
clearing Vol. 2, 2-63
Lns SDIAG
in a remote oscillator shelf
clearing Vol. 2, 2-67
Lns TCM
in a remote oscillator shelf
clearing Vol. 2, 2-71

M

major
Clearing PM C-side faults Vol. 4, 4-47
minor
Clearing PM C-side faults Vol. 4, 4-47
Monitoring system maintenance
PM
clearing Vol. 4, 4-139
MS CLOCK
major
clearing Vol. 2, 3-8
MS CMIC
minor
clearing Vol. 2, 3-11
MS DDM
major
clearing Vol. 2, 3-24
MS IMSL
minor
clearing Vol. 2, 3-35
MS ISTB
minor
clearing Vol. 2, 3-43
MS ManB
major
clearing Vol. 2, 3-57
MS MaxPt
minor
clearing Vol. 2, 3-61
MS MBCD
minor
clearing Vol. 2, 3-64
MS MBCH
minor
clearing Vol. 2, 3-73
MS MBCL
minor
clearing Vol. 2, 3-82
MS MbFb
minor
clearing Vol. 2, 3-91
MS MBPT
minor
clearing Vol. 2, 3-96
MS MbTp
minor
clearing Vol. 2, 3-101
MS MSpair
critical
clearing Vol. 2, 3-114
MS NOIMSL
major
clearing Vol. 2, 3-106
MS REx
minor
clearing Vol. 2, 3-117
MS RExByp
minor
clearing Vol. 2, 3-121
MS RExFlt
minor
clearing Vol. 2, 3-134

MS SBCD
minor
clearing Vol. 2, 3-141
MS SBCH
minor
clearing Vol. 2, 3-150
MS SBCL
minor
clearing Vol. 2, 3-158
MS SbFb
major
clearing Vol. 2, 3-168
MS SBPT
minor
clearing Vol. 2, 3-173
MS SbTp
major
clearing Vol. 2, 3-182
MS SPAN
minor
clearing Vol. 2, 3-187
MS SysB
major
clearing Vol. 2, 3-191
MS TRIstb
minor
clearing Vol. 2, 3-203
MS TROOS
major
clearing Vol. 2, 3-206

N

Net Bsy
minor
clearing Vol. 2, 4-3
Net CBsy
major
clearing Vol. 2, 4-9
Net CdPr
critical
clearing Vol. 2, 4-22
Net CSLk
minor
clearing Vol. 2, 4-27
Net ISTb
minor
clearing Vol. 2, 4-40
Net Istb
minor
clearing Vol. 2, 4-37
Net Istb (on a crosspoint card)
minor
clearing Vol. 2, 4-46
Net Istb (on a link)
minor
clearing Vol. 2, 4-51
Net Istb (on a system card)
minor
clearing Vol. 2, 4-58
Net JcTr
minor
clearing Vol. 2, 4-63
Net Link
minor
clearing Vol. 2, 4-71
Net LOAD
minor
clearing Vol. 2, 4-82
Net MBCd
minor
clearing Vol. 2, 4-94
Net MBsy
minor
clearing Vol. 2, 4-100
Net Pair
critical
clearing Vol. 2, 4-105
Net PSLk
minor
clearing Vol. 2, 4-111
Net REx
minor
clearing Vol. 2, 4-122
Net RExOff
minor
clearing Vol. 2, 4-128
Net RExSch
minor
clearing Vol. 2, 4-131
Net SBCd
major
clearing Vol. 2, 4-137
Net SBsy
major
clearing Vol. 2, 4-143

Net Shlv
critical
clearing Vol. 2, 4-148
Net SysB
minor
clearing Vol. 2, 4-152

P

PM
Loading Vol. 4, 4-131
PM APU
critical
clearing Vol. 3, 1-111
major
clearing Vol. 3, 1-134
minor
clearing Vol. 3, 1-153
PM CBSY
major
clearing Vol. 3, 1-178
PM DCH
major
clearing Vol. 3, 1-182
minor
clearing Vol. 3, 1-192
PM DTC
critical
clearing Vol. 3, 1-211
major
clearing Vol. 3, 1-231
minor
clearing Vol. 3, 1-252
PM EIU
critical
clearing Vol. 3, 1-265
major
clearing Vol. 3, 1-292
minor
clearing Vol. 3, 1-316
PM EXND
minor
clearing Vol. 3, 1-342
PM FP
CPUFlt minor
clearing Vol. 3, 1-362
critical
clearing Vol. 3, 1-347
device-related fault minor
clearing Vol. 3, 1-369
JInact minor
clearing Vol. 3, 1-384
LowMem minor
clearing Vol. 3, 1-387
major
clearing Vol. 3, 1-353
MemCor minor
clearing Vol. 3, 1-395
MemFlt minor
clearing Vol. 3, 1-401
MMThrs minor
clearing Vol. 3, 1-407
NoOvr minor
clearing Vol. 3, 1-410
NoSync minor
clearing Vol. 3, 1-416
PrtFlt minor
clearing Vol. 3, 1-422
PrtTbl minor
clearing Vol. 3, 1-427
Trap minor
clearing Vol. 3, 1-436
PM FRIU
major on an LPP
clearing Vol. 3, 1-452
minor (on an SSLPP)
clearing Vol. 3, 1-499
minor on an LPP
clearing Vol. 3, 1-464
PM HLIU
critical
clearing Vol. 3, 1-510
PM HSLR
critical
clearing Vol. 3, 1-524
PM IPML
major
clearing Vol. 3, 1-542
minor
clearing Vol. 3, 1-542
PM ISTb
minor
clearing Vol. 3, 1-550

PM LCM
critical
clearing Vol. 3, 1-561
major
clearing Vol. 3, 1-576
minor
clearing Vol. 3, 1-589
PM LCME
major
clearing Vol. 3, 1-609
PM LGC
critical
clearing Vol. 3, 1-632
major
clearing Vol. 3, 1-652
minor
clearing Vol. 3, 1-674
PM LIM
critical
clearing Vol. 3, 1-689
major
clearing Vol. 3, 1-701
minor
clearing Vol. 3, 1-715
PM LIMF
critical
clearing Vol. 3, 1-725
major
clearing Vol. 3, 1-734
PM LIMREX
minor
clearing Vol. 3, 1-742
PM LIU7
critical
clearing Vol. 3, 1-743
major
clearing Vol. 3, 1-759, Vol. 4, 1-19
minor
clearing Vol. 3, 1-773, Vol. 4, 1-33
PM LMDrwr
major
clearing Vol. 3, 1-792
minor
clearing Vol. 3, 1-792
PM LMPr
critical
clearing Vol. 3, 1-797
PM LMRex
minor
clearing Vol. 3, 1-806
PM LMRGen
major
clearing Vol. 3, 1-810
minor
clearing Vol. 3, 1-810
PM LTC
critical
clearing Vol. 3, 1-814
major
clearing Vol. 3, 1-834
minor
clearing Vol. 3, 1-855
PM LTCI
critical
clearing Vol. 3, 1-868
major
clearing Vol. 3, 1-868
minor
clearing Vol. 3, 1-868
PM MSB6, MSB7
critical
clearing Vol. 4, 1-52
major
clearing Vol. 4, 1-52
minor
clearing Vol. 4, 1-52
PM NIU
critical
clearing Vol. 4, 1-82
major
clearing Vol. 4, 1-101
minor
clearing Vol. 4, 1-116
PM PMLOAD
minor
clearing Vol. 4, 1-145
PM SDM
major
clearing Vol. 1, 1-5
minor
clearing Vol. 1, 1-6
PM STC
major
clearing Vol. 4, 1-156

minor
clearing Vol. 4, 1-156
PM SysB
major
clearing Vol. 4, 1-168
PM VLCM
minor
clearing Vol. 4, 1-247
PM VPU
critical
clearing Vol. 4, 1-251
major
clearing Vol. 4, 1-276
minor
clearing Vol. 4, 1-298
PM XLIU
critical
clearing Vol. 4, 1-324
major
clearing Vol. 4, 1-338
minor
clearing Vol. 4, 1-351

R

Resetting a volume Vol. 4, 4-150
Restoring LIM unit cross links Vol. 4, 4-43
RLM frame
checking the fuse unit Vol. 4, 4-38

T

talk battery
minor
clearing Vol. 4, 1-194
Talk battery (TB)
critical
clearing Vol. 4, 1-182
Trks C
minor
clearing Vol. 4, 2-49
Trks CB
critical, major, or minor
clearing Vol. 4, 2-55
Trks CC
critical
clearing Vol. 4, 2-61
Trks CE
critical, major, or minor
clearing Vol. 4, 2-69
Trks CG
minor
clearing Vol. 4, 2-74
Trks CM
major
clearing Vol. 4, 2-81
Trks CR C and CR M
critical
clearing Vol. 4, 2-88
Trks CS
critical, major, or minor
clearing Vol. 4, 2-96
Trks EX
critical, major, or minor
clearing Vol. 4, 2-102
Trks GC, GM, and G
critical, major, or minor
clearing Vol. 4, 2-106
Trks MB
critical, major, or minor
clearing Vol. 4, 2-115
Trks MJ C and MJ M
critical or major
clearing Vol. 4, 2-120
Trks MN C and MN M
critical or major
clearing Vol. 4, 2-128
Trks SB
critical, major, or minor
clearing Vol. 4, 2-137

X

XSG
moving to a spare XLIU Vol. 4, 4-144

DMS-100 Family

North American DMS-100

Alarm Clearing and Performance Monitoring Procedures

Volume 4 of 4

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