

Nortel

# Optical Metro 5100/5200

## Trouble Clearing and Alarm Reference Guide, Part 1 of 4

Standard Release 8.0 Issue 1 April 2005

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### *What's inside...*

Troubleshooting the Optical Metro 5100/5200, Troubleshooting fault sectionalization and System Level Equalization Control, Alarm description, Installation troubleshooting procedures, Clearing OCI and OCI SRM alarms, Clearing OCI SRM GbE/FC and OCI SRM GbE alarms, Clearing OCM alarms

### *See Part 2 for the following:*

Clearing OCLD alarms, Clearing OMX alarms, Clearing ECT/PBE alarms, Clearing OFA alarms, Clearing APBE alarms

### *See Part 3 for the following:*

Clearing shelf and SP alarms, Clearing PM alarms, Clearing OSC alarms, Clearing OTR alarms

### *See Part 4 for the following:*

Clearing Muxponder alarms, Clearing C&L splitter/coupler alarms, Clearing equipment inventory unit alarms, Clearing 1310 nm splitter/coupler alarms, Clearing transponder protection tray alarms, Clearing discrete VOA alarms, Clearing security alarms, Troubleshooting the Enhanced Trunk Switch, Troubleshooting the Optical Trunk Switch, Clearing DSCM alarms

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## About this document

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### ATTENTION

This document is presented in four parts: Part 1, Part 2, Part 3, and Part 4. Each part has its own table of contents. The table of contents in Part 1 contains topics found in Part 1 only. The table of contents in Part 2 contains topics found in Part 2 only. The table of contents in Part 3 contains topics found in Part 3 only. The table of contents in Part 4 contains topics found in Part 4 only.

You are reading Part 1 of the *Trouble Clearing and Alarm Reference Guide*, 323-1701-542.

This document provides general information about alarms, as well as procedures for clearing alarms on the Nortel Optical Metro 5100/5200 (identified prior to Release 7 as Nortel Networks OPTera Metro 5000-series Multiservice Platform).

### Audience for this document

This document is intended for the following audience:

- provisioners
- installers
- transmission standards engineers
- field maintenance engineers
- system line-up and testing (SLAT) personnel
- maintenance technicians
- network administrators

### Optical Metro 5100/5200 library

The Optical Metro 5100/5200 library consists of the *Nortel Optical Metro 5100/5200 Technical Publications*, NT0H65AM.

## **Technical Publications**

The *Optical Metro 5100/5200 Technical Publications* (NTP) consist of descriptive information and procedures.

### **Descriptive information**

These NTPs provide detailed descriptive information about the Optical Metro 5100/5200, including system software and hardware descriptions, technical specifications, ordering information, and TL1 user information.

### **Procedures**

These NTPs contain all procedures required to install, provision, and maintain the Optical Metro 5100/5200.

The following roadmap lists the documents in the Optical Metro 5100/5200 library.

OM2808p



## Technical assistance service telephone numbers

For technical support and information from Nortel Networks, refer to the following table.

| <b>Technical Assistance Service</b>  |   |
|--|---|
| <b>For service-affecting problems:</b><br>For 24-hour emergency recovery or software upgrade support, that is, for: <ul style="list-style-type: none"><li>• restoration of service for equipment that has been carrying traffic and is out of service</li><li>• issues that prevent traffic protection switching</li><li>• issues that prevent completion of software upgrades</li></ul> | <b>North America:</b><br>1-800-4NORTEL (1-800-466-7835)<br><br><b>International:</b><br>001-919-992-8300  |
| <b>For non-service-affecting problems:</b><br>For 24-hour support on issues requiring immediate support or for 14-hour support (8 a.m. to 10 p.m. EST) on upgrade notification and non-urgent issues.  | <b>North America:</b><br>1-800-4NORTEL (1-800-466-7835)<br><b>Note:</b> You require an express routing code (ERC). To determine the ERC, see our corporate Web site at <a href="http://www.nortel.com">www.nortel.com</a> . Click on the Express Routing Codes link.<br><br><b>International:</b><br>Varies according to country. For a list of telephone numbers, see our corporate Web site at <a href="http://www.nortel.com">www.nortel.com</a> . Click on the Contact Us link. |
| <b>Global software upgrade support:</b>  | <b>North America:</b><br>1-800-4NORTEL (1-800-466-7835)<br><br><b>International:</b><br>Varies according to country. For a list of telephone numbers, see our corporate Web site at <a href="http://www.nortel.com">www.nortel.com</a> . Click on the Contact Us link.  |

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# Troubleshooting the Optical Metro 5100/5200

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## In this chapter

- [Troubleshooting the Web browser on page 1-2](#)
- [Isolating faults that do not generate alarms on page 1-3](#)
- [Troubleshooting the Optical Metro 5100/5200 system on page 1-9](#)
- [Troubleshooting hardware baseline exceptions in Health Check reports on page 1-15](#)
- [Procedure list on page 1-18](#)

Use the information in this chapter to locate and clear faults in the Optical Metro 5100/5200 system.

Read the “[Alarm description](#)” chapter of this book for detailed information about events, warnings and error messages.

**CAUTION****Risk of shelf malfunction**

Nortel Networks recommends that you do not use cellular phones at any Optical Metro 5100/5200 site. The use of cellular phones in proximity to Optical Metro 5100/5200 equipment can cause shelf malfunction.

**ATTENTION**

If the trouble clearing procedures in this book do not successfully clear an alarm, make sure that all Optical Metro 5100/5200 equipment, frames, racks, and cabinets are properly grounded. See the appropriate grounding procedures in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201, or *Installing Optical Metro 5100 Shelves and Components*, 323-1701-210.

**ATTENTION**

When you follow an alarm clearing procedure in this book to troubleshoot an alarm, other alarms may be raised. Complete the original alarm clearing procedure before you attempt to troubleshoot any subsequent alarms.

If an alarm or alarms remain after you complete the original alarm clearing procedure, follow the appropriate alarm clearing procedure in this book to clear the alarm or alarms.

## Troubleshooting the Web browser

Use [Table 1-1 on page 1-3](#) to troubleshoot the Web browser.

The System Manager requires a Java-enabled Web browser to function. If you do not correctly install or do not complete the installation of the Web browser and the related Java plug-in, the System Manager can have problems functioning.

If the System Manager is not functioning correctly, and is on a workstation with a Sun Solaris 8 operating system, you can set the environment variables. If Netscape is installed on a Sun Solaris 8 multi-user system, you must set the environment variables in each user environment. [Table 1-1](#) lists problems that can occur with the Web browser and the related Java plug-in. These problems normally result when the Web browser has been incorrectly installed.

**Table 1-1**  
**Troubleshooting the Web browser**

| Web browser  | Indication  | Meaning  | Action   |
|--|---|--|--|
| Internet Explorer 5.5, Internet Explorer 6.0, or Netscape Communicator 4.76 running on a Windows 2000, or Windows NT, or Windows XP platform | Error message appears (for example, “invalid page fault”) that lists “JAVAW” or “AWT.DLL” as the source of the error. | The Java plug-in performance ability has decreased from use with Windows 2000/NT/XP. | Restart the System Manager. If the problem occurs with a frequency that you consider unacceptable: <ol style="list-style-type: none"> <li>1 Close the System Manager.</li> <li>2 Uninstall the Java plug-in. Follow <a href="#">Procedure 1-1 “Uninstalling the Java plug-in (Windows 2000/NT/XP)”</a>, in this book.</li> <li>3 Install the Java plug-in again. Follow <a href="#">Procedure 1-2 “Installing the Java plug-in (Windows 2000/NT/XP)”</a>, in this book.</li> </ol> |
| Internet Explorer 5.5 or Internet Explorer 6.0   | Blue screen appears with no objects displayed.  | The Java plug-in is not installed.   | Follow <a href="#">Procedure 1-2 “Installing the Java plug-in (Windows 2000/NT/XP)”</a> .  |
| Netscape Communicator 4.76   | User is directed to the Sun Web site to download the Java plug-in.  | The environment variables for the Java plug-in are not set.                          | If the Java plug-in is not installed, install the plug-in, including all the necessary patches.<br>Follow <a href="#">Procedure 1-2 “Installing the Java plug-in (Windows 2000/NT/XP)”</a> , or <a href="#">Procedure 1-3 “Installing the Java plug-in (Solaris)”</a> in this book.<br><br>If the Java plug-in is installed, follow <a href="#">Procedure 1-6 “Setting Netscape environment variables in Solaris”</a> in <i>Commissioning Procedures</i> , 323-1701-220.           |
| Netscape Communicator 4.76 (Sun Solaris 8)   | The System Manager closes. NullPointerException error occurs.   | There is insufficient memory for the Java plug-in.                                   | Follow <a href="#">Procedure 1-7 “Configuring 64 Mbytes of memory for the Java Plug-In for Solaris”</a> in <i>Commissioning Procedures</i> , 323-1701-220.   |

### Isolating faults that do not generate alarms

Use [Table 1-2 on page 1-7](#) to isolate faults that do not generate alarms. Read the safety precautions section first.

## Safety precautions

### General safety notices



**DANGER**

**Risk of personal injury**

Use of controls, adjustments, or procedures different from those described in this documentation can result in exposure to hazardous invisible radiation.



**CAUTION**

**Risk of equipment damage**

Only qualified personnel should install Optical Metro 5100/5200 equipment.



**CAUTION**

**Risk of equipment damage**

Read each procedure through to the end before you begin to perform the steps.



**CAUTION**

**Risk of equipment damage**

Do not use the RJ45 panel connectors (10Base-T 1X and 10Base-T 2X) as telephone jacks.

### Laser safety notices



**CAUTION**

**Risk of personal injury**

Do not look into the end of connectors on fiber-optic cables or into connectors on the faceplates of installed circuit packs. The light source used in fiber-optic devices can damage your eyes.



**CAUTION**

**Risk of personal injury**

Infrared laser light is not visible and can burn your skin. The lasers used in this equipment give off infrared light. You cannot see or feel the effect of receiving the light on your skin.

## Laser safety considerations

|   |   |
|---|---|
|  | <p><b>CAUTION</b><br/> <b>Risk of personal injury</b><br/>                     The Optical Metro 5100/5200 operates up to a Hazard Level of <math>k \times 3A</math> (IEC 60825-2:2000) or 1M (IEC 60825-2:2004). Use only viewing instruments with proper optical attenuation.</p> |
|---|---|

Observe the following precautions to ensure safe operation and site compliance with EN60825-1 and EN60825-2.

- Do not look at the OMX, ECT, PBE, OSC, or OFA optical fibers without visual aids. There is a label warning of invisible laser radiation on all OMXs, ECTs, PBEs, OSCs, and OFAs.
- The mechanical characteristics of the optical fiber connecting the OMX/ECT and the optical fiber distribution panel must comply with IEC794-2.
- Follow sound fiber management practices to avoid applied stress or cut optical fibers. Do not use cable ties to clamp optical fibers to the equipment rack.
- The patch panel must carry a class 3A warning label (as shown in [Figure 1-1](#)) and must require the use of a tool to access the optical fiber connections. In addition, attach a laser safety tag to all optical fibers that connect to client subtending equipment.

**Figure 1-1**  
**Laser safety tag**

OM03071



## Handling circuit packs

|   |  |
|---|--|
|  | <p><b>CAUTION</b><br/> <b>Risk of equipment damage</b><br/>                     Make sure you know how to handle electronic components correctly before you begin installation procedures. Incorrect handling can cause damage to static-sensitive components.</p> |
|---|--|

To avoid possible damage to circuit packs by electrostatic discharge (ESD), observe these precautions.

- Wear a grounded antistatic wrist strap connected to the shelf maintenance panel, or shoe straps, when handling circuit packs. Follow the manufacturer's instructions to test ESD protection before handling circuit packs.
- Keep circuit packs in their antistatic bags until you are ready to install the circuit packs.
- Remove circuit packs from their antistatic bags and install the circuit packs directly into the unit. Do not pass circuit packs to another person.
- If you need to put a circuit pack down, put the circuit pack back into its antistatic bag first.
- Handle circuit packs by their edges only. Do not touch the electronic components or any exposed printed circuits.
- Limit your movement during installation to reduce the build up of static electricity.

## Handling fiber-optic cable

|  |  |
|--|--|
|  | <p><b>DANGER</b><br/><b>Risk of personal injury</b><br/>Do not look into the end of fiber-optic cable. The light source used in fiber-optic cables can damage your eyes.</p> |
|--|--|

|   |   |
|---|---|
|  | <p><b>CAUTION</b><br/><b>Risk of equipment damage</b><br/>Make sure you know how to handle fiber-optic cable correctly. Incorrect handling can cause damage to the glass optical fiber.</p> |
|---|---|

|   |   |
|---|---|
|  | <p><b>CAUTION</b><br/><b>Risk of equipment damage</b><br/>Do not compress fiber-optic cable. If fiber-optic cable is in the same tray or duct with large, heavy electrical cables, it can be damaged by the weight of the electrical cable.</p> |
|---|---|

Although the glass optical path of fiber-optic cable is protected with strengthening material and plastic insulation, follow these precautions to avoid damaging the glass optical fiber:

- Do not kink, knot, or vigorously flex fiber-optic cable.
- Do not bend fiber-optic cable to less than a 40 mm (1.5-inch) radius.
- Do not stand on fiber-optic cable; keep the cable off the floor.

- Do not pull fiber-optic cable any harder than you would a cable containing copper wire of equivalent size.
- Do not allow a static load of more than a few pounds on any section of the fiber-optic cable.
- Make sure you put protective caps on fiber-optic connectors that are not in use.
- Store available fiber-optic patch cords in a cabinet, on a cable rack, or flat on a shelf.
- Do not use cable ties to secure optical fiber to racks, or other equipment.

Overstressing fiber-optic cable might not result in immediate failure of the cable, but frequent overstressing can cause progressive degeneration of the cable.

If you suspect damage to a fiber-optic cable, either through known mishandling or by indication of an abnormally high error rate in one direction, reverse the cable pairs. If the high error rate appears in the other direction, replace the fiber.

[Table 1-2](#) lists problems that surveillance mechanisms, such as warnings and events, can isolate.

**Table 1-2**  
**Isolating faults that do not generate alarms**

| <b>Problem</b>                                       | <b>Cause</b>  | <b>Action</b>   |
|--|---|---|
| Intermittent Service                                 | Various   | Check for alarms and the performance monitoring points on subtending equipment. |
| Incorrect or Incoherent Payload (Source or Protocol) | There is an incorrect configuration for the connection. | Check the configuration of the connection.                                      |
| No Service   | There is no signal output at the OCI circuit packs.     | Check the output of OCI circuit packs.  |

**Table 1-2 (continued)**  
**Isolating faults that do not generate alarms**

| <b>Problem</b>   | <b>Cause</b>  | <b>Action</b>  |
|--|---|--|
| Ethernet hub Link lamp is off  | The Ethernet cable is not physically connected to the hub or the shelf                | Check the physical port connections on the Ethernet hub and the shelf.   |
|  | The wrong type of cable is used to make the connection between the hub and the shelf. | Replace the cable with a shielded cross-over Ethernet cable.   |
|  | The network interface card (NIC) is not functioning.                                  | Replace the network interface card in the maintenance panel on the shelf.  |
|  | The port is not functioning.  | Connect the cable to another port on the Ethernet hub.   |
| Ethernet hub Link lamp is flashing   | The port is partitioned from the network  | Connect the cable to another port on the Ethernet hub.   |
|  |   | Replace the network interface card in the shelf.   |
| Cannot communicate with SP/shelf (not an alarm, but an indication on the System Manager) | The computer Ethernet port is not configured correctly.                               | Reconfigure the Ethernet port.   |
|  | The Ethernet cable is not connected correctly.  | Reconnect the Ethernet cable.  |
|  | The Ethernet hub is not operating.  | Apply power to the Ethernet hub.   |
|  | There is no functioning overhead path to the OADM shelf.                              | Troubleshoot the active line-side (OCLD or OTR) alarms.<br>Reseat the SP circuit pack.<br>If the condition remains, contact Nortel Networks <a href="#">Technical assistance service telephone numbers</a> . |

**Table 1-2 (continued)**  
**Isolating faults that do not generate alarms**

| <b>Problem</b>                  | <b>Cause</b>  | <b>Action</b>  |
|---------------------------------|---|--|
| Excessive Consistent Error Rate | There are marginal conditions on the shelf.                                     | Clear facility alerts associated with the connection, then address equipment alerts.   |
|                                 |   | Perform a graduated loopback test to isolate the errors to a single unit or a group of units.  |
|                                 |   | Perform an equipment switch to an alternate facility.  |
|                                 |   | Perform a path switch to an alternate facility.  |
|                                 | Check for alarms and the performance monitoring points on subtending equipment. |  |
|                                 | There is coupling from the adjacent optical channel (failure undetected).       | Clear facility or equipment alarms on OCLD circuit packs that support the same band at the source or destination.                                |
|                                 | There is coupling from the adjacent optical channel (failure undetected).       | If the measured coupled power is higher than specified, contact Nortel Networks <a href="#">Technical assistance service telephone numbers</a> . |
| Intermittent Bursts of Error    | There are marginal conditions on the shelf.                                     | Check for protection switching events.   |
|                                 |   | Check for alarms and the performance monitoring points on subtending equipment.  |

## Troubleshooting the Optical Metro 5100/5200 system

Most of the problems in the Optical Metro 5100/5200 system are fault conditions that are reported in the System Manager. However, the shelf maintenance panel, cooling units, rectifiers, and circuit packs, all have lamps on the faceplate to provide a visual indication of the current status of the component.

The tables in this chapter describe hardware and connection problems that you can analyze and correct by responding to changes reported by the indicator lamps on the shelf and shelf components.

Individual descriptions of the circuit pack indicator lamps are presented at the beginning of the alarm clearing procedures for that type of circuit pack.

Read [“Safety precautions” on page 1-4](#) in this chapter before you begin.

**Optical Metro 5200 shelf indicator lamps**

Table 1-3 lists the actions to take in response to status changes reported by the indicator lamps on the Optical Metro 5200 shelf maintenance panel.

**Table 1-3  
Optical Metro 5200 maintenance panel indicator lamps**

| Indicator lamp             | Color/ State       | Meaning  | Action  |
|----------------------------|--------------------|--|---|
| <b>Power</b>               |                    |  |   |
| POWER A<br>POWER B         | green/<br>on       | There is power from source A/or B and the switch is active (closed).     | No action required.   |
|                            | red/<br>on         | The switch is in the OFF (O) position.                                   | Set the breaker to the ON (   ) position.   |
|                            | off                | There is no power from source A/or B.                                    | <ul style="list-style-type: none"> <li>• Check the power connection at the shelf.</li> <li>• Check the power at the output for the power supply.</li> <li>• Check the power at the input for the power supply.</li> </ul> |
| <b>Alarm</b>               |                    |  |   |
| Critical                   | red/<br>on         | There is a critical alarm.   | View the Active Alarms and Event Console tabs in System Manager.  |
| Major                      | red/<br>on         | There is a major alarm.  | View the Active Alarms and Event Console tabs in System Manager.  |
| Minor                      | yellow/<br>on      | There is a minor alarm.  | View the Active Alarms and Event Console tabs in System Manager.  |
| ACO                        | yellow/<br>on      | A critical alarm condition has been acknowledged and continues to exist. | View the Active Alarms and Event Console tabs in System Manager.<br>(See Note)  |
| <b>Ethernet ports</b>      |                    |  |   |
| 10Base-T 1X<br>10Base-T 2X | green/<br>flashing | There is data present.   | No action required.   |
| DATA                       | green<br>off       | There is no data present.  | <ul style="list-style-type: none"> <li>• Check that the cable is correctly connected at both ends.</li> <li>• Check for a signal from the source.</li> </ul>  |

**Table 1-3 (continued)**  
**Optical Metro 5200 maintenance panel indicator lamps**

| Indicator lamp   | Color/ State  | Meaning   | Action   |
|--|---------------|---|--|
| 10Base-T 1X<br>10Base-T 2X<br>LINK   | yellow/<br>on | The connection is functioning.                            | No action required   |
|  | off           | The connection is not functioning                         | <ul style="list-style-type: none"> <li>• Check that the cable is correctly connected at both ends.</li> <li>• Check for a signal from the source.</li> </ul> |
| <b>Optical Metro 5200 shelf cooling unit</b>   |               |   |  |
| STATUS   | green/<br>on  | The cooling unit has power and both fans are functioning. | No action required.  |
|  | red/<br>on    | There is a problem with the fans.                         | Replace the cooling unit.  |
|  | off           | There is no power to the cooling unit.                    | Make sure that the cooling unit is correctly seated.   |
| <b>Note:</b> An audible alarm is raised in response to critical and major alarms. Press the alarm cut off (ACO) button to silence the audible alarm. |               |   |  |

**Optical Metro 5100 shelf indicator lamps**

Table 1-4 lists the actions to take in response to status changes reported by the indicator lamps on the Optical Metro 5100 shelf maintenance panel.

**Table 1-4**  
**Optical Metro 5100 shelf maintenance panel indicator lamps**

| Indicator lamp | Color/ State | Meaning  | Action  |
|----------------|--------------|--|---|
| <b>Power</b>   |              |  |   |
| POWER          | green/<br>on | There is power from source A, or B, and the breaker is in the ON position ( ). | No action required.   |
|                | red/<br>on   | The breaker is in the OFF position (O).  | Set the breaker to the ON ( ) position.   |
|                | off          | There is no power from source A, or B.   | Check the power connection at the shelf.<br>Check the power at the output for the power supply.<br>Check the power at the input for the power supply. |

**Table 1-4 (continued)**  
**Optical Metro 5100 shelf maintenance panel indicator lamps**

|  |                    |  |  |
|--|--------------------|--|--|
| STATUS   | green/<br>on       | The shelf has power and both fans are functioning.                       | No action required.  |
|  | red/<br>on         | One or both fans have failed.  | Replace the cooling unit.  |
| <b>Alarms</b>  |                    |  |  |
| Critical   | red                | There is a critical alarm.   | View the Active Alarms and Event Console tabs in System Manager.   |
| Major  | red                | There is a major alarm.  | View the Active Alarms and Event Console tabs in System Manager.   |
| Minor  | yellow             | There is a minor alarm.  | View the Active Alarms and Event Console tabs in System Manager.   |
| ACO  | yellow             | A critical alarm condition has been acknowledged and continues to exist. | View the Active Alarms and Event Console tabs in System Manager.<br>(See Note)   |
| <b>Ethernet ports</b>  |                    |  |  |
| 10Base-T 1X<br>10Base-T 2X<br>DATA   | green/<br>flashing | There is data present.   | No action required.  |
|  | off                | There is no data present.  | <ul style="list-style-type: none"> <li>• Check that the cable is correctly connected at both ends.</li> <li>• Check for a signal from the source.</li> </ul> |
| 10Base-T 1X<br>10Base-T 2X<br>LINK   | yellow/<br>on      | The connection is functioning.   | No action required   |
|  | off                | The connection is not functioning  | <ul style="list-style-type: none"> <li>• Check that the cable is correctly connected at both ends.</li> <li>• Check for a signal from the source.</li> </ul> |
| <b>Note:</b> An audible alarm is raised in response to a critical or major alarm. Press the alarm cut off (ACO) button to silence the audible alarm. |                    |  |  |

### Ethernet hub indicator lamps

Table 1-5 lists the actions to take in response to status changes reported by the indicator lamps on the Ethernet hub.

**Table 1-5**  
**Ethernet hub indicator lamps**

| Indicator lamp   | Color/ State | Meaning   | Action   |
|--|--------------|---|--|
| PWR  | on           | There is power from source A or B, and the breaker is active (closed).                          | No action required.  |
|  | off          | There is no power to the hub.   | <ul style="list-style-type: none"> <li>• Make sure that the breaker is set to the ON (   ) position.</li> <li>• Check the power connection at the shelf.</li> <li>• Check the power at the output for the power supply.</li> <li>• Check the power at the input for the power supply.</li> </ul> |
| LINK   | on           | The data link is functioning.   | No action required   |
|  | flashing     | The port is partitioned from the network. (See Note)  | <ul style="list-style-type: none"> <li>• Connect the cable to another port on the Ethernet hub.</li> <li>• Replace the network interface card in the shelf.</li> </ul>   |
|  | off          | The Ethernet cable is not physically connected to the port or the shelf.                        | Check the physical connections of the cable between the port on the Ethernet hub and the shelf.  |
|  |              | The wrong type of Ethernet cable is used to make the connection between the port and the shelf. | Replace the cable with a shielded cross-over Ethernet cable.   |
|  |              | The network interface card (NIC) is not functioning.  | Replace the network interface card in the maintenance panel on the shelf.  |
| The port is not functioning.   |              | Connect the cable to another port on the Ethernet hub.  |  |
| RX   | flashing     | The port is receiving data.   | No action required.  |
|  | off          | The port is not receiving data.   | No action required.  |
| <p><b>Note:</b> The hub partitions a port from the network if the frequency or duration of collisions on that port is excessive. The hub automatically removes the partition when the problem is resolved.</p> |              |   |  |

Table 1-6 lists the actions to take in response to status changes reported by the indicator lamps on the 3U APRS and the 1U APRS rectifiers.

**Table 1-6**  
**Indicator lamps on and 3U APRS and 1U APRS rectifiers**

| Indicator lamp | Color/ State | Meaning   | Action  |
|----------------|--------------|---|---|
| <b>3U APRS</b> |              |   |   |
| OUTPUT OK      | green/ on    | The unit is functioning normally.   | No action required.   |
|                | off          | There is no dc power at the output.   | <ul style="list-style-type: none"> <li>• Check the ac power supply for the unit.</li> <li>• Check the ac power cable connection to the unit.</li> </ul>                 |
| <b>1U APRS</b> |              |   |   |
| DC OK          | green/ on    | The module is functioning normally.   | No action required.   |
|                | red/ on      | <ul style="list-style-type: none"> <li>• The output from the module may be shorted or</li> <li>• the module has failed</li> </ul> | <ul style="list-style-type: none"> <li>• Check the wiring between the module and the shelf.</li> <li>If the wiring is correct, replace the rectifier module.</li> </ul> |
|                | off          | The ac mains voltage has failed.  | <ul style="list-style-type: none"> <li>• Check the ac power supply for the module.</li> <li>• Check the ac power cable connection to the module.</li> </ul>             |
| FAN            | green/ on    | The fan is functioning normally.  | No action required  |
|                | red/ on      | The fan has failed.   | Replace the rectifier module.   |
|                | off          | The ac mains voltage has failed.  | <ul style="list-style-type: none"> <li>• Check the ac power supply for the module.</li> <li>• Check the ac power cable connection to the module.</li> </ul>             |

## Troubleshooting hardware baseline exceptions in Health Check reports

The Health Check application can verify the hardware baseline for each circuit pack on any Optical Metro 5100/5200 shelf. If a circuit pack is found to be below the hardware baseline, an exception flag is raised against that circuit pack in the health check report, as illustrated in [Figure 1-2](#).

You should run the Health Check before starting a software upgrade, after completing a software upgrade, and after replacing a circuit pack.

**Note:** The hardware baseline check is only available in Optical Metro 5100/5200 software releases 4.1 and later.

**Figure 1-2**  
**A portion of a Health Check report showing a hardware below baseline exception**

OM1046t

```

HEALTH CHECK REPORT
-----
Site Name: Site #1
Shelf Name: Shelf #74
Site Id: 1
Shelf Id: 1
IP Address: 47xx.yy.zz
Product: OPTera 5200
Creation Time: 2002/01/29 07:00:47

Configured Load: 4.1.xx.yy

Active DB Server at Slot: 9
Standby DB Server at Slot: 10
Is Database Ready for Upgrade: Yes

Slot 1 (OCLD):
Zone A contains: 4.1.X.y [committed]
Zone B contains: 4.1.X.y [committed]

Card Type: OCLD PEC: NT0H02JA Revision: 08
SerialNumber: 1JZ1BM0C CLEI: WMC2XZHCAD

Slot 2 (OCLD):
Zone A contains: 4.1.X.y [committed]
Zone B contains: 4.1.X.y [committed]

Card Type: OCLD PEC: NT0H01JB Revision: 01
SerialNumber: 1K1B47C7 CLEI: WMC1JF0DAA

Slot 5 (OCI):
Zone A contains: 4.1.X.y [committed]
Zone B contains: 4.1.X.y [committed]

This card is NOT supported - Below Baseline <- [Exception]
Card Type: OCI PEC: NT0H10HJ Revision: 01
SerialNumber: 15Z19LOX CLEI: WMI2AA0AAA

```

Specifically, a health check validates the following things:

- the version of every circuit pack
- bootloader version of the SP circuit pack
- Field Programmable Gateway Array (FPGA) version of the OSC, OTR, and APBE circuit packs

The hardware baseline can be platform specific. For a particular circuit pack, baseline versions may be different for the Optical Metro 5100 and Optical Metro 5200. Read the latest Baseline Report to see if the circuit pack is compatible with the Release version of the shelf.

Baseline Reports are available through Nortel Networks Fax-on-demand. Refer to the [“Technical assistance service telephone numbers”](#) section in [“About this document”](#) at the beginning of this book.

Use [Table 1-7](#) to troubleshoot hardware baseline exceptions raised during the health check validation process.

**Table 1-7**  
**Troubleshooting hardware baseline exceptions in health check reports**

| Exception           | Meaning   | Action  |
|---------------------|---|---|
| Below Baseline      | The circuit pack is below the hardware baseline version set for the given software release.                       | Replace the circuit pack with a compatible version. Read the latest Baseline Report to see if the circuit pack is compatible with the Release version of the shelf.<br><br>Baseline Reports are available through Nortel Networks Fax-on-demand. Refer to the <a href="#">“Technical assistance service telephone numbers”</a> section in the <a href="#">“About this document”</a> chapter of this book.<br>After obtaining a compatible circuit pack, follow the correct procedure in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| Non-Baseline        | The circuit pack is a prototype circuit pack.   | The circuit pack must be replaced with a standard release version. Contact Nortel Networks Technical Support.<br>After obtaining a replacement circuit pack, follow the correct procedure in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |
| Unidentified Card   | The circuit pack is not part of the hardware baseline and therefore not supported for the given software release. | The circuit pack has faulty identification and must be replaced. Contact Nortel Networks Technical Support.<br>After obtaining a replacement circuit pack, follow the correct procedure in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |
| FPGA Below Baseline | The FPGA version of the circuit pack is below the hardware baseline version set for the given software release.   | The circuit pack must be brought up to baseline. Contact Nortel Networks Technical Support.   |

**Table 1-7 (continued)**  
**Troubleshooting hardware baseline exceptions in health check reports**

| Exception                 | Meaning   | Action  |
|---------------------------|---|---|
| Bootloader Below Baseline | The bootloader version of the circuit pack is below the hardware baseline version set for the given software release. | Use the Optical Metro 5100/5200 software and documentation CD-ROM to update the bootloader.   |
| Uncommitted               | The shelf is not operating in a committed state.  | Make sure that the shelf is in a committed state before running the HealthCheck.  |
|                           | Flash memory issue.   | The circuit pack must be replaced. Contact Nortel Networks Technical Support. After obtaining a replacement circuit pack, follow the correct procedure in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| Inconsistent load         | Flash memory issue.   | The circuit pack must be replaced. Contact Nortel Networks Technical Support. After obtaining a replacement circuit pack, follow the correct procedure in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |

## Procedure list

[Table 1-8](#) lists the procedures in this chapter.

**Table 1-8**  
**Procedures in this chapter**

| <b>Procedure</b>   | <b>Page</b>          |
|--|----------------------|
| <a href="#">1-1 Uninstalling the Java plug-in (Windows 2000/NT/XP)</a> | <a href="#">1-19</a> |
| <a href="#">1-2 Installing the Java plug-in (Windows 2000/NT/XP)</a>   | <a href="#">1-25</a> |
| <a href="#">1-3 Installing the Java plug-in (Solaris)</a>              | <a href="#">1-27</a> |

## Procedure 1-1 Uninstalling the Java plug-in (Windows 2000/NT/XP)

Follow this procedure to uninstall the Java plug-in on a PC running Windows 2000, Windows NT, or Windows XP.

### Requirements

You must use an administrator user ID and password to log into the PC when you perform this procedure.

Ensure that your Windows 2000/NT/XP computer meets the minimum requirements (refer to *Technical Specifications*, 323-1701-180, for requirement details).

### Action

| Step   | Action   |                    |                   |  |                         |  |                         |                 |                        |
|--|--|--------------------|-------------------|--|-------------------------|--|-------------------------|-----------------|------------------------|
| 1  | <table border="0"> <tr> <td><b>If your PC</b></td> <td><b>Then go to</b></td> </tr> <tr> <td>uses Windows 2000</td> <td><a href="#">step 30</a></td> </tr> <tr> <td>uses Windows XP</td> <td><a href="#">step 53</a></td> </tr> <tr> <td>uses Windows NT</td> <td><a href="#">step 2</a></td> </tr> </table> | <b>If your PC</b>  | <b>Then go to</b> | uses Windows 2000                                | <a href="#">step 30</a> | uses Windows XP                                      | <a href="#">step 53</a> | uses Windows NT | <a href="#">step 2</a> |
| <b>If your PC</b>                                    | <b>Then go to</b>  |                    |                   |  |                         |  |                         |                 |                        |
| uses Windows 2000                                    | <a href="#">step 30</a>  |                    |                   |  |                         |  |                         |                 |                        |
| uses Windows XP                                      | <a href="#">step 53</a>  |                    |                   |  |                         |  |                         |                 |                        |
| uses Windows NT                                      | <a href="#">step 2</a>   |                    |                   |  |                         |  |                         |                 |                        |
| 2  | <p>On the desktop of the PC</p> <ul style="list-style-type: none"> <li>• click on the <b>Start</b> button</li> <li>• click on <b>Settings</b></li> <li>• click on <b>Control Panel</b></li> </ul> <p><i>The Control Panel window opens.</i></p>  |                    |                   |  |                         |  |                         |                 |                        |
| 3  | <p>In the Control Panel window, double-click on <b>Add/Remove Programs</b>.</p> <p><i>The Add/Remove Programs Properties dialog opens.</i></p>   |                    |                   |  |                         |  |                         |                 |                        |
| 4  | <p>In the Add/Remove Programs Properties dialog, scroll through the list of software and locate any Java 2 Runtime Environment application.</p>  |                    |                   |  |                         |  |                         |                 |                        |
| 5  | <table border="0"> <tr> <td><b>If you have</b></td> <td><b>Then go to</b></td> </tr> <tr> <td>located a Java 2 Runtime Environment application</td> <td><a href="#">step 9</a></td> </tr> <tr> <td>not located a Java 2 Runtime Environment application</td> <td><a href="#">step 6</a></td> </tr> </table>  | <b>If you have</b> | <b>Then go to</b> | located a Java 2 Runtime Environment application | <a href="#">step 9</a>  | not located a Java 2 Runtime Environment application | <a href="#">step 6</a>  |                 |                        |
| <b>If you have</b>                                   | <b>Then go to</b>  |                    |                   |  |                         |  |                         |                 |                        |
| located a Java 2 Runtime Environment application     | <a href="#">step 9</a>   |                    |                   |  |                         |  |                         |                 |                        |
| not located a Java 2 Runtime Environment application | <a href="#">step 6</a>   |                    |                   |  |                         |  |                         |                 |                        |
| 6  | <p>In the Add/Remove Programs Properties dialog, click on the <b>OK</b> button.</p> <p><i>The Add/Remove Programs Properties dialog closes.</i></p>  |                    |                   |  |                         |  |                         |                 |                        |
| 7  | <p>Close the Control Panel window.</p>   |                    |                   |  |                         |  |                         |                 |                        |

—continued—

Procedure 1-1 (continued)

**Uninstalling the Java plug-in (Windows 2000/NT/XP)**

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| <b>Step</b> | <b>Action</b> |
|-------------|---------------|
|-------------|---------------|

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- |          |   |
|----------|---|
| <b>8</b> | Go to <a href="#">step 81</a> .   |
| <b>9</b> | In the Add/Remove Programs Properties dialog: <ul style="list-style-type: none"><li>• select the Java 2 Runtime Environment application</li><li>• click on the <b>Add/Remove</b> button</li></ul> <i>A confirmation dialog opens.</i> |

**ATTENTION**

At [step 10](#) the system can prompt you with a message indicating that some files may be used by another application. If so, do not delete these files.

- | <b>10</b>   | In the confirmation dialog, click on the <b>Yes</b> button or on the <b>OK</b> button.   |                                      |                   |   |                         |   |                         |
|---|--|--------------------------------------|-------------------|---|-------------------------|---|-------------------------|
| <b>11</b>   | <table><thead><tr><th><b>If the</b></th><th><b>Then go to</b></th></tr></thead><tbody><tr><td>Remove Programs from Your Computer dialog opens</td><td><a href="#">step 19</a></td></tr><tr><td>InstallShield Wizard dialog opens</td><td><a href="#">step 12</a></td></tr></tbody></table>   | <b>If the</b>                        | <b>Then go to</b> | Remove Programs from Your Computer dialog opens | <a href="#">step 19</a> | InstallShield Wizard dialog opens   | <a href="#">step 12</a> |
| <b>If the</b>   | <b>Then go to</b>  |                                      |                   |   |                         |   |                         |
| Remove Programs from Your Computer dialog opens                                   | <a href="#">step 19</a>  |                                      |                   |   |                         |   |                         |
| InstallShield Wizard dialog opens   | <a href="#">step 12</a>  |                                      |                   |   |                         |   |                         |
| <b>12</b>   | The InstallShield Wizard dialog displays the status of the Java Plug-in files being deleted. A dialog may open which recommends that you restart the computer.   |                                      |                   |   |                         |   |                         |
| <b>13</b>   | <table><thead><tr><th><b>If at <a href="#">step 12</a></b></th><th><b>Then go to</b></th></tr></thead><tbody><tr><td>the InstallShield Wizard dialog closes</td><td><a href="#">step 16</a></td></tr><tr><td>the InstallShield Wizard Complete dialog recommends that you restart the computer</td><td><a href="#">step 14</a></td></tr></tbody></table> | <b>If at <a href="#">step 12</a></b> | <b>Then go to</b> | the InstallShield Wizard dialog closes          | <a href="#">step 16</a> | the InstallShield Wizard Complete dialog recommends that you restart the computer | <a href="#">step 14</a> |
| <b>If at <a href="#">step 12</a></b>  | <b>Then go to</b>  |                                      |                   |   |                         |   |                         |
| the InstallShield Wizard dialog closes  | <a href="#">step 16</a>  |                                      |                   |   |                         |   |                         |
| the InstallShield Wizard Complete dialog recommends that you restart the computer | <a href="#">step 14</a>  |                                      |                   |   |                         |   |                         |
| <b>14</b>   | In the InstallShield Wizard Complete dialog: <ul style="list-style-type: none"><li>• click on the <b>Yes, I want to restart my computer now</b> button</li><li>• click on the <b>Finish</b> button</li></ul>   |                                      |                   |   |                         |   |                         |
| <b>15</b>   | Wait for the restart to complete, then go to <a href="#">step 2</a> .  |                                      |                   |   |                         |   |                         |
| <b>16</b>   | In the Add/Remove Programs Properties dialog, click on the <b>OK</b> button.<br><i>The Add/Remove Programs Properties dialog closes.</i>   |                                      |                   |   |                         |   |                         |
| <b>17</b>   | Close the Control Panel window.  |                                      |                   |   |                         |   |                         |
| <b>18</b>   | Go to <a href="#">step 2</a> .   |                                      |                   |   |                         |   |                         |
| <b>19</b>   | The Remove Programs From Your Computer dialog displays the status of the Java Plug-in files being deleted. Wait until completion.  |                                      |                   |   |                         |   |                         |
| <b>20</b>   | In the Remove Programs From Your Computer dialog, click on the <b>OK</b> button.<br><i>A dialog can open to recommend that you restart your PC.</i>  |                                      |                   |   |                         |   |                         |

—continued—

Procedure 1-1 (continued)  
**Uninstalling the Java plug-in (Windows 2000/NT/XP)**

| Step | Action  | Then go to   |
|------|---|--|
| 21   | <p><b>If</b> at <a href="#">step 20</a><br/>                     the dialog opens<br/>                     otherwise</p>  | <p><b>Then</b> go to<br/> <a href="#">step 22</a><br/> <a href="#">step 27</a></p> |
| 22   | <p>In the dialog, click on the <b>OK</b> button.<br/> <i>The dialog closes.</i></p>   |  |
| 23   | <p>In the Add/Remove Programs Properties dialog, click on the <b>OK</b> button.<br/> <i>The Add/Remove Programs Properties dialog closes.</i></p>   |  |
| 24   | <p>Close the Control Panel window.</p>  |  |
| 25   | <p>Restart your PC.</p>   |  |
| 26   | <p>Wait for the restart to complete, then go to <a href="#">step 2</a>.</p>   |  |
| 27   | <p>In the Add/Remove Programs Properties dialog, click on the <b>OK</b> button.<br/> <i>The Add/Remove Programs Properties dialog closes.</i></p>   |  |
| 28   | <p>Close the Control Panel window.</p>  |  |
| 29   | <p>Go to <a href="#">step 2</a>.</p>  |  |
| 30   | <p>On the desktop of the PC:</p> <ul style="list-style-type: none"> <li>• click on the <b>Start</b> button</li> <li>• click on <b>Settings</b></li> <li>• click on <b>Control Panel</b></li> <li>• click on <b>Add/Remove Programs</b></li> </ul> <p><i>The Add/Remove Programs dialog opens.</i></p> |  |
| 31   | <p>In the Add/Remove Programs dialog, scroll through the list of software and locate any Java 2 Runtime Environment application.</p>  |  |
| 32   | <p><b>If</b> you have</p>   | <p><b>Then</b> go to</p>   |
|      | <p>located a Java 2 Runtime Environment application</p>   | <p><a href="#">step 35</a></p>   |
|      | <p>not located a Java 2 Runtime Environment application</p>   | <p><a href="#">step 33</a></p>   |
| 33   | <p>Close the Add/Remove Programs window</p>   |  |
| 34   | <p>Go to <a href="#">step 81</a>.</p>   |  |
| 35   | <p>In the Add/Remove Programs dialog:</p> <ul style="list-style-type: none"> <li>• select the Java 2 Runtime Environment application</li> <li>• click on the <b>Change/Remove</b> button</li> </ul> <p><i>A confirmation dialog opens.</i></p>  |  |

—continued—

Procedure 1-1 (continued)

**Uninstalling the Java plug-in (Windows 2000/NT/XP)**

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**Step    Action**

---

**ATTENTION**

At [step 36](#) the system can prompt you with a message indicating that some files may be used by another application. If so, do not delete these files.

- |   |   |                                      |                   |   |                         |   |                         |
|---|---|--------------------------------------|-------------------|---|-------------------------|---|-------------------------|
| <b>36</b>   | In the confirmation dialog, click on the <b>Yes</b> button or on the <b>OK</b> button.  |                                      |                   |   |                         |   |                         |
| <b>37</b>   | <table border="0"><tr><td style="vertical-align: top;"><b>If the</b></td><td style="text-align: right;"><b>Then go to</b></td></tr><tr><td>Remove Programs from Your Computer dialog opens</td><td style="text-align: right;"><a href="#">step 44</a></td></tr><tr><td>InstallShield Wizard dialog opens</td><td style="text-align: right;"><a href="#">step 38</a></td></tr></table>   | <b>If the</b>                        | <b>Then go to</b> | Remove Programs from Your Computer dialog opens | <a href="#">step 44</a> | InstallShield Wizard dialog opens   | <a href="#">step 38</a> |
| <b>If the</b>   | <b>Then go to</b>   |                                      |                   |   |                         |   |                         |
| Remove Programs from Your Computer dialog opens                                   | <a href="#">step 44</a>   |                                      |                   |   |                         |   |                         |
| InstallShield Wizard dialog opens   | <a href="#">step 38</a>   |                                      |                   |   |                         |   |                         |
| <b>38</b>   | The InstallShield Wizard dialog displays the status of the Java Plug-in files being deleted. A dialog may open which recommends that you restart the computer.  |                                      |                   |   |                         |   |                         |
| <b>39</b>   | <table border="0"><tr><td style="vertical-align: top;"><b>If at <a href="#">step 38</a></b></td><td style="text-align: right;"><b>Then go to</b></td></tr><tr><td>the InstallShield Wizard dialog closes</td><td style="text-align: right;"><a href="#">step 42</a></td></tr><tr><td>the InstallShield Wizard Complete dialog recommends that you restart the computer</td><td style="text-align: right;"><a href="#">step 40</a></td></tr></table> | <b>If at <a href="#">step 38</a></b> | <b>Then go to</b> | the InstallShield Wizard dialog closes          | <a href="#">step 42</a> | the InstallShield Wizard Complete dialog recommends that you restart the computer | <a href="#">step 40</a> |
| <b>If at <a href="#">step 38</a></b>  | <b>Then go to</b>   |                                      |                   |   |                         |   |                         |
| the InstallShield Wizard dialog closes  | <a href="#">step 42</a>   |                                      |                   |   |                         |   |                         |
| the InstallShield Wizard Complete dialog recommends that you restart the computer | <a href="#">step 40</a>   |                                      |                   |   |                         |   |                         |
| <b>40</b>   | In the InstallShield Wizard Complete dialog: <ul style="list-style-type: none"><li>• click on the <b>Yes, I want to restart my computer now</b> button</li><li>• click on the <b>Finish</b> button</li></ul>  |                                      |                   |   |                         |   |                         |
| <b>41</b>   | Wait for the restart to complete, then go to <a href="#">step 30</a> .  |                                      |                   |   |                         |   |                         |
| <b>42</b>   | Close the Add/Remove Programs dialog.   |                                      |                   |   |                         |   |                         |
| <b>43</b>   | Go to <a href="#">step 30</a> .   |                                      |                   |   |                         |   |                         |
| <b>44</b>   | The Remove Programs From Your Computer dialog displays the status of the Java Plug-in files being deleted. Wait until completion.   |                                      |                   |   |                         |   |                         |
| <b>45</b>   | In the Remove Programs From Your Computer dialog, click on the <b>OK</b> button.<br><i>A dialog can open to recommend that you restart your PC.</i>   |                                      |                   |   |                         |   |                         |
| <b>46</b>   | <table border="0"><tr><td style="vertical-align: top;"><b>If at <a href="#">step 45</a></b></td><td style="text-align: right;"><b>Then go to</b></td></tr><tr><td>the dialog opens</td><td style="text-align: right;"><a href="#">step 47</a></td></tr><tr><td>otherwise</td><td style="text-align: right;"><a href="#">step 51</a></td></tr></table>   | <b>If at <a href="#">step 45</a></b> | <b>Then go to</b> | the dialog opens                                | <a href="#">step 47</a> | otherwise   | <a href="#">step 51</a> |
| <b>If at <a href="#">step 45</a></b>  | <b>Then go to</b>   |                                      |                   |   |                         |   |                         |
| the dialog opens  | <a href="#">step 47</a>   |                                      |                   |   |                         |   |                         |
| otherwise   | <a href="#">step 51</a>   |                                      |                   |   |                         |   |                         |
| <b>47</b>   | In the dialog, click on the <b>OK</b> button.<br><i>The dialog closes.</i>  |                                      |                   |   |                         |   |                         |
| <b>48</b>   | Close the Add/Remove Programs window.   |                                      |                   |   |                         |   |                         |
| <b>49</b>   | Restart your PC.  |                                      |                   |   |                         |   |                         |
| <b>50</b>   | Wait for the restart to complete, then go to <a href="#">step 30</a> .  |                                      |                   |   |                         |   |                         |

—continued—

Procedure 1-1 (continued)

**Uninstalling the Java plug-in (Windows 2000/NT/XP)**

| Step   | Action  |                    |                   |  |                         |  |                         |
|--|---|--------------------|-------------------|--|-------------------------|--|-------------------------|
| 51   | Close the Add/Remove Programs window.   |                    |                   |  |                         |  |                         |
| 52   | Go to <a href="#">step 30</a> .   |                    |                   |  |                         |  |                         |
| 53   | On the desktop of the PC: <ul style="list-style-type: none"> <li>• click on the <b>Start</b> button</li> <li>• click on <b>Settings</b></li> <li>• click on <b>Control Panel</b></li> </ul> <i>The Control Panel window opens.</i>  |                    |                   |  |                         |  |                         |
| 54   | In the Control Panel window, double-click on <b>Add or Remove Programs</b> .<br><i>The Add or Remove Programs dialog opens.</i>   |                    |                   |  |                         |  |                         |
| 55   | In the Add or Remove Programs dialog, scroll through the list of software and locate any Java 2 Runtime Environment application.  |                    |                   |  |                         |  |                         |
| 56   | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If you have</b></td> <td style="width: 50%; text-align: right;"><b>Then go to</b></td> </tr> <tr> <td>located a Java 2 Runtime Environment application</td> <td style="text-align: right;"><a href="#">step 60</a></td> </tr> <tr> <td>not located a Java 2 Runtime Environment application</td> <td style="text-align: right;"><a href="#">step 57</a></td> </tr> </table> | <b>If you have</b> | <b>Then go to</b> | located a Java 2 Runtime Environment application | <a href="#">step 60</a> | not located a Java 2 Runtime Environment application | <a href="#">step 57</a> |
| <b>If you have</b>                                   | <b>Then go to</b>   |                    |                   |  |                         |  |                         |
| located a Java 2 Runtime Environment application     | <a href="#">step 60</a>   |                    |                   |  |                         |  |                         |
| not located a Java 2 Runtime Environment application | <a href="#">step 57</a>   |                    |                   |  |                         |  |                         |
| 57   | In the Add or Remove Programs dialog, click on the <b>Close</b> button.<br><i>The Add or Remove Programs dialog closes.</i>   |                    |                   |  |                         |  |                         |
| 58   | Close the Control Panel window.   |                    |                   |  |                         |  |                         |
| 59   | Go to <a href="#">step 81</a> .   |                    |                   |  |                         |  |                         |
| 60   | In the Add or Remove Programs dialog: <ul style="list-style-type: none"> <li>• select the Java 2 Runtime Environment application</li> <li>• click on the <b>Change/Remove</b> button</li> </ul> <i>A confirmation dialog opens.</i>   |                    |                   |  |                         |  |                         |

**ATTENTION**

At [step 61](#) the system can prompt you with a message indicating that some files may be used by another application. If so, do not delete these files.

|   |  |               |                   |   |                         |                                   |                         |
|---|--|---------------|-------------------|---|-------------------------|-----------------------------------|-------------------------|
| 61  | In the confirmation dialog, click on the <b>Yes</b> button or on the <b>OK</b> button.   |               |                   |   |                         |                                   |                         |
| 62  | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If the</b></td> <td style="width: 50%; text-align: right;"><b>Then go to</b></td> </tr> <tr> <td>Remove Programs from Your Computer dialog opens</td> <td style="text-align: right;"><a href="#">step 70</a></td> </tr> <tr> <td>InstallShield Wizard dialog opens</td> <td style="text-align: right;"><a href="#">step 63</a></td> </tr> </table> | <b>If the</b> | <b>Then go to</b> | Remove Programs from Your Computer dialog opens | <a href="#">step 70</a> | InstallShield Wizard dialog opens | <a href="#">step 63</a> |
| <b>If the</b>                                   | <b>Then go to</b>  |               |                   |   |                         |                                   |                         |
| Remove Programs from Your Computer dialog opens | <a href="#">step 70</a>  |               |                   |   |                         |                                   |                         |
| InstallShield Wizard dialog opens               | <a href="#">step 63</a>  |               |                   |   |                         |                                   |                         |
| 63  | The InstallShield Wizard dialog displays the status of the Java Plug-in files being deleted. A dialog may open which recommends that you restart the computer.   |               |                   |   |                         |                                   |                         |

—continued—

Procedure 1-1 (continued)

**Uninstalling the Java plug-in (Windows 2000/NT/XP)**

---

| <b>Step</b> | <b>Action</b>  |                         |
|-------------|--|-------------------------|
| <b>64</b>   | <b>If at <a href="#">step 63</a></b>   | <b>Then go to</b>       |
|             | the InstallShield Wizard dialog closes   | <a href="#">step 67</a> |
|             | the InstallShield Wizard Complete dialog recommends that you restart the computer  | <a href="#">step 65</a> |
| <b>65</b>   | In the InstallShield Wizard Complete dialog: <ul style="list-style-type: none"><li>• click on the <b>Yes, I want to restart my computer now</b> button</li><li>• click on the <b>Finish</b> button</li></ul> |                         |
| <b>66</b>   | Wait for the restart to complete, then go to <a href="#">step 53</a> .   |                         |
| <b>67</b>   | Close the Add or Remove Programs dialog.   |                         |
| <b>68</b>   | Close the Control Panel window.  |                         |
| <b>69</b>   | Go to <a href="#">step 53</a> .  |                         |
| <b>70</b>   | The Remove Programs From Your Computer dialog displays the status of the Java Plug-in files being deleted. Wait until completion.  |                         |
| <b>71</b>   | In the Remove Programs From Your Computer dialog, click on the <b>OK</b> button.<br><i>A dialog can open to recommend that you restart your PC.</i>  |                         |
| <b>72</b>   | <b>If at <a href="#">step 71</a></b>   | <b>Then go to</b>       |
|             | the dialog opens   | <a href="#">step 73</a> |
|             | otherwise  | <a href="#">step 78</a> |
| <b>73</b>   | In the dialog, click on the <b>OK</b> button.<br><i>The dialog closes.</i>   |                         |
| <b>74</b>   | In the Add or Remove Programs dialog, click on the <b>Close</b> button.<br><i>The Add or Remove Programs dialog closes.</i>  |                         |
| <b>75</b>   | Close the Control Panel window.  |                         |
| <b>76</b>   | Restart your PC.   |                         |
| <b>77</b>   | Wait for the restart to complete, then go to <a href="#">step 53</a> .   |                         |
| <b>78</b>   | In the Add or Remove Programs dialog, click on the <b>Close</b> button.<br><i>The Add or Remove Programs dialog closes.</i>  |                         |
| <b>79</b>   | Close the Control Panel window.  |                         |
| <b>80</b>   | Go to <a href="#">step 53</a> .  |                         |
| <b>81</b>   | You have completed the procedure.  |                         |

—end—

## Procedure 1-2 Installing the Java plug-in (Windows 2000/NT/XP)

Follow this procedure to install the Java plug-in on a PC running Windows 2000, Windows NT, or Windows XP.

### Requirements

Table 1-9 lists the materials required to install the Java plug-in.

**Table 1-9**  
**Tools and materials required**

| Item                             | Quantity | Supplied |
|----------------------------------|----------|----------|
| Software delivery kit (NT0H60xx) | 1        | yes      |

You must use an administrator user ID and password to log into the PC when you perform this procedure.

Ensure that your Windows 2000/NT/XP computer meets the minimum requirements (refer to *Technical Specifications*, 323-1701-180, for requirement details).

### Action

| Step | Action  |
|------|---|
| 1    | Insert the software delivery kit (NT0H60xx) CD into the CD-ROM drive of the PC.<br><i>The Optical Metro Setup window opens.</i>                                 |
| 2    | Click on the <b>Cancel</b> button.<br><i>The Exit Setup window opens.</i>   |
| 3    | In the Exit Setup window, click on the <b>Yes</b> button.<br><i>The Setup program closes.</i>   |
| 4    | On your PC, open Windows Explorer.  |
| 5    | In Windows Explorer: <ul style="list-style-type: none"> <li>• select the CD-ROM drive</li> <li>• select <b>Windows</b></li> <li>• select <b>Java</b></li> </ul> |
| 6    | In the Java folder, double-click on <b>Java_JRE_Windows_1_4_1_01.exe</b> .  |
| 7    | Follow the on-screen instructions to install the application.   |

—continued—

Procedure 1-2 (continued)

**Installing the Java plug-in (Windows 2000/NT/XP)**

---

| <b>Step</b> | <b>Action</b>  |
|-------------|--|
| <b>8</b>    | When the installation completes, remove the upgrade software CD-ROM from the CD-ROM drive of the PC. |
| <b>9</b>    | Close Windows Explorer.  |

—end—

## Procedure 1-3 Installing the Java plug-in (Solaris)

Follow this procedure to install the Java plug-in on a Solaris workstation.

### Requirements

Table 1-10 lists the materials required to install the Java plug-in.

**Table 1-10**  
**Tools and materials required**

| Item                             | Quantity | Supplied |
|----------------------------------|----------|----------|
| Software delivery kit (NT0H60xx) | 1        | yes      |

You must use a root user ID and password to log into the Solaris computer when you perform this procedure.

Ensure sure that your Solaris computer meets the minimum requirements (refer to *Technical Specifications*, 323-1701-180, for requirement details).

### Action

| Step | Action  |
|------|---|
| 1    | Insert the software delivery kit (NT0H60xx) CD into the CD-ROM drive of the Solaris computer.<br><i>After up to 15 seconds, the File Manager dialog opens.</i>  |
| 2    | In the File Manager dialog, double-click on the <b>solaris</b> folder.  |
| 3    | In the Solaris folder, double-click on <b>install</b> .<br><i>The Welcome to the Optical Metro 5000 install window appears.</i>   |
| 4    | Follow the on-screen instruction to install only the Java plug-in. That is, install: <ul style="list-style-type: none"> <li>• the environment for Java JRE 1.4.1_01</li> <li>• the Solaris patches that are required to ensure proper operation of Java JRE 1.4.1_01, and</li> <li>• the Java JRE 1.4.1_01 application</li> </ul> |
| 5    | When the installation completes, close the Run window.  |
| 6    | In the File Manager dialog, select the <b>File</b> menu.<br><i>A drop-down menu appears.</i>  |

—continued—

Procedure 1-3 (continued)

**Installing the Java plug-in (Solaris)**

---

| <b>Step</b> | <b>Action</b>  |
|-------------|--|
| 7           | In the drop-down menu, select <b>Eject</b> .<br><i>The Solaris computer ejects the software delivery kit CD.</i> |
| 8           | Log out of the computer.   |

—end—

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# Troubleshooting fault sectionalization and System Level Equalization Control

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## In this chapter

- [Overview on page 2-1](#)
- [Intersite fault sectionalization on page 2-2](#)
- [Intrasite fault sectionalization \(IFS\) on page 2-3](#)
- [Troubleshooting System Level Equalization Control on page 2-7](#)
- [SLEC Status Descriptions and Troubleshooting Information on page 2-17](#)

## Overview

The fault sectionalization feature is designed to correlate the pattern of existing signal failure alarms in a network (OCLD/OTR/MOTR/OFA/APBE–Loss of Signal and OMX–Band Input Failure alarms) to a single fiber span. The Optical Metro 5100/5200 platform provides this capability through two features: intersite fault sectionalization and intrasite fault sectionalization. Each feature oversees a different classification of fiber spans.

Intersite fault sectionalization identifies failures between sites, in the outside fiber plant or backbone fibers.

Intrasite fault sectionalization (IFS) identifies failures within a site, in the fiber spans between equipment deployed at the site.

Fault sectionalization makes it easier to identify the root cause of signal failures, which are difficult to determine in a WDM network due to the transparent passing of optical signals between sites that do not have optical conversion for every wavelength.

Fundamental to the operation of these features is the deployment of the Optical Supervisory Channel (OSC) circuit pack. The OSC sends a point-to-point signal on the WDM fiber that connects the sites in the ring. As a result, intersite faults that affect the outside fiber, such as a fiber break, can be isolated. For IFS, detailed knowledge of site topology and configuration is used, along with the OSC signal, to isolate a root cause.

The intersite fault sectionalization and IFS features have different, and often strict requirements for their deployment. Failure to meet these requirements can cause the features to perform incorrectly. For more information, refer to the “[Fault sectionalization](#)” chapter in *Software and User Interface*, 323-1701-101.

## Intersite fault sectionalization

Intersite fault sectionalization identifies WDM fiber failures between the OSC tray at one site, and the OSC at an adjacent. This feature is available in every network configuration that includes OSC circuit packs and OSC trays.

### Principal alarms raised by intersite fault sectionalization

The following alarms are the key alarms that are raised by the intersite fault sectionalization feature.

#### **OMX–Band (1-8) Input Failure**

Intersite fault sectionalization correlates the occurrence of multiple input failure alarms on OCLD, OTR, or Muxponder circuit packs that are within the same band and that are associated with the same OMX, and reports them with the Band Input Failure (BIF) alarm. OCLD, OTR, or Muxponder input failures are correlated because when all equipment that is associated with the same OMX is experiencing a similar failure, it is likely that a broken OMX fiber is the cause of the problem. If there is only one channel in that band, the software identifies a pigtail or patch cord as the most likely suspect but raising an OCLD /OTR/MOTR–Loss of Signal alarm, instead of a BIF.

Intersite fault sectionalization does not identify suspect fibers automatically, and a manual process is required to identify the specific fiber, or fibers, that are the cause of the set of active BIF alarms.

Follow [Procedure 9-3 “OMX—Band \(1–9\) Input Failure \(East\) or \(West\)”](#), in this book, to clear OMX–BIF alarms.

#### **OSC–Shelf Input Failure**

Intersite fault sectionalization uses the OSC optical signal, as well as other failures on the shelf that contains the OSC circuit pack, to determine which WDM fiber may be the cause of the input failure in the ring. To raise a Shelf Input Failure (SIF) alarm, the OSC circuit pack, and all other circuit packs in the shelf must report a Loss of Signal (LOS) alarm (or a BIF in an OADM/terminal shelf with a multiple channel band), in the same direction (east or west) as the OSC. This is true for OADM/terminal shelves and OFA shelves. When a SIF alarm is raised, any BIF alarm that would be raised on the shelf, is masked by the SIF alarm.

The presence of a SIF alarm does not necessarily indicate that the intersite WDM fiber is broken. It is possible that a multiple fiber break occurred. For example, the OSC tray to the OSC circuit pack and the WDM fiber to the shelf OMX would have the same result.

In general, if all bands coming into the site with the SIF are reporting BIF, and the OSC reports LOS, then the intersite fiber is broken. Otherwise, it is more likely that a multiple fiber break has occurred.

Follow [Procedure 15-22 “OSC—Shelf Input Failure”](#), in this book, to clear OSC–Shelf Input Failure alarms.

## Intrasite fault sectionalization (IFS)

IFS can resolve fault isolation to a specific fiber span within a site, and can identify optical signal failures between equipment at that site. IFS is an optional feature that must be carefully provisioned, and enabled at each site, in order to function. Due to the nature of the Optical Metro 5100/5200 product, you must follow strict configuration and deployment rules for IFS to operate correctly. In particular, you must install two OSC trays and one OSC circuit pack in every site where you want to enable IFS.

The IFS feature collects OFA, APBE, OTR, Muxponder, OCLD, and OSC input failures from all shelves in the ring and correlates them with the band occupancy of the intrasite WDM fibers. When a WDM fiber is broken, the OFA/APBE–LOS, and BIF alarm pattern is compared to the expected alarm pattern that would result for each WDM fiber, if the fiber were broken. When a match is found, the Optical Signal Failure Tx/Rx (OSF) alarms are raised to identify the endpoints of the potentially failed fiber span. Often, more than one match is found.

All matches result in a pair of OSF Tx/Rx alarms. Multiple OSF alarms are reported when a WDM fiber fails because this is a property of the WDM optical signal. IFS correctly identifies all potential fault locations that can cause the optical signal failure. In all cases, only one failed fiber span is identified within each site. In some cases, the OSF Tx and Rx endpoints will correspond to endpoints of more than one physical fiber, but the fibers are adjacent to each other. This occurs when each fiber between the Tx and Rx endpoints have identical band occupancies, and are all equally likely to have the fiber break.

Whenever a pattern of BIF conditions does not match any WDM fiber failure patterns, the BIF alarms (or the LOS alarm in the case of a single channel band) are raised. This only occurs when there are multiple broken fibers, or a site has not been fibered or provisioned correctly. If, for example, the C&L splitter/coupler is not installed at one site, but the fiber configuration at the

site is provisioned as parallel (meaning the C&L splitter/coupler is present), and a fiber between two OMXs is broken at that site, then an incorrect fiber span identification might result.

Correct operation of the IFS feature requires that all sites conform to the supported site topologies, and that site equipping rules are followed. Furthermore, IFS relies on correct provisioning of feature-related data, such as optical system identifier (OSID), OFA and APBE location and direction, site fiber topology, and site fiber configuration. Refer to the “[Fault sectionalization](#)” chapter in *Software and User Interface*, 323-1701-101, for more information.

In order to operate correctly, IFS requires specific knowledge about the network deployment, including site fiber topology and configuration. IFS also relies on specific assumptions about the network, which are explained in the “[Fault sectionalization](#)” chapter in *Software and User Interface*, 323-1701-101. If any of the requirements or assumptions of the feature are violated, IFS can behave unexpectedly. Whenever possible, IFS detects these violations and raises one of the administrative or provisioning alarms. In some cases, however IFS does not detect a problem, and so extreme care should be taken in provisioning IFS-related data.

### **ATTENTION**

It is important that the site topology be verified by successfully completing [Procedure 1-3 “Testing the optical continuity through the OMXs at a site”](#) in *Testing and Equalization Procedures*, 323-1701-222, before you enable the IFS feature in the ring.

### **Principal alarms raised by IFS**

The following alarms are the key alarms raised by IFS to identify failed intrasite WDM fibers, to mask alarms, and to ensure the correct operation of the feature.

Even though the feature may be provisioned correctly, it is possible that faults in the system are actually interfering with the correct operation of IFS. As a result, there is an alarm clearing precedence when attempting to clear IFS alarms. After one alarm is cleared it is possible that the other alarms may change to more accurately isolate the root cause, or even clear completely because the alarm resulted from a higher precedent condition.

### **Alarm clearing precedence**

In general, fault sectionalization alarms should be cleared in the order listed below.

- 1 All administrative and provisioning alarms
- 2 Facility Out of Service - Optical Signal Failure alarms

- 3 Site Input Failure alarms
- 4 Shelf Input Failure alarms
- 5 Optical Signal Failure Tx and Rx alarms
- 6 Band Alarm Indication Signal alarms

The IFS feature responds to faults in the westbound direction independently from faults in the eastbound direction, and so the precedence order should be applied to each direction. The only exception to the precedence rule, is when there are Band Input Failure alarms active in the system at the same time that a failed fiber span is identified. This could be indicative of a multiple fiber break scenario or a provisioning problem. Care should be taken in this case and the situation carefully analyzed using all active alarm data before any action is taken. If necessary, contact your next level of support for help.

### **Administrative alarms**

The following alarms are raised when the IFS feature determines that there is a persistent problem in the ring that may affect the correct operation of the feature and the reporting of results.

- SP-Intrasite Communication Failure
- OSC-Intrasite Communication Failure
- OSC-Remote Fault Sectionalization Not Responding
- OSC-Fault Sectionalization Unresolved

Administrative alarms should be cleared before clearing operational alarms. Operational alarms may clear, or change, as a result of clearing the administrative alarms.

#### **OSC-Remote Fault Sectionalization Not Responding**

This alarm is raised when the OSC circuit pack is not receiving fault sectionalization information from an OSC at an adjacent site. The cause of the problem is that the IFS feature is disabled at the remote site, or there is a loss of connectivity between this OSC and the adjacent OSC.

### **Provisioning alarms**

The following alarms are raised by the IFS feature to indicate that there is a problem with provisioning pertinent to the correct operation of the features. Care should be taken when provisioning the IFS feature.

#### **Invalid Provisioning**

This alarm is raised against OSC equipment.

#### **Incomplete Provisioning**

This alarm is raised against OFA, APBE, OTR, Muxponder, OCLD, and OSC equipment.

### **Operational alarms**

The following alarms are raised to indicate that a failed intrasite fiber (or intersite fiber in the case of Site Input Failure alarm) has been identified as the cause of the pattern of failures active in the WDM ring.

#### **Optical Signal Failure Tx (or Rx)**

This alarm is raised against an OSC tray, C&L Splitter/Coupler, OMX, OFA, and APBE facilities.

#### **Band Alarm Indication Signal**

This alarm is raised against OMX, OFA, or an APBE Rx facility.

#### **OSC-Site Input Failure**

This alarm is raised against OSC East or West facility.

#### **Facility Out of Service - Optical Signal Failure**

This alarm is raised against OFA and APBE Tx facilities when IFS has determined that an out-of-service (OOS) facility is the cause of the pattern of failures in the ring. Some equipment, such as OFAs and APBEs, cannot be taken out-of-service without affecting other equipment in the ring. This alarm identifies these problems.

*Note:* Any Optical Signal Failure alarms that are reported while there are uncleared administrative alarms, may not accurately identify a failed span.

## Troubleshooting System Level Equalization Control

This section describes operational aspects of the System Level Equalization Control (SLEC) feature. Use this section to understand how the feature behaves while equalizing a system, as well as for troubleshooting issues encountered during equalization.

### Overview

The SLEC feature has two modes of operation: One-time Equalization and Continuous Equalization. SLEC automatically equalizes all gain controllable devices in a system to their provisioned output targets based on the number of channels present at the input of the component. One-time Equalization is used to perform this operation once. Some scenarios, such as the addition of channels to a new band in the system, require the use of One-time Equalization. Continuous Equalization is a feature of SLEC that automatically monitors a given system to ensure that all gain controllable devices are transmitting at their provisioned output targets. Continuous Equalization can be enabled in a network where all channels are already deployed or when adding new channels to existing bands.

In either equalization mode, the SLEC software constantly monitors all line equipment at sites in the system. Any fault or change in topological data that occurs during equalization can cause the equalization process, controlled by SLEC, to fail or halt until conditions stabilize or until the faults clear. Whenever this occurs it is visible through the equalization statuses displayed in the SLEC application window, or through the events that are issued. In One-time Equalization, the SLEC application window displays the current statuses, and the events issued are less important. In Continuous Equalization, the SLEC application window monitors the system and alerts you to a problem in the system by issuing "Equalization Failed" events.

The SLEC application is also the main source of information for troubleshooting issues during SLEC. The SLEC application itself does not raise any alarms related to its activities. However, the occurrence of line-side alarms in the network are the criteria SLEC uses to decide whether it can proceed. [Table 2-1](#) lists the alarms applicable to the SLEC application.

**Table 2-1**  
**Alarms applicable to SLEC**

|                            | OCLD | OTR<br>(Line) | MOTR<br>(Line) | OFA | APBE | OSC |
|----------------------------|------|---------------|----------------|-----|------|-----|
| Circuit Pack Failed        | √    | √             | √              | √   | √    | √   |
| Circuit Pack Mismatch      | √    | √             | √              | √   | √    | √   |
| Fiber Mismatch             | √    | √             | √              |     |      | √   |
| High Optical Power Warning | √    | √             | √              |     |      |     |

2-8 Troubleshooting fault sectionalization and System Level Equalization Control

**Table 2-1 (continued)**  
**Alarms applicable to SLEC**

|                                      | OCLD | OTR<br>(Line) | MOTR<br>(Line) | OFA | APBE | OSC |
|--------------------------------------|------|---------------|----------------|-----|------|-----|
| Incomplete Provisioning              | √    | √             | √              | √   | √    | √   |
| Inter-card Communication Failure     | √    | √             | √              | √   | √    | √   |
| Invalid Provisioning                 | √    | √             | √              | √   | √    | √   |
| Invalid Signal                       | √    | √             | √              |     |      | √   |
| Loss of Lock                         | √    | √             | √              |     |      | √   |
| Loss of Signal                       | √    | √             | √              | √   | √    | √   |
| Optical Receiver Overload            | √    | √             | √              |     |      |     |
| Optical System Identifier Mismatch   | √    | √             | √              |     |      | √   |
| Remote Automatic Laser Shutdown      | √    | √             | √              |     |      |     |
| Unassigned Optical System Identifier | √    | √             | √              | √   | √    |     |

The SLEC application uses events to provide summary status for the System and Sites within the system during equalization. System-level events are issued by the Primary shelf for the network. Site-level events are issued by the shelf at the site containing the OSC circuit pack for the system OSID. During Continuous Equalization, events are only issued from the site level, and only when one or more components at the site fails to equalize, or is blocked from equalizing because an upstream component failed to equalize. [Table 2-2](#) lists the SLEC events that are issued.

**Table 2-2**  
**SLEC events**

| Event Text                              | Meaning   | Example                                |
|---|---|--|
| System Equalization Started: "<OSID>"   | One-time Equalization has been started for system <OSID>.                               | System Equalization Started: "RING1"   |
| System Equalization Completed: "<OSID>" | One-time Equalization has successfully completed for system <OSID>.                     | System Equalization Completed: "RING1" |
| System Equalization Failed: "<OSID>"    | One-time Equalization has completed for system <OSID> and at least one site has failed. | System Equalization Failed: "RING1"    |

**Table 2-2 (continued)**  
**SLEC events**

| Event Text   | Meaning   | Example   |
|--|---|---|
| System Equalization Aborted: "<OSID>"                            | Equalization has been stopped for system <OSID> by pressing the Stop Equalization button in the SLEC application window.  | System Equalization Aborted: "RING1"                        |
| Continuous Equalization Started: "<OSID>"                        | Continuous Equalization has been started for system <OSID>.   | Continuous Equalization Started: "RING1"                    |
| Equalization Completed: Site <n>, "<OSID>", <direction>          | Phase 2 of One-time Equalization in <direction> has successfully completed at Site <n> of system <OSID>.  | Equalization Completed: Site 2, "RING1", Eastbound          |
| Equalization Completed: Site <n>, "<OSID>", <direction>, Phase 1 | Phase 1 of One-time Equalization in <direction> has successfully completed at Site <n> of system <OSID>.  | Equalization Completed: Site 2, "RING1", Eastbound, Phase 1 |
| Equalization Failed: Site <n>, "<OSID>", <direction>             | Phase 2 of One-time Equalization or Continuous Equalization has completed in <direction> at Site <n> of system <OSID> and at least one component at the site failed to equalize or was blocked from equalizing. | Equalization Failed: Site 2, "RING1", Westbound             |
| Equalization Failed: Site <n>, "<OSID>", <direction>, Phase 1    | Phase 1 of One-time Equalization has completed in <direction> at Site <n> of system <OSID> and at least one component at the site failed to equalize or was blocked from equalizing.                            | Equalization Failed: Site 2, "RING1", Westbound, Phase 1    |
| Equalization Canceled: Site <n>, "<OSID>", <direction>           | Equalization for Site <n> in <direction> of system <OSID> was aborted by the SLEC software as a result of a problem detected at another site that renders equalization for <direction> at this time impossible. | Equalization Canceled: Site 2, "RING1", Eastbound           |

### Topology Considerations

The key to the SLEC application's successful equalization of a system is a stable and accurate model of the channel topology over the entire system, and specifically at the input of all gain-controllable devices. To make this knowledge available, all assumptions regarding equipment presence in the system and the provisioning of that equipment (OSID, location, and direction) must be validated against alarms present in the system, and what is automatically discovered. Central to achieving this is the application's ability to monitor equipment, configuration and alarms within a single site and across all sites in the system. This is enabled by the restrictions put in place by the deployment rules and the provisioning requirements.

Given SLEC's dependence on topological knowledge, there are several conditions to consider.

### **Topology stability requirements**

To achieve an accurate view of the equipment present in a system and the number of channels present at the input of gain-controllable devices, the attributes monitored by SLEC must be stable for at least 10 seconds. If the state of the system is changing due to outside influences (such as the occurrence of faults, removal or addition of equipment, provisioning changes), SLEC will not attempt to equalize a system. All sites in a system must see that topology has been stable for at least 10 seconds. In some configurations, due to the distributed nature of sites within a system, the topology stability requirement can be extended to between 15 and 20 seconds to allow for information propagation to all sites in the system.

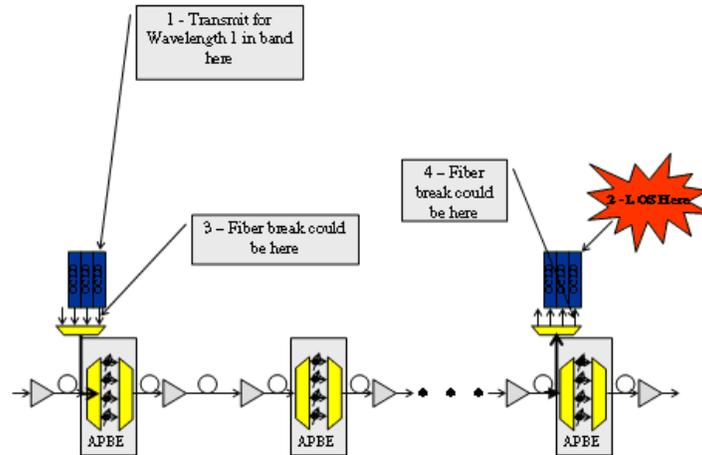
Events that cause topology to change include

- the addition or removal of a line side circuit pack at any site in the system
- a change in OSID, location, or direction provisioning data at any site in the system
- the restart of any shelf at a site in the system.
- a change in state of any of the alarms shown in [Table 2-1](#).

### **Accurate channel count deduction in the presence of faults**

Line-side receiver faults on OCLD, OTR, and MOTR circuit packs make it difficult for the SLEC application to accurately count the number of channels at the input of an APBE or OFA VGA. An accurate channel count is required to ensure correct and seamless equalization of APBE and OFA VGA devices to their provisioned output power targets. Inaccurate channel count deduction in the presence of faults, such as Loss of Signal, is due to lack of power monitoring points, or power taps, in Optical Metro 5100/5200 line-side equipment. In Optical Metro 5100/5200 line-side components, power levels can only be inspected at APBE and OFA facilities, or at the line-side OCLD, OTR, or MOTR receiver facility. Unfortunately, APBE facilities only report per band power levels and OFA facilities only report C-band or L-band power levels. Therefore, when SLEC cannot guarantee the correct wavelength count at the input of an APBE or OFA VGA, it does not attempt to equalize the component.

**Figure 2-1**  
**Potential problem locations during faults**



For example, consider the configuration in [Figure 2-1](#) where a system exhibits an LOS alarm on an OCLD. Counting wavelengths on a system with this type of alarm is difficult since the cause of the LOS alarm on the OCLD can be at one of two locations (location 3 or location 2). In addition, the alarm can also be a failure on the transmitting card or the receiving card that has not been detected by S/W. If the failure is at location 3, the wavelength is not passing through the system; however, if the failure occurs at location 2, the wavelength is traversing the system. Since the per-wavelength power measured at the power taps on the various components relies on the component seeing an accurate wavelength count, it is impossible to balance the system based on the alarm information alone since the system cannot determine whether the wavelength is passing through the components. For this reason, it is important that the system refuses system level equalization. You must correct the cause of the LOS alarm before system-level equalization is possible.

The only time SLEC can guarantee the presence of a channel, is when there is only one channel in the band. When there is only one channel in the band, and the corresponding band facility at the first APBE (which is required by SLEC to be the first gain-controllable device after an OMX) does not have LOS, then SLEC can safely conclude that the power present at the facility is that of the single channel transmitter. If the network does not have a terminal site, the single channel power at the APBE facility could be ASE, but SLEC can ignore this possibility and attempt to equalize the channel. This assumption is safe, and is required to permit addition of the first channel in a new band using

SLEC. When adding channels to existing bands, this same assumption cannot be made and this is why, when using SLEC, the first channel added to a new band must be equalized before other channels in the same band can be added.

### **Gain-controllable device dependencies**

A primary objective of the SLEC application is to equalize all spans that can be equalized, and to skip spans that are blocked (due to faults or other errors) and isolated from the spans not experiencing problems. To accomplish this, the SLEC application considers dependencies between gain-controllable devices based on channel topology in the system.

When an APBE or OFA VGA device is unable to equalize because of a fault or some other error, the SLEC application marks this component as Failed, and displays a detailed explanation why the component failed (e.g., “Blocked by downstream fault conditions”). Additionally, the failure of this component causes downstream components at this and other sites not to attempt equalization. This is necessary to ensure that components that are dependent on upstream components correctly equalizing will not make any adjustments until those upstream components have successfully equalized.

One component is dependent on another if one or more wavelengths originating from transmitters upstream pass through each component. Essentially, one component is dependent on another if all channels passing through the first component are not fully regenerated before passing through the second component.

To illustrate the link dependencies during equalization of components in a system consider the following configuration.

**Figure 2-2**  
**Overlapping bands with faults**

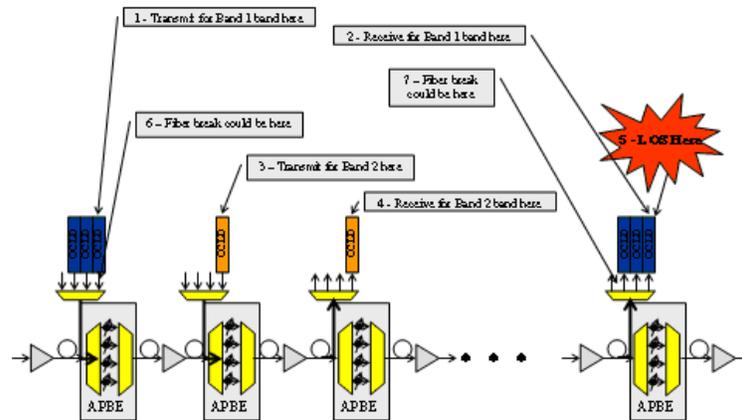
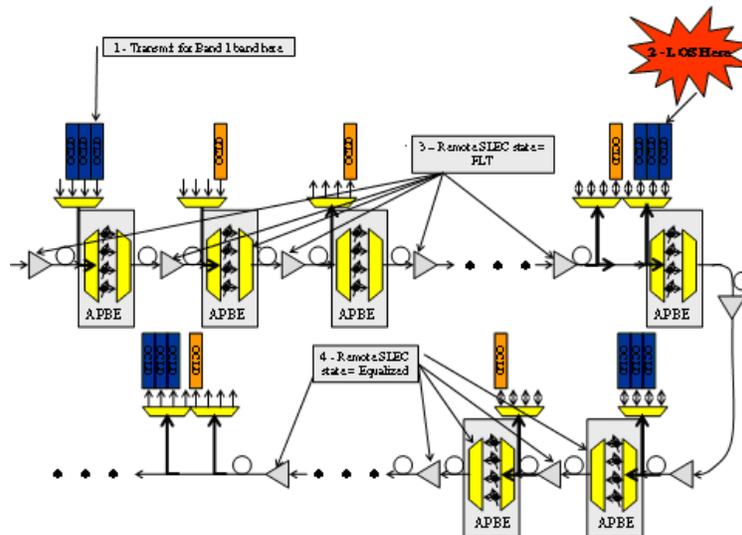


Figure 2-2 shows a meshed system with overlapping bands, with band 1 starting at location 1, and band 2 starting at location 3. In the event that location 5 detects a fault on band 1, band 2 (or any other bands overlapping) cannot be equalized because the amplifiers common to band 2 and band 5 cannot equalize. Suppose that you perform equalization at location 3 after adding a wavelength to band 2. It is impossible for the amplifiers between locations 3 and 5 to equalize because there is a risk that the channel count is incorrect. Since adding wavelengths to the system affects the aggregate amplifier power, wavelength dependant loss, SRS tilt, etc. on other channels, it is not safe to equalize the power at location 3 when it is impossible for downstream equalization of the amplifiers. In this case, you must fix the fault causing the LOS alarm to ensure that the system can safely equalize.

Figure 2-3 shows the affect of faults in larger networks and illustrates how faults in one optical span are isolated from another.

**Figure 2-3**  
**The affect of faults when equalizing in larger networks**



The fault detected on band 1 at location 2 prevents all upstream components from equalizing. This means that they cannot equalize some or all of their components because of the fault on band 1. As a result, nothing upstream can equalize unless a point in the network is reached in which equalization does not affect the faulted bands. Points in the network that separate affected bands are:

- Regeneration of all bands
- Points where no bands pass through (all of band 2 terminated, but not regenerated at a site, same for band 1. This leaves a fiber between sites with no traffic on it)

Label 4 on the diagram shows that all components after the termination and regeneration of the bands on the system (assuming only bands 1 and 2 exist) are safe to equalize. Regeneration of both bands occurs at location 2.

### SLEC Event Reporting

The SLEC application does not use alarms to indicate progress during the equalization process. However, SLEC does issue events through the usual event reporting mechanisms, including the SMI event console, the NE event history, and TL-1 autonomous reporting. SLEC events provide a history of equalization and can also be used to trigger troubleshooting or to determine that the system is properly equalized.

The SLEC application issues events for the system and site levels, but not at the component level. Component-level details are only available in the Site Details window of the SLEC application. In this location, detailed status

reasons are available and most debugging must take place from this application. System-level SLEC events are issued by the Primary shelf for the network. [Table 2-3](#) lists the include system-level SLEC events.

**Table 2-3**  
**System-level SLEC events**

| Event Text                                   | Meaning  | Example                                  |
|--|--|--|
| System Equalization Started:<br>"<OSID>"     | One-time Equalization has been started for system <OSID>.  | System Equalization Started:<br>"RING1"  |
| System Equalization Completed:<br>"<OSID>"   | One-time Equalization has successfully completed for system <OSID>.  | System Equalization Completed: "RING1"   |
| System Equalization Failed:<br>"<OSID>"      | One-time Equalization has completed for system <OSID> and at least one site has failed.                                  | System Equalization Failed:<br>"RING1"   |
| System Equalization Aborted:<br>"<OSID>"     | Equalization has been stopped for system <OSID> by pressing the Stop Equalization button in the SLEC application window. | System Equalization Aborted:<br>"RING1"  |
| Continuous Equalization Started:<br>"<OSID>" | Continuous Equalization has been started for system <OSID>.  | Continuous Equalization Started: "RING1" |

The site-level SLEC events are issued by the shelf at the site containing the OSC circuit pack for the system OSID. [Table 2-4](#) lists the site-level SLEC events.

**Table 2-4**  
**Site-level SLEC events**

| Event Text   | Meaning  | Example  |
|--|--|--|
| Equalization Completed:<br>Site <n>, "<OSID>",<br><direction>          | Phase 2 of One-time Equalization in <direction> has successfully completed at Site <n> of system <OSID>. | Equalization Completed: Site 2,<br>"RING1", Eastbound          |
| Equalization Completed:<br>Site <n>, "<OSID>",<br><direction>, Phase 1 | Phase 1 of One-time Equalization in <direction> has successfully completed at Site <n> of system <OSID>. | Equalization Completed: Site 2,<br>"RING1", Eastbound, Phase 1 |

**Table 2-4**  
**Site-level SLEC events**

| Event Text  | Meaning   | Example  |
|---|---|--|
| Equalization Failed: Site <n>, "<OSID>", <direction>          | Phase 2 of One-time Equalization or Continuous Equalization has completed in <direction> at Site <n> of system <OSID> and at least one component at the site failed to equalize or was blocked from equalizing. | Equalization Failed: Site 2, "RING1", Westbound          |
| Equalization Failed: Site <n>, "<OSID>", <direction>, Phase 1 | Phase 1 of One-time Equalization has completed in <direction> at Site <n> of system <OSID> and at least one component at the site failed to equalize or was blocked from equalizing.                            | Equalization Failed: Site 2, "RING1", Westbound, Phase 1 |
| Equalization Canceled: Site <n>, "<OSID>", <direction>        | Equalization for Site <n> in <direction> of system <OSID> was aborted by the SLEC software as a result of a problem detected at another site that renders equalization for <direction> at this time impossible. | Equalization Canceled: Site 2, "RING1", Eastbound        |

Event reporting by the SLEC application differs depending on the equalization mode used. In One-time Equalization, equalization of the system occurs once. In this case, all events are reported. In this mode, the user is most often monitoring progress directly in the SLEC application window, and the events simply record the history of the equalization attempt. In contrast, when Continuous Equalization is used, only site Equalization Failed events are issued. There is an event to indicate when Continuous SLEC is started, but because Continuous executes until it is stopped by the user, no System level events are issued during equalization. As Continuous SLEC is most often used for monitoring a stable system, successful equalization events are not issued.

## SLEC Status Descriptions and Troubleshooting Information

As the SLEC feature equalizes all OFA and APBE devices in a system or OSID, the SLEC application window lets you monitor its progress. SLEC displays the progress at each level, specifically, through the System Status, the Site Status (for components in each direction), and the individual Component Status for each gain-controllable device in the system. The SLEC statuses also provide detailed information that aid in troubleshooting when failures occur.

For detailed descriptions of SLEC statuses and, where applicable, guidelines for resolving failures, see the following sections:

- [SLEC System Status on page 2-17](#)
- [SLEC Site Status on page 2-23](#)
- [SLEC Component Status on page 2-31](#)

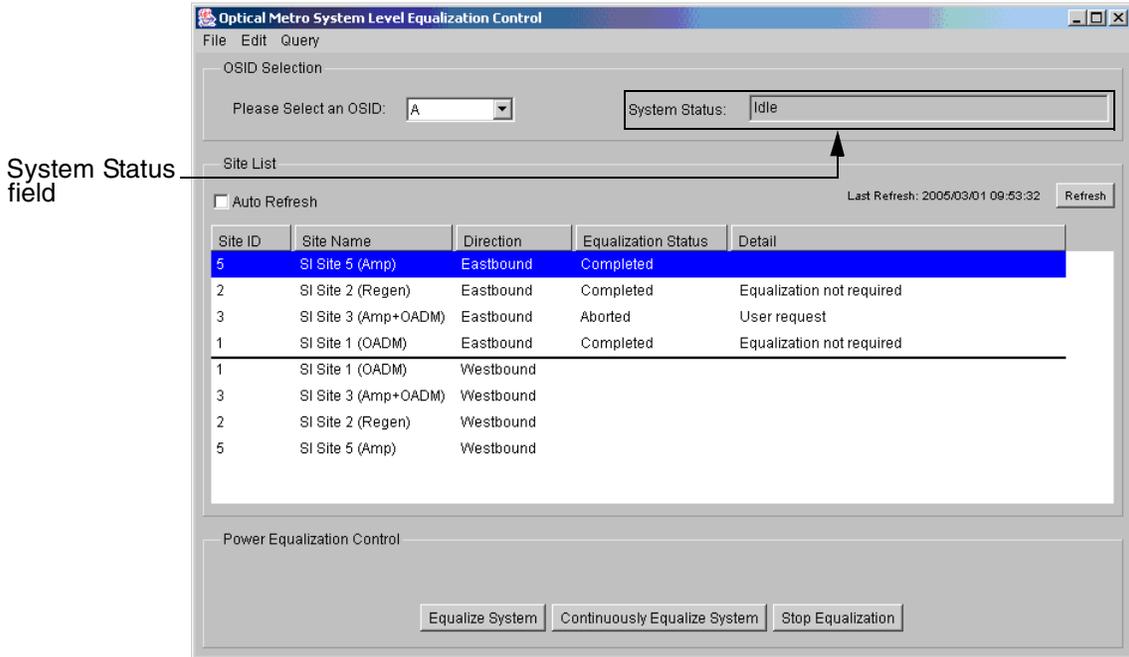
General considerations:

- For many statuses the SLEC application only stays in this state for a very short period before transitioning into the next state. As a result, screen refreshing does not always show SLEC in every state detailed below.
- Auto refresh refreshes the main SLEC application window every 5 seconds. Between refreshes the state may have passed through several states.

### SLEC System Status

The System Status field of the SLEC application window (see [Figure 2-4 on page 2-18](#)) displays the current status of the system.

**Figure 2-4**  
**System Level Equalization Control screen**



The following describes each status that can appear in the system status window. For many statuses, the SLEC application only stays in this state for a short period before transitioning into the next phase. As a result, screen refreshing does not always show SLEC in every state detailed below.

**Idle**

The idle status indicates that SLEC is not currently active in the selected system. Either SLEC has never been executed, One-time Equalization has completed, or Continuous Equalization has been stopped.

**Checking**

The checking status indicates that SLEC is in the System-level validation phase, which occurs at the start of each round of equalization. In One-time Equalization, this occurs after equalization is initiated and before the eastbound direction begins. In Continuous Equalization, SLEC goes through this validation phase every time before starting the eastbound direction.

In the system-level validation phase SLEC verifies that:

- all sites in the system are operational with communication paths available.
- all sites in the system are capable of participating in a round of equalization.

In this state, all site statuses are reset. The eastbound site statuses will be Checking while they verify their state, or Ready when they complete the check. The westbound site statuses will be blank as they only verify their readiness when the westbound direction is started.

If any validation fails during the Checking state, the Site Status changes to Failed at sites that have problems. Refer to the failed site status descriptions below to troubleshoot the problems at each site with a failed equalization status.

The next System Status depends on the outcome of the previous validation steps and the equalization mode. When validation fails, the next status displayed depends on how the validation failed and when the screen was refreshed. (Table 2-5 lists the System Status displayed depending on equalization mode and success of validation.) In most cases, SLEC attempts to verify whether it is safe to equalize in the westbound direction. However, if the failure is critical, the round of equalization will stop (One-time), or start over (Continuous).

**Table 2-5  
System Status messages based on equalization mode and validation**

|                         | <b>Validation Passed</b>            | <b>Validation Failed</b>   |
|-------------------------|-------------------------------------|--|
| One-time Equalization   | Equalizing in Eastbound direction   | One of the following: <ul style="list-style-type: none"> <li>• Equalizing in Westbound direction</li> <li>• Idle</li> </ul>  |
| Continuous Equalization | Continuous Equalization In Progress | One of the following: <ul style="list-style-type: none"> <li>• Equalization finished in Eastbound direction - Failed</li> <li>• Equalization finished in Westbound direction - Failed</li> <li>• Continuous Equalization round finished - Failed</li> <li>• Continuous Equalization In Progress</li> </ul> |

**Equalizing in Eastbound direction  
Equalizing in Westbound direction**

These statuses indicate that One-time equalization has been triggered and it is currently active in the stated direction. When this System Status is displayed, one site in the corresponding direction should have an equalization status of In Progress.

In One-time Equalization mode, each direction is equalized twice. The order of equalization is

- 1 Eastbound equalization phase 1

- 2 Eastbound equalization phase 2
- 3 Westbound equalization phase 1
- 4 Westbound equalization phase 2.

Prior to the phase 1 equalization in each direction, a site-level validation phase occurs. In this validation phase, each site status is Checking while the validation occurs at the site, and Ready when the validation is complete. Only the site that is currently equalizing displays the In Progress status. Other sites may display Completed or Failed if SLEC has already attempted to equalize components at that site. In phase 2 of the direction, the status resulting from phase 1 is not reset. As a result, the movement of the In Progress status among the sites indicates the progress.

Since one complete round of equalization consists of the following 7 phases, when the System status is Equalizing in Eastbound direction, the status of sites in the westbound direction are blank.

- 1 System-level validation phase
- 2 Eastbound site-level validation phase
- 3 Eastbound equalization phase 1
- 4 Eastbound equalization phase 2
- 5 Westbound site-level validation phase
- 6 Westbound equalization phase 1
- 7 Westbound equalization phase 2

During the site-level validation phase for each direction, SLEC verifies the following for each site containing gain controllable components

- All APBE circuit packs for the direction are provisioned to be in channel mode. The check is only done on band facilities detected to have channels present at the input of the component.
- All OFA circuit packs for the direction that are not OFA VGA, are preceded by an APBE circuit pack.
- All APBE circuit packs for the direction are followed by an OFA circuit pack.

**Continuous Equalization In Progress**

This status indicates that Continuous Equalization is active in the selected system. In this mode, this status is displayed while equalizing in both the eastbound and westbound directions. The location of the one site with an In Progress equalization status indicates how much of the current round of equalization is complete and which site is currently equalizing.

In Continuous Equalization mode, one complete round of equalization consists of the following five phases.

- 1 System-level validation phase
- 2 Eastbound site-level validation phase
- 3 Eastbound equalization phase
- 4 Westbound site-level validation phase
- 5 Westbound equalization phase

When the eastbound direction components are being equalized the westbound direction sites and components display an empty status.

During the site-level validation phases, each site in the direction displays a Checking status while the validation is occurring and a Ready status when the validation is complete. If the eastbound site-level validation phase fails, all sites in the eastbound direction that failed the validation indicate their status and a detailed reason for the failure (refer to the status descriptions in [“SLEC Site Status” on page 2-23](#) and [“SLEC Component Status” on page 2-31](#) for more information). If the eastbound direction validation phase fails, the westbound direction site-level validation phase begins after a 5 second delay. During this delay, the System Status will be Equalization finished in Eastbound direction - Failed. If the westbound site-level validation fails, all sites in the westbound direction that failed the validation indicate their status and a detailed reason for the failure (refer to the status descriptions in [“SLEC Site Status” on page 2-23](#) and [“SLEC Component Status” on page 2-31](#) for more information) and the round of equalization is complete. For 30 seconds after the Westbound completes, the System Status will be Continuous Equalization round finished - Failed. An intermediate status of Equalization in Westbound direction - Failed exists but the system quickly transitions into the final status. After the 30 second delay, a new round of Continuous Equalization begins.

During the site-level validation phase for each direction, SLEC verifies the following for each site containing gain controllable components

- All APBE circuit packs for the direction are provisioned to be in channel mode. The check is only done on band facilities detected to have channels present at the input of the component.
- All OFA circuit packs for the direction that are not OFA VGA, are preceded by an APBE circuit pack.
- All APBE circuit packs for the direction are followed by an OFA circuit pack.

**Equalization finished in Eastbound direction - Successful**  
**Equalization finished in Westbound direction - Successful**

This status indicates that SLEC has successfully completed in the corresponding direction, and all equalizable components for the direction at all sites have been equalized to the provisioned target values and are now in constant gain mode. In One-time mode, this System Status only occurs after the completion of phase 2 for the given direction. If the status is for the eastbound direction, there will be a 5 second delay before the westbound site-level validation phase begins. In Continuous mode, if the status is for the westbound direction, the System Status will immediately transition to Continuous Equalization round finished - Successful or Continuous Equalization round finished - Failed, depending on whether or not any site in either direction has a Failed status. In One-time mode, if the status is for the westbound direction, the System Status will immediately transition to Idle as this round of equalization has completed successfully.

In One-time Equalization, the "System Equalization Completed: <OSID>" event is issued at the completion of equalization for the Westbound direction. In Continuous Equalization, events for the end of an equalization round are not issued.

**Equalization in Eastbound direction - Failed**  
**Equalization in Westbound direction - Failed**

This status indicates that SLEC has completed in the corresponding direction and at least one site with equalizable components in the direction failed to equalize one or more components to their provisioned target value. In One-time mode, this System Status only occurs after the completion of phase 2 for the given direction. If the status is for the eastbound direction, there will be a 5-second delay before the westbound site-level validation phase begins. In Continuous mode, if the status is for the westbound direction, the System Status will immediately transition to Continuous Equalization round Finished - Failed. In One-time mode, if the status is for the westbound direction, the System Status immediately transitions to Idle as this round of equalization has completed unsuccessfully.

In One-time Equalization, the "System Equalization Failed: <OSID>" event is issued at the completion of equalization for the Westbound direction. In Continuous Equalization, events for the end of an equalization round are not issued.

**Continuous Equalization round finished - Successful**  
**Continuous Equalization round finished - Failed**

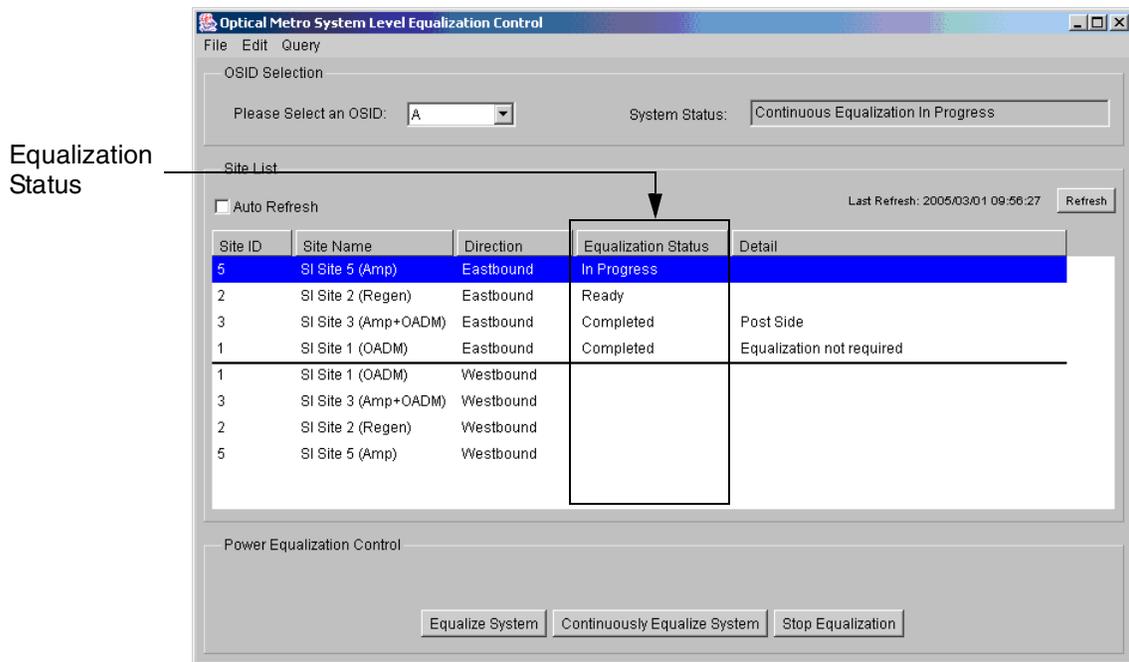
This status indicates that Continuous Equalization mode has completed activities at all sites in the eastbound and westbound directions. If one or more sites in the either direction displays a Failed equalization status, the System Status is Continuous Equalization round finished - Failed. Otherwise, the System Status is Continuous Equalization round finished - Successful. In

Continuous Equalization mode, System status events are not issued. This System Status is displayed for 30 seconds at the end of a round of equalization. Afterward, the eastbound site-level validation phase begins again.

### SLEC Site Status

In the SLEC application window, Site Status is displayed in the Equalization Status column (see [Figure 2-5](#)).

**Figure 2-5**  
System Level Equalization Control screen



Each site in the selected OSID, or system, is listed in both the Eastbound and Westbound directions as SLEC handles components in each direction independently. As equalization progresses through the system, the Equalization Status column is updated (manually or automatically) and indicates the site that is currently equalizing, the sites that have not yet been equalized, and the sites that have been equalized along with their final status. The Detail column associated with each site provides detailed information that elaborates on the current equalization status for the site.

### Considerations

- Site equalization status reporting is dependent on system and site configuration. In other words, the specific status displayed can be topology dependent. For example,

- At the site chosen as the first site for the direction (first OADM or Terminal site in the site list for the selected OSID), the pre and post side components are equalized in different visits. On the first visit to the site SLEC only addresses the Post components and the equalization status and details will indicate this. After addressing all other sites in the direction, the start site is visited a second time to address the Pre components.
- If there are no equalizable components located at the site for the direction, the site equalization status becomes Completed, Equalization not required when the site is visited.
- In One-time Equalization, each direction is equalized twice by SLEC to handle systems where the start site is dependent on components at sites that will be equalized last (such as in highly meshed systems). When a site is equalizing, the site equalization status and details describe which of the 2 phases the site is in.
- When a component at a site fails to equalize, the site equalization status does not indicate which component failed. To determine which component caused the site to fail, open the Site Details window by double-clicking on the Site row.

The status messages that can appear in the Equalization Status column follow.

**Note:** Some equalization status messages contain details in the format: <status> [- <details>], where <details> are optional.

**Blank**

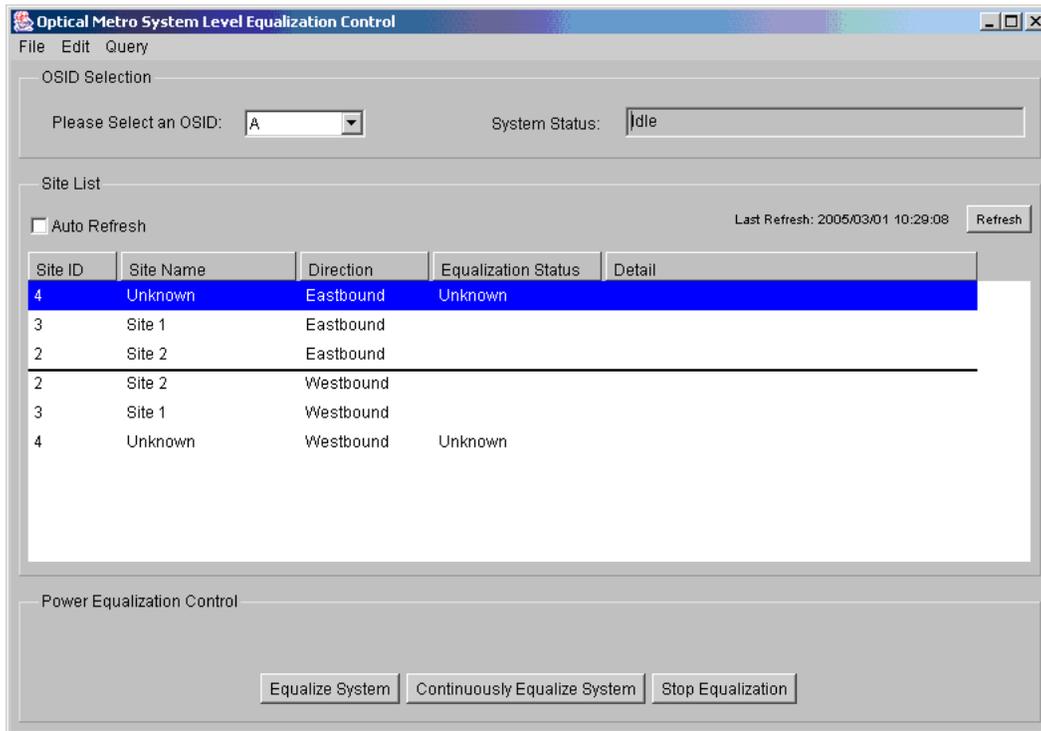
A blank status in the equalization status column indicates one of the following

- The shelf containing the OSC circuit pack for the selected OSID at the given site has recently been restarted and SLEC has not active or has not equalized at this site.
- SLEC is currently equalizing in the Eastbound direction in either One-time or Continuous mode and the Westbound status is blank. Only the westbound status will display as blank. This occurs because during the system-level equalization phase, where the readiness of all sites in the system is evaluated, all statuses are cleared in preparation for a new round of equalization.

**Unknown**

An equalization status of Unknown (see [Figure 2-6 on page 2-25](#)) indicates that the SLEC application was unable to retrieve the SLEC status for the specified siteId. This status may be caused by a communication problem with the shelf at this site containing an OSC circuit pack for the selected OSID or a shelf failure. When the SLEC application is unable to retrieve the status for a site in the system, the Site Name is also be displayed as Unknown and the entry is the same for both directions.

**Figure 2-6**  
**Equalization status of Unknown**



### Checking

A site equalization status of Checking indicates that the site-level validation phase is in progress at the site. This validation occurs at the beginning of equalization in a direction. During the site-level validation phase for each direction, SLEC verifies the following for each site containing gain controllable components

- All APBE circuit packs for the direction are provisioned to be in channel mode. The check is only done on band facilities detected to have channels present at the input of the component.
- All OFA circuit packs for the direction that are not OFA VGA, are preceded by an APBE circuit pack.
- All APBE circuit packs for the direction are followed by an OFA circuit pack.

If the validation succeeds, the site status becomes Ready. If it fails, the status becomes Failed and the details describes the reason for the failure. Also if the validation fails for at least one site, equalization will not be attempted for this direction.

**Ready**

This status indicates that the site-level validation phase for the direction has been successful and this site is ready to be equalized. In this state, the site is waiting for its turn to be equalized.

**In Progress**

**In Progress - First Phase In Progress**

**In Progress - Second Phase In Progress**

An equalization status of In Progress indicates the site where SLEC is currently equalizing. In Continuous mode there are no details. In One-time mode, the detail column identifies whether SLEC is in the first or second phase for the direction. To monitor progress within the site, double-click on the site row to open the Site Details window.

**First Phase Completed**

**Failed - First Phase**

These equalization statuses indicate that SLEC is active in One-time mode and the site has been equalized in phase 1 of the two required phases. If the status is First Phase Completed, there are no details provided because all components at the site in the current direction were successfully equalized. If the status is Failed, the details column indicates that this failure occurred in the First Phase. In the second phase, equalization will be attempted again and it may succeed this time overriding the result of the first phase. If the first phase fails, the "Equalization Failed: ... , Phase 1" event is issued. In One-time Equalization, if the first phase completed successfully, the "Equalization Completed: ..., Phase 1" event is issued.

If the site displaying this status is the start site for the direction, this status indicates that both the Post and Pre components have been addressed in Phase 1 and the result was either successful or failed. If at least one component failed to equalize, the status is Failed - First Phase.

At the start site, these statuses are not often visible in the SLEC application window as immediately after the Pre components are addressed Phase 2 begins and the status changes to In Progress - Second Phase In Progress.

**First Phase Completed - Post Side**

**Failed - First Phase Post Side**

These equalization statuses are intermediate statuses that only occur at the start site for the direction when One-time Equalization is active. The status indicates that the start site contains Post components for the current direction and they have been addressed. If the status is First Phase Completed, all post components at the site were successfully equalized in Phase 1. If the status is Failed, at least one post component failed to be equalized in Phase 1. The Pre components at the site will be addressed after all other sites have been equalized. Only after the Pre components have been equalized is Phase 1 fully complete (and the status will be First Phase Completed or Failed - First Phase).

Sites that are not the start site do not display these statuses. In linear systems, the start site for each direction is always one of the end-points of the linear chain, and as such, only contains Post equipment.

Events are not issued for sites displaying these statuses since events are only issue at the conclusion of phase 1.

**Completed - Post Side**

**Failed - Post Side**

These statuses indicate that either One-time Equalization is active and Phase 2 at the start site for the direction has addressed all components in the Post location or Continuous Equalization is active and all components in the Post location at the start site have been addressed. These statuses only occur at the start site and indicate that the first visit in Phase 2 or Continuous has occurred. If the status is Completed, all components on the Post side were successfully equalized. If the Status is Failed, at least one component failed to equalize. Phase 2 is not complete at this site until it is visited again to address the Pre components. If the status is now Failed, the status after the pre components are equalized will be Failed. Site Equalization events are not issued until Phase 2 is fully complete. In Continuous Equalization only site Equalization Failed events are issued.

Sites that are not the start site do not display these statuses. In linear systems, the start site for each direction is always one of the end-points of the linear chain, and as such, only contains Post equipment.

**First Phase Completed - Post Side Equalization Not Required**

This status indicates that One-time Equalization is active and Phase 1 at the start site for the direction has been addressed but there were no equalizable components in the Post location. This status only occurs at the start site. Phase 1 is not completed until the Pre components have been addressed and events will only be issued for Phase 1 after the Pre components are equalized.

Sites that are not the start site do not display this status. In linear systems, the start site for each direction is always one of the end-points of the linear chain, and as such, only contains Post equipment.

**Completed - Post Side Equalization Not Required**

This status indicates that either One-time Equalization is active and Phase 2 has discovered that there are no equalizable components in the Post location at the start site, or Continuous Equalization is active and there are no components at the start site in the Post location. In either case, the start site is not fully complete until the components in the Pre location are addressed. This occurs after all other sites in the system have been addressed. Once the Pre components are addressed a final status, dependent only on the results of equalizing the Pre components, will be determined and the direction has been

fully equalized. An event will be issued at the completion of the Pre components depending on the final status. In Continuous mode, events are only issued for site Equalization Failed events.

Sites that are not the start site do not display this status. In linear systems, the start site for each direction is always one of the end-points of the linear chain, and as such, only contains Post equipment.

**Completed**

**Completed - Equalization not required**

These statuses indicate that all components at the site in the current direction have been successfully equalized. In the case of the Equalization not required status, this site does not contain any equalizable components and the site has been marked as completed to indicate that it has been addressed. At the start site, this status only occurs after the Pre side components have been addressed in Phase 2 of One-time Equalization, or on the second visit to the site for the current direction in Continuous Equalization. At sites that are not the start site, both the Pre and Post components are addressed in a single visit to the site. In One-time Equalization, an "Equalization Completed" site event will be issued. In Continuous Equalization, events are only issued when a site is failed.

**Failed - Equalization Incomplete**

This status is the most common Site failure status. It indicates that all components at the site in the selected direction have been addressed and one or more of the components have failed to equalize or were blocked from equalizing by a failure of an upstream component to equalize. In One-time Equalization, this status means that a component failed to equalize in Phase 2 for the selected direction. At the start site, this status is only displayed after the components in the Pre location have been addressed and, in One-time Equalization, only after Phase 2 has completed. In either One-time or Continuous Equalization an "Equalization Failed" site event will be issued.

To examine the individual components that led to this site status, double-click on the site row to open the Site Details screen for the selected site.

**Failed - Invalid Equipment Configuration**

This Failed status is displayed for a site if the site-level validation phase for the direction was unsuccessful at this site. This occurs if the equipment deployment rules have been violated at this site. Specifically, this means that SLEC has detected one of the following equipping rules is true:

- An APBE circuit pack is not followed by an OFA circuit pack.
- A non-OFA VGA circuit pack is not preceded by an APBE circuit pack.

To see which components at the site are resulting in the Failed site status, double-click on the site row in the SLEC application window to open the Site Details. The components listed are those that SLEC believes to be present at this site in the current direction. From inspection it will be obvious if the

previously listed equipping rules for APBE and OFA placement are satisfied. If they are not, either the equipment is not present or the equipment OSID, location or direction parameters are misprovisioned. (Follow [Procedure 3-34 “Provisioning OFA direction and location”](#) and [Procedure 3-35 “Provisioning APBE direction, location, and associated equipment”](#) in *Provisioning and Operating Procedures*, 323-1701-310.) The equipment must be deployed before SLEC can be used.

When a site fails the validation phase for a direction, SLEC does not attempt to equalize any components in that direction. Any site where the site-level validation phase passed will then display the Canceled - System detected an error at another site status. In One-time mode, SLEC will start the westbound direction if the eastbound direction had the problem or it will terminate if it was the westbound direction with the problem. In Continuous mode, SLEC will start in the site-level validation phase of the other direction after encountering this problem. Note that there is a 5-second delay between the end of eastbound and the start of westbound and a 30 second delay in Continuous mode after the end of westbound and before the start of eastbound.

An "Equalization Failed" site event will be issued when this site status is displayed.

**Failed - Component configuration does not support SLEC**

This Failed status is displayed for a site if the site-level validation phase for the direction was unsuccessful at this site. During this check, SLEC validates the provisioning and state of the each component in the current direction. The validation can fail in one of the following ways to result in the Failed - Component configuration does not support SLEC site status.

- The component is an APBE and one or more of its facilities is provisioned to be in Band Mode rather than the required Channel Mode. Only facilities that are detected to have channels present at the input of this component are checked. In other words, if a facility is not in use then the provisioned mode is not important.
- A facility that is detected to have channels present at the input to the component has been deleted. For an APBE, all band facilities for which there are channels present at the input must have been created. For an OFA, if there are any channels present at the input the facility must exist.
- If SLEC is unable to query the state of the equipment or facility for some reason, the component cannot be equalized.

When the validation fails because it is provisioned to be in Band Mode, the status of the component displays as Failed - Component not provisioned properly for SLEC. When component validation fails because the facility or equipment state cannot be verified, a required facility is deleted or cannot be

placed IS, the status of the component displays as Failed - Invalid state for equalization. To see which component failed, double-click on the site row in the SLEC application window to open the Site Details window.

When a site fails the validation phase for a direction, SLEC does not attempt to equalize any components in that direction. Any site where the site-level validation phase passed will then display the Canceled - System detected an error at another site status. In One-time mode, SLEC will start the westbound direction if the eastbound direction had the problem or it will terminate if it was the westbound direction with the problem. In Continuous mode, SLEC will start in the site-level validation phase of the other direction after encountering this problem. Note that there is a 5-second delay between the end of eastbound and the start of westbound and a 30 second delay in Continuous mode after the end of westbound and before the start of eastbound.

Every component is also validated just before SLEC instructs it to equalize to the provisioned output power target. In this case the SLEC Site Status will be Failed - Equalization Incomplete. If the validation fails, the component is not equalized.

An "Equalization Failed" site event will be issued when this site status is displayed.

**Aborted - User Request**

This status indicates that a user has manually stopped equalization by pressing the Stop Equalization button in the SLEC application window. All sites that do not have a Completed or Failed equalization status display this status when equalization is stopped. In addition, all component statuses within the sites that do not have a Completed, Failed, or Blocked status also display the Aborted status. Sites and Components that have already equalized do not have their status changed in order to permit SLEC to be stopped without changing what had happened. Note that in Continuous Equalization, SLEC does not stop equalizing until the Stop Equalization button is pressed.

Whenever a user pressed the Stop Equalization button, the "System Equalization Aborted: <OSID>" event is issued.

**Canceled - System detected an error at another site**

This status occurs at a site that passed its site-level validation phase, and was in the Ready state, but some other site experienced one of the following issues.

- Some site did not respond to the SLEC control application's request to validate and prepare for equalization.
- Some site failed the site-level validation phase and now has the Failed - Invalid Equipment Configuration status.

- Some site failed the site-level validation phase and now has the Failed - Component configuration does not support SLEC status.

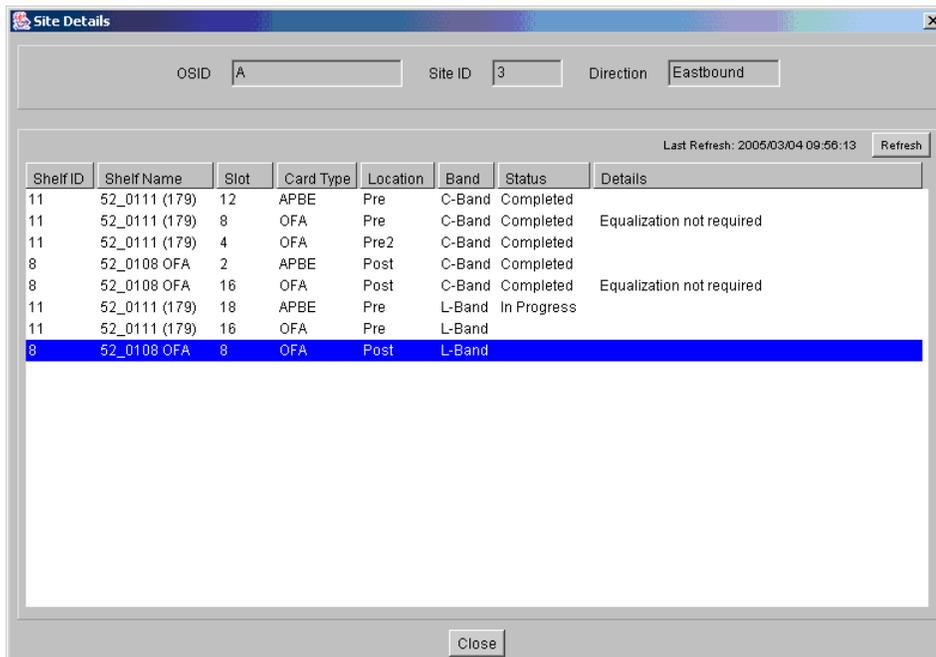
When this occurs, the SLEC application aborts the attempt to equalize sites in the current direction. All sites in the current direction that were in the Ready state then display the Canceled status and issue an "Equalization Canceled" event.

### SLEC Component Status

The SLEC component status is the lowest layer of status available in the SLEC application window. It is the status for each component that details exactly how the equalization process is progressing as well as provides the detailed status for each component within a site.

The SLEC component status for individual sites is available in the SLEC Site Details window (see [Figure 2-7 on page 2-31](#)). You can open the SLEC Site Details window by double-clicking on the site row in the main SLEC application window. As each site is separated into its eastbound and westbound components, the Site Details window only presents components in the selected direction. The components are presented in topological, or fibering order. The C-band components are followed by the L-band components, which is also the order in which they are equalized at the site. As with the Site Status, component status is indicated by a status and detailed information, as required.

**Figure 2-7**  
**Site Details screen**



As equalization progresses, the Site Details window for the currently In Progress site indicates the status of each component at the site in the Status column. The component status is updated manually and indicates the component currently being equalized, the components that have already been equalized, and the components that have not yet been addressed. The Detail column associated with each component provides detailed information that elaborates on the current status.

**Considerations**

**Component equalization order**

The order of component equalization within a site depends on the site topology, the components actually present and the site chosen by SLEC to be the start site. In what follows, if there are no components present in the stated location then the next location is addressed. As a result, even a site that contains no APBE or OFA components is considered to be equalized.

- Start site

The OADM or Terminal site selected as the start site for equalization of components in the eastbound or westbound direction is visited twice in every round or phase. SLEC will never select an OFA site to be the start site as it is preferred to begin at a site where wavelengths originate. In this regard, a site that contains OADM equipment for one amplifier band and only amplification equipment for the other amplifier band is not considered to be an OFA site and can be selected as a site from which to start equalization.

At the start site, the first visit in the round or phase only addresses the components located in the Post direction. The second visit to the site addresses the components located in the Pre and Pre2 locations and the round or phase is only considered complete after this second visit. [Table 2-6](#) lists the order of component equalization at the start site.

**Table 2-6**  
**Order of component equalization at OADM or Terminal sites that are not the start site**

| Visit  | Location | Band |
|--------|----------|------|
| First  | Post     | C    |
| First  | Post     | L    |
| Second | Pre      | C    |
| Second | Pre2     | C    |
| Second | Pre      | L    |
| Second | Pre2     | L    |

- OADM or Terminal site

The order of component equalization at an OADM or Terminal site, other than the start site, and for which there is OADM equipment in both C and L bands is listed in [Table 2-7](#).

**Table 2-7**  
**Order of component equalization at the start site**

| Location | Band |
|----------|------|
| Pre      | C    |
| Pre2     | C    |
| Post     | C    |
| Pre      | L    |
| Pre2     | L    |
| Post     | L    |

- OFA site

[Table 2-8](#) lists the order of component equalization at an OFA site.

**Table 2-8**  
**Order of component equalization at an OFA site**

| Location | Band |
|----------|------|
| Thru     | C    |
| Thru2    | C    |
| Thru     | L    |
| Thru2    | L    |

- Site with OADM or Terminal for C-band only

[Table 2-9](#) lists the order of component equalization at a site where C-band is OADM or Terminal and L-band only contains amplification equipment.

**Table 2-9**  
**Order of component equalization where C-band is OADM or Terminal and L-band is amplification**

| Location | Band |
|----------|------|
| Pre      | C    |
| Pre2     | C    |
| Post     | C    |
| Thru     | L    |
| Thru2    | L    |

- Site with OADM or Terminal for L-band only

[Table 2-10](#) lists the order of component equalization at a site where L-band is OADM or Terminal and C-band only contains amplification equipment.

**Table 2-10**  
**Order of component equalization where L-band is OADM or Terminal and L-band is amplification**

| Location | Band |
|----------|------|
| Thru     | C    |
| Thru2    | C    |
| Pre      | L    |
| Pre2     | L    |
| Post     | L    |

**Component status at the start site**

At the start site SLEC requires 2 visits to address components in all locations. As a result, if the Site Details window is opened for a site that displays the Post Side details, only the Post components at the site will show status. If the Site Details window is opened when the Pre components are being addressed, the Post components will display the status assigned in the previous visit to the site.

**Blank component status**

At the start of equalization for a direction, all site and component statuses are cleared. A blank component status at a site while equalization is in progress in the system indicates that the component has not been addressed yet. If equalization is not in progress, a blank status may indicate that the shelf where the component is located has been restarted since the last equalization.

**Component status during Phase 2 of One-time Equalization**

Component statuses are only cleared at the beginning of a round of equalization in the direction. In One-time Equalization, each direction requires two phases of equalization. To maintain the ability to monitor progress, when Phase 2 of One-time Equalization begins the status assigned during phase 1 is not updated, until the component is addressed again in the final phase. As a result, if the Site Details window is opened at a site that is currently In Progress - Second Phase In Progress, all components will display a status but only one component will have an In Progress status.

**Blocked and Failed component status**

As described in [Gain-controllable device dependencies on page 2-12](#), some components are dependent on components upstream being equalized. As a result, if a component upstream fails to equalize for some reason, dependent components downstream cannot equalize. A component that cannot equalize because an upstream component failed to equalize is said to be Blocked. A

blocked component is not failed because SLEC will not attempt to adjust it. As a result of this SLEC behavior, when troubleshooting issues with SLEC some sites may have a Failed - Equalization Incomplete status and components within the site may be Blocked - A component upstream failed to equalize. In this case, troubleshooting should begin at the site upstream where the component with the Failed status resides. The Failed component will have a detail reason for the failure that will indicate why the component failed and what should be resolved.

Depending on channel topology, a failure at a component at one site can block other components at the same site from equalizing. For example, if a Pre C-band APBE fails to equalize then the OFA VGA that follows it will be blocked from equalizing. The APBE may be followed by a HIP OFA which is not an equalizable component. Regardless, the SLEC feature treats all OFA types as being part of the process and even though a HIP OFA is not equalizable it can display a status of Blocked. This is necessary, especially in the case when SLEC is bringing the first channel in the amplifier band IS - where SLEC is expected to transition the administrative state of non-equalizable OFA circuit packs. In another example, when a Pre component fails to equalize and the site contains optical pass-through of some channels, Post components in the same band will also be Blocked from equalizing.

Normally, a Failed C-band component only blocks dependent downstream C-band components. Similarly a Failed L-band component only blocks dependent downstream L-band components. However, there are specific component failure reasons where it is necessary for a failure to equalize in one amplifier band requires components in both amplifier bands to be Blocked. Currently there is only one scenario where SLEC does this. Whenever a component fails due to an Unexpected Power Change at its input, all components yet to be equalized at this site, and all downstream dependent components containing channels that pass-through or originate this site, will be blocked. An unexpected power change results if the input power of a component varies by more than 2db while it is equalizing, if the input power of a OFA VGA varies by more than 2db 10 seconds prior to request to begin equalizing, or if the input power of an APBE facility varies by more than 2db 10 seconds after the request to begin equalizing. SLEC blocks components in both bands for this type of failure to avoid problems associated with incorrectly equalizing components to compensate for temporary increases in signal loss, like in a fiber pinch. If the site where the failure is detected is Terminal, all components downstream from this site are insulated from faults upstream. However, in the case of an Unexpected Power Change failure, SLEC is overly cautious by design and makes no attempt to determine the impact to downstream components (required because cannot know if thru fiber is actually in place and ASE may have impacts further downstream).

**Overriding downstream channel failures when equalizing an APBE or OFA VGA**

When SLEC is equalizing a system and there are channel failures at receivers downstream it is sometimes possible for SLEC to safely ignore or override these faults and attempt the equalization anyway. In fact, in the case of first channel addition with SLEC, it is necessary for SLEC to ignore and override the downstream LOS that results from APBE and/or OFA facilities being OOS. Channels are OOS until they are in use and they will not be in use until SLEC successfully brings all components in the channel path IS and then equalizes them.

There are two scenarios in which a downstream channel failure can be ignored or overridden. In both cases, a channel failure can only be ignored if the band containing the failure contains at most a single channel at the facility being equalized.

- 1 At an APBE facility, if there is only one channel detected to be in the band of the facility, a downstream LOS will be ignored.

This is safe in that if the channel is actually present then the facility is able to be equalized successfully. If the channel is not present and the component currently has LOS, the equalization of the facility will fail. If the channel is not present and the component does not have LOS because of ASE at the input, equalizing the APBE facility will have no harm. If equalization is successful, then after all APBE and OFA VGA facilities are equalized, the downstream receiver will still be experiencing a fault but since the network was engineered using NMT the provisioned power target and that which was achieved are correct. There will be no equipment or traffic impact in this case. If the component cannot equalize the ASE at its input, there is also no impact.

- 2 An APBE has successfully equalized its facilities and is guaranteeing the presence of at least one channel being present in every band for which a facility was equalized.

At a downstream OFA facility, this channel guarantee created by the APBE can be used to override a downstream channel failure in any corresponding band that contains at most a single channel at the input to the OFA.

Conversely, if the facility contains more than one channel and there are receiver faults in this band downstream, SLEC cannot attempt to equalize. As discussed in [Accurate channel count deduction in the presence of faults on page 2-10](#), due to a lack of channel level power monitoring points within the Optical Metro 5100/5200 line side equipment, it is impossible to know if the fault results from a failure upstream or downstream from this component. As a result, when more than one channel is expected to be present and some channels are failed at the receivers downstream, it is impossible to know which or how many channels actually are at the input of the component. For this reason SLEC cannot equalize in the presence of multiple failures in a single band.

Table 2-11 lists the channel failures that can be overridden or ignored by SLEC.

**Table 2-11**  
**Channel failures that can be overridden or ignored by SLEC**

| Alarm                           | OCLD | OTR (Line) | MOTR (Line) |
|---------------------------------|------|------------|-------------|
| High Optical Power Warning      | √    | √          | √           |
| Invalid Signal                  | √    | √          | √           |
| Loss of Lock                    | √    | √          | √           |
| Loss of Signal                  | √    | √          | √           |
| Optical Receiver Overload       | √    | √          | √           |
| Remote Automatic Laser Shutdown | √    | √          | √           |

**Component status and events**

SLEC does not issue events based on the status of individual components. Events are issued for the site after all components within the site have been addressed. If one or more components at the site have a Failed or Blocked status, SLEC issues an "Equalization Failed" site event. If all components at the site have a Completed status, SLEC issues an "Equalization Completed" site event.

The SLEC status messages that can appear in the SLEC Site Details window are described below.

**Blank**

A blank component status indicates that the component is ready to be equalized by SLEC. A blank component status can be observed in the following circumstances.

- Equalization has just begun for the direction and this component has not yet been addressed.
- Equalization is in progress in the OSID and the component is a Pre component at the start site. Although all the Post components have a status, the Pre components have not yet been equalized at the start site because all other sites are addressed before the Pre components at the start site.
- The shelf containing the component has been restarted since the last time the component was equalized by SLEC. SLEC statuses do not persist across reboots.
- SLEC has never executed on the OSID of this component.

**Checking**

A SLEC component status of Checking indicates that the component validation check is in progress. Before instructing the device to adjust to the provisioned channel output power target, SLEC first validates the state of the system, and more specifically the state of the channels in the span where this component is located. The following is verified.

- 1 All components upstream from this one, and which this component is dependent, have been successfully equalized.
- 2 The system topology model is stable and valid. This means that the SLEC application's view of topology has not changed in the last 10 seconds and that no conditions that hinder an accurate view of the system topology are present.
- 3 All channels that pass through this component have a recognizable transmitter upstream and a matching receiver downstream.
- 4 All channels that pass through this component are not currently failed at their respective receivers downstream. If there are channel failures downstream, is there a single channel per band present at this component and are these single channels per band guaranteed to be present by an upstream component that has already been equalized, or can the downstream channel failures be safely ignored?

If any of the previous four points are false, this component cannot be equalized and SLEC sets the component status according to the steps listed in [Table 2-12](#)

**Table 2-12**  
**SLEC steps for setting component status when a validation check is false**

| Step Failed | Equalization possible | Next Component Status                                      |
|-------------|-----------------------|--|
| 1           | No                    | Blocked - A component upstream failed to equalize          |
| 2           | No                    | Failed - Topology Error ...                                |
| 3           | No                    | Failed - Detected incomplete channel transmit/receive pair |
| 4           | No                    | Failed - Blocked by downstream fault conditions            |

If all of the checks in step 1 to step 4 are true, SLEC will verify the following component states prior to instructing the device to equalize. Note that for an APBE component, each of the individual facilities are examined separately but

if one facility fails a validation step, the entire component is deemed unsuitable for equalization by SLEC. Only APBE facilities that are detected to have channels present at the input are examined.

- 5 The component equipping rules have been followed - if this is an APBE it is followed by an OFA; if this is a HIP OFA it is preceded by an APBE.
- 6 If the component is an APBE, all band facilities with channels detected to be present at the input are provisioned to be in Channel Mode.
- 7 If the component is an APBE, all band facilities with channels detected to be present at the input exist (not deleted).
- 8 If the component is an OFA and there are channels detected to be present at the input, the OFA facility exists.
- 9 If the first channel is being added to the OFA or APBE facility and that facility is currently OOS, SLEC was able to successfully change the administrative state to IS. If the APBE aggregate port is OOS, SLEC was able to successfully change its administrative state to IS.
- 10 SLEC is able to provision the number of channels it detects to be present at the input of the component. At an APBE, each band has a separate channel count corresponding to the individual band facilities. A OFA VGA has a channel count that covers all 16 channels in its amplifier band. In order for this provisioning to succeed the determined channel count is combined with the provisioned per channel output power target of the facility to calculate the aggregate power target. If the aggregate power target is out of range, SLEC will be unable to equalize the component. For an APBE, the number of channels for each band is provisioned against the individual facilities. If there are no channels present for an APBE band facility or the OFA facility, SLEC provisions the channel count to be zero.

If any of the checks or actions in step 5 to step 10 failed, SLEC cannot equalize the component and the component status is set according to the steps listed in [Table 2-13](#).

**Table 2-13**  
**SLEC steps for setting component status when a validation check is false**

| Step Failed | Equalization possible | Next Component Status                                |
|-------------|-----------------------|--|
| 5           | No                    | Failed - Invalid Equipment Configuration             |
| 6           | No                    | Failed - Component not provisioned properly for SLEC |
| 7           | No                    | Failed - Invalid state for equalization              |

**Table 2-13**  
**SLEC steps for setting component status when a validation check is false**

| Step Failed | Equalization possible | Next Component Status                                |
|-------------|-----------------------|--|
| 8           | No                    | Failed - Invalid state for equalization              |
| 9           | No                    | Failed - Invalid state for equalization              |
| 10          | No                    | Failed - Component not provisioned properly for SLEC |

If all of the checks and action in step 1 to step 10 are true or passed, SLEC is able to equalize the component. In this case, the next status for this component will be In Progress.

**In Progress**

A SLEC component status of In Progress indicates that SLEC is currently equalizing this component.

On average, an APBE (all 4 facilities) takes 30 seconds to equalize and an OFA (VGA or otherwise) requires 5 seconds. In some circumstances, like initial equalization from an OOS state, a facility can take longer to equalize. In the worst case, a component requires 2 minutes to achieve the provisioned per channel output power target. If the system is already equalized and nothing has changed, SLEC still requires this amount of time to verify that the facility is transmitting at the correct power level.

While SLEC is equalizing a component there are 2 potential outcomes - either the component successfully equalizes or it does not. If the component successfully equalizes, it has a status of Completed. When a component fails to equalize it has a status of Failed. In either case, a Completed or Failed status indicates that the component has been addressed by SLEC. At this point, a component will never have a Blocked status as this status results from the validation done prior to starting the equalization.

Table 2-14 lists the three possible Completed statuses from In Progress.

**Table 2-14**  
**Completed statuses**

| Status                                | Meaning   |
|---------------------------------------|---|
| Completed                             | The component equalized normally.   |
| Completed - Equalization not required | The component cannot be equalized, like an HIP OFA. If all the validation passes this component is completed by default.                                      |
| Completed - No Channels present       | The component is completed as a result of SLEC detecting that there are no channel transmitters upstream for this component. The facilities should be in LOS. |

Table 2-15 lists the five possible Failed statuses from In Progress. For an APBE component, the component is Failed if at least one facility with channels present was unable to complete successfully. To find out which facility caused a failure, the individual component status for the facility must be inspected.

**Table 2-15**  
**Failed statuses**

| Status                                    | Meaning   |
|---|---|
| Failed - Target Power Not Attainable Low  | The component does not have enough attenuation range to reach the target output power and the component is at minimum attenuation.  |
| Failed - Target Power Not Attainable High | The component does not have enough attenuation range to reach the target output power and the component is at maximum attenuation.  |
| Failed - Unexpected Power Change          | A change of +/- 2.1 dBm in input power was experienced during equalization. In the case of the OFA VGA, the change may have occurred in the 10 seconds preceding the instruction to equalize by SLEC. |
| Failed - No response from component       | The SLEC application was unable to detect the final status of the component within 130 seconds of instructing it to equalize.   |
| Failed - Failed to equalize               | The component failed to equalize due to some problem, other than those above, encountered during equalization.  |

**Completed**

A SLEC component status of Completed indicates that SLEC successfully addressed the component. In this state all facilities that were equalized are in constant gain mode with an output power within +/- 0.10 dBm of the calculated aggregate output power, based on the number of channels detected to be present. In systems that are stable (no significant change in power levels and

no channel additions or removals), SLEC has simply ensured that the component is transmitting at the calculated aggregate output power level. In any case, SLEC has successfully provisioned the number of channels it detected to be present at the input of the component. For an APBE, each band facility has the number of channels present at the input provisioned, from 1 to 4 channels. If there are no channels present in a band, the channel count for this APBE facility is set to zero channels.

**Completed - Equalization not required**

A SLEC component status of Completed - Equalization not required indicates that the component cannot be equalized. That is, the component is permitted under the SLEC equipping rules but it is not an APBE or OFA VGA circuit pack that contains an eVOA, such as a HIP OFA. As these non-equalizable active components play a role in equalizing a system, SLEC considers them when it addresses devices in the system. As these components cannot be tuned, if all the validation done during the Checking state passes, the component is given the Completed status. If any validation fails, SLEC can assign a Failed status to these components. This is done for consistency purposes. In the Completed status, the "Equalization not required" details identify this component as a HIP OFA rather than a OFA VGA.

**Completed - No channels present**

A SLEC component status of Completed - No channels present indicates that SLEC has detected that there are no channels present at the input of this component. In this case, there is no need to equalize the component and so SLEC automatically marks its status as Completed. In addition, if the component is an equalizable component, such as an APBE or OFA VGA, SLEC will provision the channel count value of each facility to zero. Non-equalizable components such as a HIP OFA can also display this status but SLEC does not provision a channel count for its facility as non-equalizable components do not have this attribute.

**Blocked - A component upstream failed to equalize**

A SLEC component status of Blocked - A component upstream failed to equalize indicates that this component is dependent on a component upstream that did not equalize thereby precluding this component from equalizing. The Failed component can be at this site or at a site upstream. When a component is Blocked from equalizing, SLEC does not change the state of the device. It remains in constant gain mode at the setting last achieved by manual equalization or SLEC. In order to resolve the issue and allow this component to re-equalize, the upstream Failed component must be addressed.

Usually when a component fails it blocks all dependent components in the same amplifier band at this site and sites downstream. Under certain circumstances, such as an Unexpected Power Change, a component will fail and block all components in both bands at downstream sites. In this case, all downstream components that contain channels that pass-through or originate

from the site where the Unexpected Power Change was observed are blocked. Consequently, when attempting to identify the Failed component that is blocking this one, upstream components in the other amplifier band with an Unexpected Power Change failure must be considered.

*Note:* Non-equalizable components, such as a HIP OFA, can display the Blocked - A component upstream failed to equalize status.

**Blocked - A component at this site failed to equalize**

A SLEC component status of Blocked - A component at this site failed to equalize occurs when a component at this site has failed for a reason that warrants both the C and L-band components to be blocked. Currently, the only circumstance where this occurs is a component that fails for an Unexpected Power Change.

When a component at a site has a status of Failed - Unexpected Power Change, all components in either amplifier band that have not yet been equalized at this site get the Blocked - A component at this site failed to equalize status. At sites downstream, all components that contain channels that pass-through or originate from the site where the Unexpected Power Change was observed get the Blocked - A component upstream failed to equalize status.

When a component is blocked from equalizing, SLEC does not change the state of the device. It remains in constant gain mode at the setting last achieved by manual equalization or SLEC.

*Note:* Non-equalizable components, such as a HIP OFA, can display the Blocked - A component at this site failed to equalize status.

**Failed - Blocked by downstream fault conditions**

A SLEC component displaying a status of Failed - Blocked by downstream fault conditions indicates that when SLEC was Checking whether it was safe to equalize this component, it was determined that failures in channels passing through this component could not be ignored or overridden, thereby precluding SLEC from equalizing it. As a result of this failure to equalize downstream dependent components become Blocked with a reason of "An upstream component failed to equalize".

A component can fail in the presence of downstream fault conditions if receivers at sites downstream for channels that pass through the component are experiencing input failures. Table 2-16 lists the downstream input failures that can cause an upstream component to fail.

**Table 2-16**  
**Downstream fault conditions that can fail upstream components**

| Alarm                           | OCLD | OTR (Line) | MOTR (Line) |
|---------------------------------|------|------------|-------------|
| High Optical Power Warning      | √    | √          | √           |
| Invalid Signal                  | √    | √          | √           |
| Loss of Lock                    | √    | √          | √           |
| Loss of Signal                  | √    | √          | √           |
| Optical Receiver Overload       | √    | √          | √           |
| Remote Automatic Laser Shutdown | √    | √          | √           |

At an APBE component, if any band with a failed downstream channel only contains a single channel (i.e., it is a single channel band), SLEC will ignore the downstream failure. This check applies to all bands with channels present at this component. If any band contains more than a single channel and one or more of those channels are failed downstream, SLEC cannot ignore the failures and none of the APBE facilities will be equalized.

Whenever SLEC successfully equalizes a facility on an APBE component, it effectively guarantees that at least one channel in the band of each equalized facility exists. The guarantee is then used at downstream OFA components, if necessary, to override downstream failures for channels passing through this component. Once again, the channel guarantee created by the APBE successfully equalizing, can be used to override a single channel failure but only in a single channel band at the input of an OFA component. If any band present at the input of the OFA contains more than a single channel, and there are one or more failures in channels of this band, SLEC cannot use an APBE channel guarantee to override the downstream failures. In this case, the OFA component will not be equalized.

**Note:** If the SLEC software discovers that the channel transmitter upstream is currently off, downstream failures at the corresponding receivers will automatically be ignored and components will be equalized for one less channel, if possible.

Non-equalizable components, such as a HIP OFA, can also display the Failed - Blocked by downstream channel failures status.

**Failed - Detected incomplete channel transmit/receive pair**

This SLEC component status indicates that when SLEC was checking whether it was safe to equalize this component it determined that the topology model contains incomplete channels in the direction of the component being equalized. In order for SLEC to have an accurate view of the number of channels present at the input of a component, it is necessary for every channel with a transmitter upstream to have a receiver downstream. Furthermore, SLEC must be aware of each circuit pack's presence and the state of the transmitter (On or Off) and receiver (OK or Failed).

A channel is determined to be incomplete if

- There is a transmitter without a matching receiver downstream.
- A channel transmitter and the associated channel receiver are located at the same site. This is an unrealistic configuration and is explicitly blocked by SLEC.
- A site is provisioned to be a linear endpoint and channels appear to pass through a site and are egress on the side that should be the end of the linear system.

*Note:* In an Optical Metro 5100/5200 network, the presence of an OMX for the purposes of topology discovery can only be determined by the presence of an OCLD that is attached to it. Consequently, the topology model view and the actual path of a channel through the system may not be identical. For example, when the first channel in a band is added to the system that is a ring, and no channels in this band exist at other sites, the topology model presumes that the channel originates at this site and goes right around the ring back to this site. This view will change as soon as a channel in this band is added to another site where SLEC will begin to discover the placement of OMX trays in the system. Once channels are present in all the intended locations, SLEC will have an accurate and complete view of the channel topology for this band. Until the system is fully understood, the SLEC software may be blocked from equalizing the system.

When a component fails for this reason, it blocks all dependent components downstream from it from equalizing. As this type of failure usually occurs when the channel topology is changing, components that are not usually dependent on one another may appear to be and will be blocked. In the worst case, all components in the direction are blocked until the matching receiver is inserted.

Non-equalizable components, such as a HIP OFA, can also display the Failed - Detected incomplete channel transmit/receive pair status.

**Failed - Failed to equalize**

This SLEC component status indicates that SLEC has attempted to equalize a component but it failed for some reason. More details and the exact reason the component failed can be seen on the Component Level Power Equalization screen associated with all facilities of an equalizable component.

For a OFA VGA, this status indicates that the component level validation (in Checking status) passed but the component has LOS. With no input power, the target cannot be achieved and the device fails with this status.

For an APBE component, this status occurs if SLEC attempts to equalize an APBE (in In Progress status) and it is unsuccessful for any reason. The exception to this is if the component fails due to an Unexpected Power Change. In the case where one or more facility experiences an Unexpected Power Change during equalization of its eVOA, the APBE component indicates this rather than displaying the Failed - Failed to equalize status. The APBE has 4 equalizable facilities but the SLEC application treats the component as a single entity. As a result, whenever one facility's eVOA fails to achieve its power target the entire component is deemed to have failed and reports the Failed to equalize status. To determine which facilities failed and why, refer to the Power Control Status in the Component Level Power Equalization screen for each facility.

When a component fails for this reason, it blocks all dependent components downstream from it in the same band from equalizing.

A non-equalizable component, such as a HIP OFA, cannot display the Failed - Failed to equalize status because SLEC does not instruct these components to equalize. In other words, non-equalizable components display the In Progress status only as an intermediate state between Checking and Completed - Equalization not required.

**Failed - Invalid state for equalization**

This Failed SLEC component status indicates that the state of this component is such that SLEC cannot attempt to equalize it. The component state is validated at 2 different times while SLEC is active.

- The component is validated during the site-level validation phase for the direction.
- The component is validated after the site-level validation phase has passed and just before the component is equalized by SLEC.

The first validation ensures that all components at all sites in the direction are properly configured so that SLEC may proceed. The second check detects whether any changes to component configurations have occurred between the site-level validation phase and when this specific component gets its chance to equalize. The second check also transitions OOS facilities to IS, if required and

possible, and provisions the number of channels present for the facility. In either case, if the state of the component is invalid for SLEC, it fails with the Invalid state for equalization status.

The site-level validation phase for the direction can fail, resulting in a SLEC component status of Failed - Invalid state for equalization, if one of the following is true for this component.

- A facility that is detected to have channels present at the input to the component has been deleted. For an APBE, all band facilities for which there are channels present at the input must have been created. For an OFA, if there are any channels present at the input, the facility must exist.
- If SLEC is unable to query the state of the equipment or facility for some reason, the component cannot be equalized.

The component-level validation phase, executed prior to SLEC equalizing the component, can fail, resulting in a SLEC component status of Failed - Invalid state for equalization, if one of the following is true for this component.

- A facility that is detected to have channels present at the input to the component has been deleted. For an APBE, all band facilities for which there are channels present at the input must have been created. For an OFA, if there are any channels present at the input, the facility must exist.
- If SLEC is unable to query the state of the equipment or facility for some reason, the component cannot be equalized.
- SLEC was unable to transition the administrative state of a facility with channels detected to be present at the input, to the IS state. When adding the first channel to a new band, typically all APBE facilities for this band are OOS. When adding the first channel to an amplifier band, all OFA and APBE facilities are typically OOS. In bringing this channel in service, the SLEC feature automatically transitions all APBE, including the APBE aggregate facility, and OFA facilities in the path of the channel to IS. If SLEC was unable to do this for some reason, the component cannot be equalized.
- SLEC was unable to transition the administrative state of the component's provisioned equipment from the OOS to IS state. This is only attempted if there are channels detected to be present at the input of this component.

If component state validation fails during the site-level validation phase, the SLEC Site Status is Failed - Component configuration does not support SLEC and the equalization of the entire direction is canceled. If component state validation fails during the check prior to equalization, the SLEC Site Status is Failed - Equalization Incomplete, and all dependent downstream components in the same amplifier band as this component are Blocked from equalizing.

When a component fails for this reason, it blocks all dependent components downstream from it in the same band from equalizing.

A non-equalizable component, such as a HIP OFA, can display this status as a result of the inability of SLEC to query the state of the facility or equipment, or to change the administrative state of either object to IS.

**Failed - Component not provisioned properly for SLEC**

This Failed SLEC component status indicates that the provisioned values for this component do not allow SLEC to equalize it. The provisioned values of the component are validated at 2 different times when SLEC is active.

- The component is validated during the site-level validation phase for the direction.
- The component is validated after the site-level validation phase has passed and just before the component is equalized by SLEC.

The first validation ensures that all components at all sites in the direction are properly provisioned so that SLEC may proceed. The second check detects whether any changes to component provisioning have occurred between the site-level validation phase and when this specific component gets its chance to equalize. The second check also transitions OOS facilities to IS, if required and possible, and provisions the number of channels present for the facility. In either case, if the component is incorrectly provisioned for SLEC, it fails with the Component not provisioned properly for SLEC status.

The site-level validation phase for the direction can fail, resulting in a SLEC component status of Failed - Component not provisioned properly for SLEC, if one of the following is true for this component.

- The component is an APBE and one or more of its facilities is provisioned to be in Band Mode rather than the required Channel Mode. Only facilities that are detected to have channels present at the input of this component are checked. In other words, if a facility is not in use then the provisioned mode does not play a role.

The component-level validation phase, executed prior to SLEC equalizing the component, can fail, resulting in a SLEC component status of Failed - Component not provisioned properly for SLEC, if one of the following is true for this component.

- The component is an APBE and one or more of its facilities is provisioned to be in Band Mode rather than the required Channel Mode. Only facilities that are detected to have channels present at the input of this component are checked. In other words, if a facility is not in use then the provisioned mode does not play a role.

- SLEC is unable to provision the number of channels detected to be present at the input of a component. Facilities that are not in use (detected to have no channels present at the input) are provisioned with a channel count of zero and are assigned the default aggregate power target.
- The number of channels that SLEC has detected at a component combined with the provisioned Channel Output Power Target results in a calculated Aggregate Output Power Target that is out of range. Each component type has an acceptable range for the output power level and if the calculated value is beyond this range the facility cannot be placed IS or equalized, if it is already IS. (This could happen if the provisioned target is very low and channels are removed.)

If component state validation fails during the site-level validation phase, the SLEC Site Status is Failed - Component configuration does not support SLEC and the equalization of the entire direction is canceled. If component state validation fails during the check prior to equalization, the SLEC Site Status is Failed - Equalization Incomplete, and all dependent downstream components in the same amplifier band as this component are Blocked from equalizing.

When a component fails for this reason, it blocks all dependent components downstream from it in the same band from equalizing.

A non-equalizable component, such as a HIP OFA, cannot display this status as these components do not have provisionable equalization parameters.

**Failed - Invalid Equipment Configuration**

This Failed SLEC component status indicates that the equipment deployment rules have been violated due to a change that occurred after the site-level validation phase for the current direction successfully completed. This occurs if one of the following is true.

- The current component is an APBE circuit pack and it is not followed by an OFA circuit pack.
- The current component is a non-OFA VGA circuit pack and it is not preceded by an APBE circuit pack.

When a component fails for this reason, it blocks all dependent components downstream from it in the same band. The site level status will be Failed - Equalization Incomplete.

**Failed - No response from component**

This Failed SLEC component status indicates that during the equalization of the component, the SLEC software was unable to receive an updated status from the component within 130 seconds, the allowable time for a component to equalize. This type of failure rarely occurs but when it does it is usually the result of a communication issue between the SLEC control software and the gain control software on the component itself.

When SLEC fails for this reason, it blocks all dependent downstream components in the same band from equalizing. In a subsequent phase or round of equalization, SLEC will re-attempt the equalization of the component. If the original failure resulted from an internal communication issue, equalization will most likely succeed on this attempt. In the event that there is a hardware error or general communication problem on this shelf, the subsequent re-equalization may continue to fail. In most cases, the only recourse is to try equalization again.

A non-equalizable component, such as a HIP OFA, will never display this status.

**Failed - Target Power Not Attainable Low**

This failed SLEC component status occurs when SLEC attempts to equalize a OFA VGA and the component does not have enough attenuation range to reach the target output power. In this case, the component is at minimum attenuation. The occurrence of this status should coincide with an active Target Power Not Attainable Low alarm.

For an APBE component, if any individual band component fails to equalize for this reason, the SLEC component status for this APBE will be Failed - Failed to equalize. Any port that failed for this reason should have an active Target Power Not Attainable Low alarm. To determine which band facility caused the failure, the Power Control Status can be examined on the Component Level Power Equalization screen for each facility.

A non-equalizable component, such as a HIP OFA, will never display this status.

**Failed - Target Power Not Attainable High**

This failed SLEC component status occurs when SLEC attempts to equalize a OFA VGA and the component does not have enough attenuation range to reach the target output power. In this case, the component is at maximum attenuation. The occurrence of this status should coincide with an active Target Power Not Attainable High alarm.

For an APBE component, if any individual band component fails to equalize for this reason, the SLEC component status for this APBE will be Failed - Failed to equalize. Any port that failed for this reason should have an active Target Power Not Attainable High alarm. To determine which band facility caused the failure, the Power Control Status can be examined on the Component Level Power Equalization screen for each facility.

A non-equalizable component, such as a HIP OFA, will never display this status.

**Failed - Unexpected Power Change**

A failed SLEC component status of Failed - Unexpected Power Change indicates that this component has experienced a variance in its input power level of +/- 2.1 dBm while it is equalizing.

For a OFA VGA, an Unexpected Power Change occurs if the input power has changed by more than +/- 2.1 dBm in the 10 seconds preceding the instruction by SLEC to equalize, or while equalization is in progress.

For an APBE, an Unexpected Power Change occurs for a band facility if the input power at this facility varies by more than +/- 2.1 dBm in the 10 seconds after the instruction by SLEC to equalize, or while equalization is in progress. Note that an IS APBE facility automatically attempts to achieve its calculated aggregate output power target whenever the input power changes or the provisioned power target or channel count is modified. An APBE component can also be prompted to be equalized manually or by the SLEC application. If any APBE facility, with channels detected by SLEC to be present, experiences an Unexpected Power Change, the entire component fails with the Failed - Unexpected Power Change status. To determine which facilities failed the component, inspect the Power Control Status on the Component Level Power Equalization screen for each facility.

When a component fails due to an Unexpected Power Change, it is necessary for SLEC to block equalization of all components in both amplifier bands. As a result, an Unexpected Power Change on a component at a site, causes all components yet to equalize at this site to get the status Blocked - A component at this site failed to equalize. In addition, all components at downstream sites that contain channel that passing through or originating from the site where the Unexpected Power Change is detected become Blocked - A component upstream failed to equalize.

SLEC blocks components in both bands for this type of failure to avoid problems associated with incorrectly equalizing components to compensate for temporary increases in signal loss, like in a fiber pinch. Strictly speaking, if the site where the failure is detected is Terminal, all components downstream from this site are isolated from faults upstream. However, in the case of an Unexpected Power Change failure, SLEC is overly cautious by design and makes no attempt to determine the impact to downstream components, which could be dependent on conditions undetectable by the NE (such as the presence of a thru fiber between west and east OMX trays).

A non-equalizable component, such as a HIP OFA, will never display this status.

**Failed - Topology Error**

A SLEC component status of Failed - Topology Error indicates that SLEC has determined that at the time of equalization for this component, the system-wide topology model from which the component channel count is retrieved is unstable or potentially inaccurate. To ensure correct equalization in the system, the SLEC application is heavily dependent in the system topology model being accurate. As a result, if the topology model contains any measure of uncertainty SLEC fails to equalize.

A Failed - Topology Error SLEC component status also contains more detailed information on the type of error and location of the error. This information can aid you in troubleshooting the problem. [Table 2-17](#) lists the detailed topology errors. Each status contains information generated at run-time, including site and shelf identifiers of the locations experiencing problems.

**Table 2-17**  
**Failed - Topology Error status descriptions**

| Topology Error Status   | Description  |
|---|--|
| Adjacent site missing or unexpected - Missing: West (<sites>) East (<sites>)<br>Unexpected: West (<sites>) East (<sites>) | Identifies sites whose west or east adjacent sites either have not communicated in 15 seconds, or are unexpectedly communicating with this site. This status can result from OSC fibering problems or misprovisioned OSC Adjacent Site connected attributes. When this occurs, the accuracy of the channel count at each APBE or OFA is in question.<br><br>A missing adjacent site can occur if: <ul style="list-style-type: none"> <li>• the OSC connected attribute is misprovisioned and should be "Not Connected" because this site is the endpoint of a linear system.</li> <li>• an OSC drop fiber is broken at this site, or an OSC add fiber is broken upstream.</li> <li>• an OSC circuit pack at an adjacent site is missing or failed.</li> <li>• an intersite fiber failure exists.</li> <li>• the OSC is incorrectly fibered to another OSC with a mis-provisioned OSID and there is an OSID Mismatch alarm active on both OSC cards.</li> <li>• there is an Overhead problem on the OSC cards at adjacent sites.</li> </ul> An unexpected adjacent site can occur if <ul style="list-style-type: none"> <li>• the OSC connected attribute is mis-provisioned and should be "Connected" because this site is not the endpoint of a linear system.</li> <li>• the system is a linear system but the intersite fiber is incorrectly fibered to an adjacent site.</li> <li>• the system is a linear system but the OSC port is incorrectly fibered to another OSC.</li> </ul> |

**Table 2-17 (continued)**  
**Failed - Topology Error status descriptions**

| Topology Error Status  | Description   |
|--|---|
| Shelf(s) at site are not reporting -- <site>(<shelves>)          | <p>Identifies shelves at a site in the system that have not communicated over the Enet2 LAN in the last 15 seconds. According to the deployment rules for SLEC, all shelves at a site must be hubbed together through Enet2 ports, even those shelves that do not contain equipment for the OSID of the OSC at this site. This can occur if:</p> <ul style="list-style-type: none"> <li>• the Enet2 ports are provisioned incorrectly for SLEC</li> <li>• an Ethernet cable is broken or missing, or the required hub is missing or failed</li> <li>• an SP at the site is failed or missing</li> <li>• the shelf is powered off or has recently been decommissioned</li> <li>• the hubbing group is provisioned incorrectly</li> <li>• the shelf has recently had its site identifier modified</li> <li>• a shelf at the site had its SP restarted or reseated</li> </ul> <p>When this status occurs, the topology model cannot accurately report on the equipment located at the site or the state of channel transmitters and receivers.</p>   |
| Shelf(s) at site are reporting unexpectedly -- <site>(<shelves>) | <p>Identifies shelves at a site that are unexpectedly communicating over the Enet2 LAN. This can occur if:</p> <ul style="list-style-type: none"> <li>• the shelf recently had its site identifier changed</li> <li>• the shelf is incorrectly connected to the Enet2 LAN</li> <li>• the site identifier for the shelf is incorrect</li> <li>• the hubbing group is incorrect</li> </ul> <p>When this status occurs, the topology model is uncertain and therefore the state of the system cannot be guaranteed.</p>  |
| Shelf(s) at site have topology errors -- <site>(<shelves>)       | <p>Identifies shelves at sites where specific topology related errors have been detected. In many cases, these errors refer to alarm conditions that are active on these shelves. In some cases, the alarms are masked due to facility and equipment administrative states being OOS. Conditions that result in this status are:</p> <ul style="list-style-type: none"> <li>• Fiber Mismatch alarm</li> <li>• OSID Mismatch alarm</li> <li>• Circuit Pack Failure alarm</li> <li>• Inter-card Communication Failure alarm or condition</li> <li>• Circuit Pack Mismatch alarm</li> <li>• Unassigned Optical System Identifier alarm</li> <li>• Incomplete Provisioning alarm</li> <li>• Invalid Provisioning alarm</li> <li>• Some equipment at site provisioned with non-empty OSID and other equipment provisioned with empty OSID.</li> <li>• A circuit pack is seated in a shelf but its equipment provisioning has been deleted.</li> </ul> <p>At sites where two or more OSIDs intersect, these conditions on equipment or shelves for the other OSID will also block SLEC from equalizing.</p> <p>A topology error condition makes the topology model uncertain.</p> |

**Table 2-17 (continued)**  
**Failed - Topology Error status descriptions**

| Topology Error Status  | Description   |
|--|---|
| Topology model change detected within the last 10 seconds -- <sites> | <p>Identifies sites that have observed a change in their topological information in the last 10 seconds. For SLEC to equalize, the system-wide topology model must be stable for at least 10 seconds. In some circumstances, the topology model may take 15 to 20 seconds to stabilize due to propagation delays around the system. SLEC will not equalize until the topology model has not changed in 10 seconds at all sites in the system.</p> <p>A topology model change can be triggered by the following:</p> <ul style="list-style-type: none"> <li>• The insertion or removal of a line side circuit pack, such as OCLD, OTR, MOTR, OSC, OFA, or APBE.</li> <li>• An OSID change on a piece of equipment at a site on the system.</li> <li>• A change in alarm state on line-side circuit pack.</li> <li>• A change in the transmitter state of an OCLD, OTR, MOTR, or OSC.</li> <li>• An OFA or APBE facility administrative service state change.</li> <li>• The modification of the direction or location attributes of an OFA or APBE.</li> <li>• The modification of any site-level equipment attribute on the OSC circuit pack equipment (West Neighbor, East Neighbor, Fiber Topology, Fiber Configuration).</li> <li>• A short failure condition that does not result in an alarm on an OCLD, OTR, MOTR, OSC, OFA, or APBE.</li> <li>• A restart of a shelf.</li> </ul> <p>When the topology model is unstable, the accuracy of the available channel counts is questionable.</p> |
| Topology status uncertain - Missing update from site(s) -- <sites>   | <p>Identifies sites that have not communicated their status with the current site in the last 10 seconds. Sites share their status every 5 seconds. If the status of one site is missing for 10 seconds, the topology model cannot guarantee the accuracy of the information required by SLEC to equalize. This caution is necessary to ensure traffic disruptions and equipment damage do not occur as a result of inaccurate information used for SLEC.</p> <p>This status can be caused by the following:</p> <ul style="list-style-type: none"> <li>• An OSC at the identified site is failed or missing</li> <li>• The SP of the OSC shelf at the identified site is failed or missing.</li> <li>• The identified shelf has been restarted.</li> <li>• There are transmission problems in the OSC network.</li> <li>• Internal data-comms network congestion is increasing delays in delivering messages.</li> <li>• If the site identifier of the adjacent OSC shelf has recently changed.</li> <li>• If the adjacent site OSC connected attribute is provisioned to be Connected and this site is actually a linear endpoint but the site has not yet been declared missing.</li> </ul>  |

**Table 2-17 (continued)**  
**Failed - Topology Error status descriptions**

| Topology Error Status   | Description  |
|---|--|
| Topology status uncertain - Unexpected update from site(s) -- <sites>               | Identifies sites that have communicated their status with the current site unexpectedly. This site may consider the communication to be unexpected if <ul style="list-style-type: none"> <li>• The site has just recently (last few minutes) been added to the system.</li> <li>• The site identifier of the shelf with the OSC or the OSID of the OSC at the adjacent site has recently been changed.</li> <li>• A new OSC card has just been configured at the identified site.</li> <li>• The adjacent site OSC connected attribute is mis-provisioned as "Not Connected" and the adjacent site is actually present but the 15-second period to declare the site Unexpected as not yet elapsed.</li> <li>• There is an OSC fibering problem between OSC cards that should be part of separate OSID systems.</li> </ul> When this status exists, the accuracy of the topology model is in question and SLEC will be blocked. |
| Adjacent site did not report in the last 10 seconds - West (<sites>) East (<sites>) | Identifies the west or east adjacent site of the identified site identifiers did not communicate with this site in the last 10 seconds. After 15 seconds, the adjacent site is considered to be missing [ <a href="#">Adjacent site missing or unexpected - Missing: West (&lt;sites&gt;) East (&lt;sites&gt;) Unexpected: West (&lt;sites&gt;) East (&lt;sites&gt;) status</a> ]. This occurs if: <ul style="list-style-type: none"> <li>• an OSC fiber has momentarily been removed or broken, or there are transmission problems on the OSC links.</li> <li>• an OSC at the adjacent site has been rebooted, reseated, or replaced.</li> </ul> This status indicates that the topological information communicated between adjacent sites is out-of-date. As a result, SLEC cannot guarantee the accuracy of the discovered channel counts and will not attempt to equalize.  |
| Shelf(s) at site did not report in the last 10 seconds -- <site>(<shelves>)         | Identifies shelves at sites in the system that have not communicated their topological information to the topology engine in the last 10 seconds. After 15 seconds, these shelves are considered to be missing [ <a href="#">Shelf(s) at site are not reporting -- &lt;site&gt;(&lt;shelves&gt;) status</a> ]. This can occur for the same reasons that the Shelf(s) at site are not reporting status can occur. <p>This status indicates that the topological information required for an accurate view of the equipment and the channel transmitter and receiver states is out-of-date. As a result, SLEC cannot guarantee the accuracy of the discovered channel counts and will not attempt to equalize.</p>   |

**Note:** Several of these topology problems can exist simultaneously in the system. SLEC prioritizes topology errors in the order they are presented in [Table 2-17](#). As a result, once one topology error is cleared, a subsequent execution of SLEC may fail for a different issue.

When a component fails due to a topology error, SLEC blocks all dependent downstream components in the same amplifier band from equalizing.

A non-equalizable component, such as a HIP OFA, can display a Failed - Topology Error status as it may be at the time SLEC is addressing this component that a topology error is discovered.

**Aborted - User Request**

This SLEC component status indicates that a user has manually stopped equalization by pressing the Stop Equalization button in the SLEC application window and this component has not been addressed by SLEC in this round of equalization.

When SLEC is stopped by a user, all sites that do not have a Completed or Failed equalization status change to the Aborted status. In addition, all component statuses within the sites that do not have a Completed, Failed, or Blocked status also display the Aborted status. Sites and Components that have already equalized do not have their status changed in order to permit SLEC to be stopped without changing what had happened. In Continuous Equalization, SLEC does not stop equalizing until the Stop Equalization button is pressed.

If a component is In Progress and a user stops equalization, SLEC stops monitoring the equalization process but the component continues to equalize, successfully or otherwise.

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# Alarm description

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## In this chapter

- [Alarm processing sequence on page 3-1](#)
- [Alarm clearing procedures on page 3-1](#)
- [Alarms, warnings, and events reference on page 3-2](#)
- [Optical Trunk Switch events, autonomous messages and alarms on page 3-16](#)
- [Warnings and error messages on page 3-19](#)
- [Call for help on page 3-31](#)

## Alarm processing sequence

The best order for processing alarms is

- 1 Far-end site (where traffic terminates)
- 2 Pass-through site
- 3 Near-end site (where traffic originates)
- 4 Backbone

This sequence accurately isolates faults, especially when there is more than one fault.

## Alarm clearing procedures

Optical Metro 5100/5200 software uses the Fault—Active Alarms window of the System Manager to give you detailed information about the status of performance monitoring alarms. These alarms monitor the end-to-end performance of traffic connections. You can maintain the bit error rate (BER) of digital payloads at the lowest level possible by clearing alarms quickly.

### **Locating and clearing alarms**

To locate and clear Optical Metro 5100/5200 alarms

- 1 Launch the System Manager.
- 2 Select the Fault tab, then the Active Alarms tab.
- 3 Identify the shelf with the highest severity alarm on the active alarm list.
- 4 Determine which circuit pack is causing the alarm from the alarm details.
- 5 Clear the alarms one channel, and in one direction at a time, starting with the highest severity alarm.

### **Alarms, warnings, and events reference**

Alarms, warnings, and events tell you the status of the Optical Metro 5100/5200 network. Alarms, warnings, and events are not erased when a shelf is restarted. The System Manager deletes the alarm indicators and warnings when the condition causing the alarm or warning is fixed.

There are

- audible alarm indicators on the shelf
- visible alarm indicators on the maintenance panel
- visible alarm indicators in the System Manager

There are audio and visual indications of critical and major alarms. All other alarms cause visual indications only. The maintenance panel gives you an instant indication of the current alarms. The Fault window in the System Manager provides detailed information about alarms, warnings, and events.

You can use these indicators to monitor the end-to-end performance of traffic connections. By responding to alarm, alert and event indicators immediately, you can maintain the BER of digital payloads at the lowest level possible.

You can print and save alarms, warnings, and events for detailed error statistics.

## Alarms

[Table 3-1](#) lists the System Manager alarm classifications.

**Table 3-1**  
**Optical Metro 5100/5200 alarm classifications**

| Alarm type                       | Definition   |
|----------------------------------|--|
| Critical                         | An anomaly that affects traffic and requires immediate attention.  |
| Critical/Major<br>Critical/Minor | A dual-severity alarm. The alarm is critical when the affected path is carrying traffic that cannot be switched to another path. If the alarm refers to an OCI circuit pack, the alarm is always critical. |
| Major                            | An anomaly that may affect traffic if it does not receive immediate attention.   |
| Minor                            | A secondary indicator of another alarm or a condition that does not affect traffic.  |
| Warning                          | An anomaly that does not affect traffic. A warning can be an early indicator of equipment that is failing.   |

## Intermittent alarms

Alarms that are raised and cleared more than ten times per minute are declared as "Intermittent". Intermittent alarms will be displayed with an "Intermittent" state in the Fault-Active alarm screen. These alarms on the Fault-Active alarm screen will not toggle as the underlying alarm becomes active and clears. Intermittent alarm toggles are displayed in the Event list.

## Events

Events report the changes that occur in the Optical Metro 5100/5200 equipment suite. Although all alarms and warnings are events, not all events are alarms or warnings.

**Note:** Beginning in Release 6.1, login, logout and password validation events are security-related events. Any of these events that are left in non-volatile storage from a release prior to Release 6.1 are not be reported as a security event.

[Table 3-2 on page 3-4](#) lists path or equipment switching, circuit pack restart, and software load events.

### 3-4 Alarm description

**Table 3-2**  
**Optical Metro 5100/5200 events**

| Event   | Description  |
|---|--|
| Add equipment                                   | The equipment is added.  |
| Add equipment- Pluggable                        | The pluggable equipment is added.  |
| Add Facility                                    | A facility has been added.   |
| Add Path To Port Assignment                     | A path has been assigned to a port.  |
| Alarm Severity Changed                          | The alarm severity has changed.  |
| Alarm Severity Reset                            | The alarm severity has been reset.   |
| All Alarm Severity Reset to Default             | All Alarm Severity has been set to Default   |
| ALS Activate Laser Summary                      | <p>This event indicates the laser status of the circuit pack in each slot. It appears several seconds after the laser activation command is issued.</p> <p><b>Note:</b> This event contains a 20-character string. The string represents the 20 slots in a shelf. Each character in the string represents its corresponding slot in a shelf. For example, the first character in the string represents slot 1. The second character represents slot 2.</p> <p>Y = Laser of the circuit pack in the slot is ON.<br/>           N = Laser of the circuit pack in the slot is OFF.<br/>           X = The circuit pack in the slot is neither an OCLD nor an OTR.</p> |
| APBE Band Set to Maximum Loss                   | The eVOA for the APBE band has been set to maximum loss.   |
| APBE Data Back Up Completed                     | The APBE data backup has completed.  |
| APBE Data Back Up Failed, Retry in 15 minutes   | The APBE data backup has failed, and will be tried again in 15 minutes.  |
| Applying Terminal Loopback                      | A terminal loopback is applied   |
| Attempting to change Optical System Identifiers | There is an attempt to change Optical System Identifiers.  |
| Automatic Equipment Switch to OCM 9             | Traffic has been switched to the OCM in slot 9.  |
| Automatic Equipment Switch to OCM 10            | Traffic has been switched to the OCM in slot 10.   |
| Automatic Laser Recovery Enabled                | The Automatic Laser Recovery feature is enabled.   |
| Automatic Laser Recovery Disabled               | The Automatic Laser Recovery feature is disabled.  |
| Automatic Laser Shutdown Enabled                | The Automatic Laser Shutdown feature is enabled.   |

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| <b>Event</b>                                    | <b>Description</b>   |
|---|--|
| Automatic Laser Shutdown Disabled               | The Automatic Laser Shutdown feature is disabled.  |
| Automatic Path Switch to East path              | Traffic has been automatically switched to the east path.  |
| Automatic Path Switch to West path              | Traffic has been automatically switched to the west path.  |
| Automatic Protection Switch                     | An automatic equipment protection switch has occurred.   |
| Autoprovisioning has occurred                   | The SP has automatically provisioned the indicated circuit pack with default configuration data. |
| Band Equalization Complete                      | The APBE has reached the requested attenuation for the port.                                     |
| Band Input Failure Occurred                     | Band Input Failure has occurred.   |
| Card up/down grade Failed                       | The up/down grade for the circuit pack has failed.   |
| Card up/down graded Successfully                | The circuit pack has successfully been up/down graded.   |
| Circuit Pack Cold Restart has occurred          | The indicated circuit pack has been manually restarted.  |
| Circuit Pack Inserted                           | A circuit pack has been inserted into a slot.  |
| Circuit Pack Inserted - Pluggable               | A pluggable has been inserted into a sub-slot on a circuit pack.                                 |
| Circuit Pack Removed                            | A circuit pack has been removed from its slot.   |
| Circuit Pack Removed - Pluggable                | A pluggable has been removed from a sub-slot on a circuit pack.                                  |
| Circuit Pack Restart has occurred               | The indicated circuit pack has restarted.  |
| Circuit Pack Warm Restart has occurred          | The indicated circuit pack has been restarted using the System Manager.                          |
| Clearing Fault Sectionalization Alarms          | The fault sectionalization alarms are being cleared.   |
| Clearing Fault Sectionalization Alarms Complete | The clearing of the fault sectionalization alarms is complete.                                   |
| Community name changed for 'admin' class        | The community name has been changed for the "admin" class.                                       |
| Community name changed for 'operator' class     | The community name has been changed for the "operator" class.                                    |
| Community name changed for 'observer' class     | The community name has been changed for the "observer" class.                                    |
| Continuous Equalization Started                 | Continuous Equalization has started  |

### 3-6 Alarm description

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**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| <b>Event</b>  | <b>Description</b>   |
|---|--|
| Corrupted local data storage detected, APBE re-initializing | The APBE detected a failure in its persistent heap storage during a warm reboot. |
| Create Channel Assignment                                   | A channel assignment was created.  |
| Create Port Assignment                                      | A port assignment was created.   |
| Created channel assignment with disabled WCV                | A channel assignment was created with wavelength validation disabled.            |
| CV 15 Min   | The current 15-Min bin of CV has crossed the TCA threshold.                      |
| CV 1 Day  | The current 1-Day bin of CV has crossed the TCA threshold.                       |
| CVL 15 Min  | The current 15-Min bin of CVL has crossed the TCA threshold.                     |
| CVL 1 Day   | The current 1-Day bin of CVL has crossed the TCA threshold.                      |
| CV-LFE 15 Min   | The current 15-Min bin of CV-LFE has crossed the TCA threshold.                  |
| CV-LFE 1 Day  | The current 1-Day bin of CV-LFE has crossed the TCA threshold.                   |
| CVP 15 Min  | The current 15-Min bin of CVP has crossed the TCA threshold.                     |
| CVP 1 Day   | The current 1-Day bin of CVP has crossed the TCA threshold.                      |
| CV-PFE 15 Min   | The current 15-Min bin of CV-PFE has crossed the TCA threshold.                  |
| CV-PFE 1 Day  | The current 1-Day bin of CV-PFE has crossed the TCA threshold.                   |
| CVS 15 Min  | The current 15-Min bin of CVS has crossed the TCA threshold.                     |
| CVS 1 Day   | The current 1-Day bin of CVS has crossed the TCA threshold.                      |
| Database Agent Started                                      | The database agent has started.  |
| Database Backup In Progress                                 | The database backup is in progress.  |
| Database Backup Failed                                      | The database backup has failed.  |

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| <b>Event</b>  | <b>Description</b>  |
|---|---|
| Database Backup Completed   | The database backup has completed.  |
| Database Restore Commit In Progress                               | The database restore commit is in progress  |
| Database Restore Commit Failed                                    | The database restore commit has failed.   |
| Database Restore Commit Completed                                 | The database restore commit has completed.  |
| Database Restore Cancel Failed                                    | The database restore cancel has failed.   |
| Database Restore Cancel Completed                                 | The database restore cancel has completed.  |
| Database Restore Failed   | The database restore has failed   |
| Database Restore Load Completed                                   | The database restore load has completed   |
| Degraded Primary Clock SSM  | Primary clock sync status message is degraded.  |
| Degraded Secondary Clock SSM                                      | Secondary clock sync status message is degraded.  |
| Delete Channel Assignment   | The channel assignment was deleted  |
| Delete Equipment  | The equipment is deleted.   |
| Delete Equipment - Pluggable                                      | The pluggable equipment is deleted.   |
| Delete Facility   | A Facility is deleted   |
| Delete Path From Port Assignment                                  | A path assignment has been deleted from a port.   |
| Delete Port Assignment  | The port assignment is deleted  |
| Disable the enet2 access control, <IP address>, <user>, PASS/FAIL | The user has requested to disable the Ethernet port 2 access control feature on all of the shelves in this hubbing group. |
| Distributed Loads Removed   | The distributed loads have been removed from zones.   |
| EBL 15 Min  | The current 15-Min bin of EBL has crossed the TCA threshold.  |
| EBL 1 Day   | The current 1-Day bin of EBL has crossed the TCA threshold.   |
| EB-LFE 15 Min   | The current 15-Min bin of EB-LFE has crossed the TCA threshold.   |
| EB-LFE 1 Day  | The current 1-Day bin of EB-LFE has crossed the TCA threshold.  |
| EBP 15 Min  | The current 15-Min bin of EBP has crossed the TCA threshold.  |

3-8 Alarm description

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| Event  | Description   |
|--|---|
| EBP 1 Day  | The current 1-Day bin of EBP has crossed the TCA threshold.   |
| EB-PFE 15 Min  | The current 15-Min bin of EB-PFE has crossed the TCA threshold.   |
| EB-PFE 1 Day   | The current 1-Day bin of EB-PFE has crossed the TCA threshold.  |
| EBS 15 Min   | The current 15-Min bin of EBS has crossed the TCA threshold.  |
| EBS 1 Day  | The current 1-Day bin of EBS has crossed the TCA threshold.   |
| Enable the enet2 filtering, <IP address>, <user>, PASS/FAIL  | The user has requested to enable Ethernet port 2 filtering on all of the shelves in the hubbing group.  |
| Enable the enet2 encryption, <IP address>, <user>, PASS/FAIL | The user has requested to enable Ethernet port 2 encrypting on all of the shelves in the hubbing group. |
| End-to-End Channel Assignment ID Created                     | A new end-to-end channel assignment was created.  |
| End-to-End Channel Assignment ID Deleted                     | An existing end-to-end channel assignment was deleted.  |
| End-to-End Channel Assignment ID Modified                    | An existing end-to-end channel assignment was modified.   |
| Equalization Completed                                       | The Equalization has completed  |
| Equalization Failed  | The equalization has failed   |
| Equipment Administrative State Change: In-Service            | The administrative state of the circuit pack equipment has been changed to in-service.                  |
| Equipment Administrative State Change: Out-of-Service        | The administrative state of the circuit pack equipment has been changed to out-of-service.              |
| ES 15 Min  | The current 15-Min bin of ES has crossed the TCA threshold.   |
| ES 1 Day   | The current 1-Day bin of ES has crossed the TCA threshold.  |
| ESL 15 Min   | The current 15-Min bin of ESL has crossed the TCA threshold.  |
| ESL 1 Day  | The current 1-Day bin of ESL has crossed the TCA threshold.   |

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| <b>Event</b>   | <b>Description</b>   |
|--|--|
| ES-LFE 15 Min  | The current 15-Min bin of ES-LFE has crossed the TCA threshold.  |
| ES-LFE 1 Day   | The current 1-Day bin of ES-LFE has crossed the TCA threshold.   |
| ESP 15 Min   | The current 15-Min bin of ESP has crossed the TCA threshold.   |
| ESP 1 Day  | The current 1-Day bin of ESP has crossed the TCA threshold.  |
| ES-PFE 15 Min  | The current 15-Min bin of ES-PFE has crossed the TCA threshold.  |
| ES-PFE 1 Day   | The current 1-Day bin of ES-PFE has crossed the TCA threshold.   |
| ESS 15 Min   | The current 15-Min bin of ESS has crossed the TCA threshold.   |
| ESS 1 Day  | The current 1-Day bin of ESS has crossed the TCA threshold.  |
| Ethernet Port 2 Access Control Disabled              | The Ethernet 2 port access control feature has been disabled on the shelf.   |
| Ethernet Port 2 Access Control in Filter mode        | The Ethernet 2 port access control feature is filtering incoming packets on the shelf.   |
| Ethernet Port 2 Access Control in Encrypt mode       | The Ethernet 2 port access control feature is rejecting unencrypted incoming packets and encrypting outgoing packets on the shelf. |
| Expected Far End Wavelength is set to 'Any'          | The expected far-end wavelength is set to any and no alarms will be raised as a result of the wavelengths not being the same.      |
| Expected Far End Wavelength is set to 'Same'         | The expected far-end wavelength is set to same and alarms will be raised if the wavelengths are not the same.                      |
| Facility Administrative State Change: In-Service     | The administrative state of a circuit pack facility has been changed to in-service.  |
| Facility Administrative State Change: Out-of-Service | The administrative state of a circuit pack facility has been changed to out-of-service.  |
| Fault Sectionalization Feature Off                   | The intrasite fault sectionalization feature is disabled.  |
| Fault Sectionalization Feature On                    | The intrasite fault sectionalization feature is enabled.   |

3-10 Alarm description

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| <b>Event</b>                                | <b>Description</b>   |
|---|--|
| FEC-CE 15 Min                               | The current 15-Min bin of FEC-CE has crossed the TCA threshold.  |
| FEC-CE 1 Day                                | The current 1-Day bin of FEC-CE has crossed the TCA threshold.   |
| FEC-UF 15 Min                               | The current 15-Min bin of FEC-UF has crossed the TCA threshold.  |
| FEC-UF 1 Day                                | The current 1-Day bin of FEC-UF has crossed the TCA threshold.   |
| FC 15 Min                                   | The current 15-Min bin of FC has crossed the TCA threshold.  |
| FC 1 Day                                    | The current 1-Day bin of FC has crossed the TCA threshold.   |
| Flash Error                                 | There is a flash memory error.   |
| Flash File System reformatted               | The flash file system has been reformatted.  |
| Flash Locked                                | The flash memory is locked.  |
| Forced Switch to OCM 9                      | Traffic has been forced to switch to the OCM in slot 9.  |
| Forced Switch to OCM 10                     | Traffic has been forced to switch to the OCM in slot 10.   |
| Ftp Failed                                  | The Ftp has failed.  |
| Ftp File Too Big                            | The Ftp file is too big to be transferred to the shelf.  |
| Gain Control started                        | The power controller started adjusting the power.  |
| Gain control failed                         | The power controller stops adjusting the power because an alarm has been raised or a time-out has occurs                                   |
| Gain control failed:Can not converge        | The OFA VGA target power cannot be reached in 120 seconds  |
| Gain control failed:Power Unattainable High | The OFA VGA target gain is too high for the current in-out change  |
| Gain control failed:Power Unattainable Low  | The OFA VGA target gain is too low for the current input power. Also raised if the OFA VGA declares a LOS during the power control process |
| Gained Contact with (shelfname)             | The primary shelf has regained contact with the remote shelf named in the event.   |

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| <b>Event</b>                                | <b>Description</b>  |
|---|---|
| Gain control failed:Unexpected Power change | The input power changes by more than 2 dB during a 10 second sliding window, which begins in 10 seconds before the equalization start request, and ends when the equalization completes successfully. |
| Gain Control succeeded                      | The power controller successfully completes adjustment of the output power.   |
| Gained Contact with (shelfname)             | SMI has gained contact with the shelf   |
| Health Check In Progress                    | The health check is in progress.  |
| Health Check Completed                      | The health check has completed.   |
| Health Check Failed                         | The health check has failed.  |
| Invalid Load Header                         | The load header is invalid.   |
| Invalid Load CRC                            | The load CRC is invalid.  |
| Laser Activated                             | The laser activation command is issued.   |
| Library Removed: SP Load Size Is Incorrect  | The load library has been removed, because the SP load size is not correct.   |
| Library Removed: SP Load Does Not Exist     | The load library has been removed, because the SP load does not exist.  |
| Load rejected: Unsupported Circuit Pack     | The load is not allowed on the circuit pack that is installed.  |
| Load Transfer from NE failed                | The load transfer from NE has failed.   |
| Lost Contact to (shelfname)                 | The primary shelf lost contact to the remote shelf named in the event.  |
| Manual Switch to East path                  | Traffic has been manually switched to the east path.  |
| Manual Switch to West path                  | Traffic has been manually switched to the west path.  |
| Manual Switch to OCM 9                      | Traffic has been manually switched to the OCM in slot 9.  |
| Manual Switch to OCM 10                     | Traffic has been manually switched to the OCM in slot 10.   |
| Mask BIF Alarms                             | BIF alarms are being masked.  |
| Mask LOS Alarms                             | LOS alarms are being masked.  |
| Mask Overhead alarms                        | Overhead alarms are being masked.   |
| OFSS 15 Min                                 | The current 15-Min bin of OFSS has crossed the TCA threshold.   |

3-12 Alarm description

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| <b>Event</b>                                     | <b>Description</b>  |
|--|---|
| OFSS 1 Day                                       | The current 1-Day bin of OFSS has crossed the TCA threshold.  |
| Optical Power Transmit High                      | The optical power has crossed the user-provisionable TCA threshold of TxPowerHigh parameter.        |
| Optical Power Transmit Low                       | The optical power has crossed the user-provisionable TCA threshold of TxPowerLow parameter.         |
| Optical Power Receive High                       | The optical power has crossed the user-provisionable TCA threshold of RxPowerHigh parameter.        |
| Optical Power Receive Low                        | The optical power has crossed the user-provisionable TCA threshold of RxPowerLow parameter.         |
| Optical System Identifier changed                | The Optical System Identifier has been changed.   |
| Overhead Channel Frame Error Second              | Overhead channel has had too many errors.   |
| Primary Reference Clock Changed                  | Primary clock source has been changed.  |
| Primary Reference Clock Deprovisioned            | Selected port has been removed as the primary timing reference clock source.                        |
| Primary Reference Clock Provisioned              | Selected port has been designated as the primary timing reference clock source.                     |
| Reference Clock Automatic Switch to Freerun Mode | The timing reference clock is now in Freerun mode.  |
| Reference Clock Automatic Switch to Holdover     | The timing reference clock is now in Holdover mode.   |
| Reference Clock Automatic Switch to Primary      | The timing reference clock is now using the primary port as its reference.                          |
| Reference Clock Automatic Switch to Secondary    | The timing reference clock is now using the secondary port as its reference.                        |
| Reference Clock Manual Switch to Primary         | At the user's request, the timing reference clock is now using the primary port as its reference.   |
| Reference Clock Manual Switch to Secondary       | At the user's request, the timing reference clock is now using the secondary port as its reference. |
| Remote Fault Notification Enabled                | The remote fault notification feature is enabled.   |
| Removing Terminal Loopback                       | The terminal loopback is removed.   |
| Secondary Reference Clock Changed                | The secondary clock source has been changed.  |

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| <b>Event</b>                            | <b>Description</b>  |
|---|---|
| Secondary Reference Clock Deprovisioned | The selected port has been removed as the secondary timing reference clock source.    |
| Secondary Reference Clock Provisioned   | The selected port has been designated as the secondary timing reference clock source. |
| SEFS 15 Min                             | The current 15-Min bin of SEFS has crossed the TCA threshold.                         |
| SEFS 1 Day                              | The current 1-Day bin of SEFS has crossed the TCA threshold.                          |
| SEFSS 15 Min                            | The current 15-Min bin of SEFSS has crossed the TCA threshold.                        |
| SEFSS 1 Day                             | The current 1-Day bin of SEFSS has crossed the TCA threshold.                         |
| SES 15 Min                              | The current 15-Min bin of SES has crossed the TCA threshold.                          |
| SES 1 Day                               | The current 1-Day bin of SES has crossed the TCA threshold.                           |
| SESL 15 Min                             | The current 15-Min bin of SESL has crossed the TCA threshold.                         |
| SESL 1 Day                              | The current 1-Day bin of SESL has crossed the TCA threshold.                          |
| SES-LFE 15 Min                          | The current 15-Min bin of SES-LFE has crossed the TCA threshold.                      |
| SES-LFE 1 Day                           | The current 1-Day bin of SES-LFE has crossed the TCA threshold.                       |
| SESP 15 Min                             | The current 15-Min bin of SESP has crossed the TCA threshold.                         |
| SESP 1 Day                              | The current 1-Day bin of SESP has crossed the TCA threshold.                          |
| SES-PFE 15 Min                          | The current 15-Min bin of SES-PFE has crossed the TCA threshold.                      |
| SES-PFE 1 Day                           | The current 1-Day bin of SES-PFE has crossed the TCA threshold.                       |
| SESS 15 Min                             | The current 15-Min bin of SESS has crossed the TCA threshold.                         |

3-14 Alarm description

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| Event                                   | Description  |
|---|--|
| SESS 1 Day                              | The current 1-Day bin of SESS has crossed the TCA threshold.     |
| Software Error has occurred.            | A software error has occurred.                                   |
| SP Could Not Communicate with this Card | The SP circuit pack could not communicate with this card.        |
| Summary TCA 15 Min                      | The current 15-Min bin has crossed the TCA threshold.            |
| Summary TCA 1 Day                       | The current 1-Day bin has crossed the TCA threshold.             |
| Switch to SA severity                   | Protection has caused the alarm severity to change to SA.        |
| Switch to NSA severity                  | Protection has caused the alarm severity to change to NSA.       |
| System Equalization Aborted             | System Equalization was aborted                                  |
| System Equalization Completed           | System Equalization has completed                                |
| System Equalization failed              | System Equalization has failed                                   |
| System Equalization Started             | System Equalization has started                                  |
| UAS 15 Min                              | The current 15-Min bin of UAS has crossed the TCA threshold.     |
| UAS 1 Day                               | The current 1-Day bin of UAS has crossed the TCA threshold.      |
| UASL 15 Min                             | The current 15-Min bin of UASL has crossed the TCA threshold.    |
| UASL 1 Day                              | The current 1-Day bin of UASL has crossed the TCA threshold.     |
| UAS-LFE 15 Min                          | The current 15-Min bin of UAS-LFE has crossed the TCA threshold. |
| UAS-LFE 1 Day                           | The current 1-Day bin of UAS-LFE has crossed the TCA threshold.  |
| UASP 15 Min                             | The current 15-Min bin of UASP has crossed the TCA threshold.    |
| UASP 1 Day                              | The current 1-Day bin of UASP has crossed the TCA threshold.     |
| UAS-PFE 15 Min                          | The current 15-Min bin of UAS-PFE has crossed the TCA threshold. |
| UAS-PFE 1 Day                           | The current 1-Day bin of UAS-PFE has crossed the TCA threshold.  |

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| <b>Event</b>                             | <b>Description</b>  |
|--|---|
| UASS 15 Min                              | The current 15-Min bin of UASS has crossed the TCA threshold. |
| UASS 1 Day                               | The current 1-Day bin of UASS has crossed the TCA threshold.  |
| Unmask BIF Alarms                        | BIF alarms are unmasked.                                      |
| Unmask LOS Alarms                        | LOS alarms are unmasked.                                      |
| Unmask Overhead alarms                   | Overhead alarms are unmasked.                                 |
| Upgrade Backout Completed                | A backout of the upgrade is completed.                        |
| Upgrade Backout Failure                  | A backout of the upgrade has failed.                          |
| Upgrade Backout In Progress              | A backout of the upgrade is in progress.                      |
| Upgrade Backout Started                  | A backout of the upgrade has started.                         |
| Upgrade Backup Load to Server Failed     | The upgrade backup load to the server has failed.             |
| Upgrade Cancel Completed                 | A cancel of the upgrade is completed.                         |
| Upgrade Cancel Failure                   | A cancel of the upgrade has failed.                           |
| Upgrade Cancel In Progress               | A cancel of the upgrade is in progress.                       |
| Upgrade Cancel Started                   | A cancel of the upgrade has started.                          |
| Upgrade Commit Completed                 | A commit of the upgrade is completed.                         |
| Upgrade Commit Failure                   | A commit of the upgrade has failed.                           |
| Upgrade Commit In Progress               | A commit of the upgrade is in progress.                       |
| Upgrade Commit Started                   | A commit of the upgrade has started.                          |
| Upgrade Distribute Completed             | The upgrade distribute is completed.                          |
| Upgrade Distribute Failure               | The upgrade distribute has failed.                            |
| Upgrade Distribute In Progress           | The upgrade distribute is in progress.                        |
| Upgrade Distribute Started               | The upgrade distribute has started.                           |
| Upgrade Restart Completed                | A restart of the upgrade is completed.                        |
| Upgrade Restart Failure                  | A restart of the upgrade has failed.                          |
| Upgrade Restart In Progress              | A restart of the upgrade is in progress.                      |
| Upgrade Restart Started                  | A restart of the upgrade has started.                         |
| Upgrade Transfer Load from Server Failed | The upgrade transfer load from the server has failed.         |

**Table 3-2 (continued)**  
**Optical Metro 5100/5200 events**

| Event                       | Description   |
|-----------------------------|---|
| User Logged Out of System   | A user has logged out of System Manager.  |
| User Login Attempt Failed   | An attempt to log in to System Manager has failed.  |
| User Login Request Received | The System Manager has received a login request.  |
| User Password Change        | User password has changed   |
| User Password Change Failed | User password has failed to change  |
| WTR period cancelled        | “Wait to Restore” protection has cancelled the waiting period.  |
| WTR period expired          | “Wait to Restore” protection has finished waiting and will switch back to the original channel.                                     |
| WTR period started          | “Wait to Restore” protection has switched to the protection channel and has started waiting to switch back to the original channel. |

### Optical Trunk Switch events, autonomous messages and alarms

Table 3-3 lists the event logs that you can view and clear for the Optical Trunk Switch. You can use the Optical Trunk Switch event log to view and clear any event with a date or time stamp.

**Table 3-3**  
**Optical Trunk Switch events**

| Log text   | Description  |
|--|--|
| DWNLD-SW-FAIL  | Reports a failed software download.  |
| DWNLD-SW-SUCC  | Reports a successful software download.  |
| MODE-CHANGE:<br>[to <i>text1</i> , by <i>text 2</i> ]<br><i>text1</i> : AUTO/MAN<br><i>text2</i> : PB/TL-1 | Reports a change in the operation mode (manual or automatic) and how the mode was changed (through faceplate button or TL1 interface). |
| GTW-IP-ADDRESS CHANGED by uid  | Reports that the gateway IP address has been changed and by which user ID.   |
| INT-ERR text   | Reports the occurrence of an internal error.   |
| LOCAL-IP-ADDRESS CHANGED by uid  | Reports that the local IP address has been changed and by which user ID.   |
| LOG-IN: uid  | Reports user IDs that have logged in.  |

**Table 3-3 (continued)**  
**Optical Trunk Switch events**

| Log text   | Description  |
|--|--|
| LOG-OUT: uid   | Reports user IDs that have logged out.   |
| AUTO-LOG-OUT:uid   | Reports users that have been automatically logged out because of a dropped remote connection.  |
| LOGS-DELETED   | Reports the clearance of all the logs stored in the database by request of user (by TL1 command init-log or menu Delete log).  |
| MAJOR-SWITCH:<br>[to <i>text1</i> , by <i>text2</i> ]<br><i>text1</i> : PRI/STNBY<br><i>text2</i> : PB/SENSE/TL-1/FAIL | Reports that the optical switch path is on the primary path or standby path. Also reports whether the change is made by TL1 command, faceplate button, or sense input. |
| PID-CHANGED by uid   | Reports that the PID has been changed and by what user ID.   |
| NETW-IP-MASK CHANGED by uid  | Reports that the IP subnet mask addresses have been defaulted to the factory values by the user.   |
| Factory defaults IP/GTW/MASK addresses   | Reports that the IP gateway and subnetmask addresses have been defaulted to the factory values by the user.  |
| AUTO-SWITCH-BACK-MODE is [] by TL1   | State is ENABLED or DISABLED   |
| AUTO-SWITCH-BACK to PRI initiated by []  | Reports that auto switchback was initiated on local module. Also reports the change is made by a TL-1 (TL1) command or manually (Push button).                         |
| AUTO-SWITCH-BACK to PRI successful   | Reports that auto switchback was successful.   |
| AUTO-SWITCH-BACK to PRI failed   | Reports that auto switchback failed.   |
| AUTO-SWITCH-BACK to PRI indication   | Reports that auto switchback indication was received from a remote card.   |
| TCPIP-NOT-STARTED  | Indicates that TCPIP was not started   |
| ALM-ON-[ <i>textf</i> ] MIN SYS<br><i>text</i> : 48VA / 48VB   | Reports that one of the 48 V power supplies is not connected.  |
| ALM-OFF-[ <i>textf</i> ] MIN SYS<br><i>text</i> : 48VA / 48VB  | Reports that one of the 48 V power supplies has been restored.   |
| ALM-ON-PRI-FAIL MAJ SYS  | Reports that a loss of signal has occurred on the primary path.  |
| ALM-OFF-PRI-FAIL MAJ SYS   | Reports that signal has been restored on the primary path.   |
| ALM-ON-STNBY-FAIL MIN SYS  | Reports that a loss of signal has occurred on the standby path.  |

3-18 Alarm description

**Table 3-3 (continued)  
Optical Trunk Switch events**

| Log text                   | Description  |
|----------------------------|--|
| ALM-OFF-STNBY-FAIL MIN SYS | Reports that signal has been restored on the standby path. |
| ALM-ON-SW-STNBY CRIT SYS   | Reports that the switch position has changed to standby.   |
| ALM-OFF-SW-STNBY CRIT SYS  | Reports that the switch position has changed to primary.   |

Table 3-4 lists the autonomous messages logs that you can view for the Optical Trunk Switch. Autonomous messages can be enabled or disabled.

**Table 3-4  
Optical Trunk Switch autonomous messages**

| Action                          | Autonomous Message                           |
|---------------------------------|--|
| Disable Switch-back             | AUTO-SWITCH-BACK-MODE is DISABLED by TL1     |
| Enable Switch-back              | AUTO-SWITCH-BACK-MODE is ENABLED by TL1      |
| Change mode to manual           | MODE-CHANGE to MAN by PB/TL1                 |
| Change PID                      | PID-CHANGED                                  |
| Change IP address               | LOCAL-IP-ADDRESS-CHANGED by uid              |
| Change gateway address          | GTW-IO-ADDRESS-CHANGED by uid                |
| Log out                         | LOG-OUT:uid                                  |
| Switch to Standby from PRI      | ALM-ON-SW-STNBY CRIT SYS                     |
|                                 | MAJOR-SWITCH to STNBY by PB/TL-1/Sense Input |
| Switch to PRI from Standby      | ALM-OFF-SW-STNBY CRIT SYS                    |
|                                 | AUTO-SWITCH-BACK to PRI initiated by PB/TL-1 |
|                                 | AUTO-SWITCH-BACK to PRI successful           |
| Switch to PRI from Standby Fail | ALM-OFF-SW-STNBY CRIT SYS                    |
|                                 | AUTO-SWITCH-BACK to PRI initiated by PB/TL-1 |
|                                 | ALM-ON-SW-STNBY CRIT SYS                     |
|                                 | AUTO-SWITCH-BACK to PRI failed               |
| If LOS on PRI                   | ALM-ON-PRI-FAIL MAJ SYS                      |
| If signal returned to PRI       | ALM-OFF-PRI-FAIL MAJ SYS                     |
| Software download successful    | DWNLD-SW-SUCC                                |
| Software download failed        | DWNLD-SW-FAIL error                          |

[Table 3-5](#) lists the module alarms that can be raised for the Optical Trunk Switch.

**Table 3-5**  
**Optical Trunk Switch module alarms**

| Alarm           | LED        | Description  |
|-----------------|------------|--|
| 48V Low Voltage | Power A/B  | Power supply A or B is missing.                          |
| Primary Fail    | PRI Fail   | Primary path fails                                       |
| Standby Fail    | STNBY Fail | Standby path fails                                       |
| Major Switch    | N/A        | Optical switch switches position from Primary to Standby |

## Warnings and error messages

The System Manager displays the following categories of warnings and error messages:

- operation error messages
- internal error messages

Operation error messages report on requests for invalid operations. The operation error message normally explains why Optical Metro 5100/5200 software cannot perform the request. You can use this explanation to modify your request as required.

Internal error messages report abnormal exceptions that occur while Optical Metro 5100/5200 software is running. These runtime errors can cause the System Manager session to terminate.

### Operation error messages

The System Manager displays an Operation Error dialog box when Optical Metro 5100/5200 software cannot complete a requested operation. Optical Metro 5100/5200 software cancels these requests and uses the message in the dialog box to explain why it cannot perform the operation.

For example, you cannot take a circuit pack out-of-service when the related facility is in-service. If you try to take a circuit pack out-of-service when the related facility is in-service, the System Manager displays the following message:

The facility associated with this equipment is in-service. You must take the facility out-of-service before attempting this operation.

Operation errors reduce the risk of runtime abnormal exception errors. See [“Internal error messages” on page 3-24](#) for more information about abnormal exception errors.

[Table 3-6](#) lists the messages the System Manager displays in the Operation Error dialog box and provides a brief description for each message. This table lists the messages in functional groups with a key word or phrase emphasized. This emphasis does not appear on the window.

**Table 3-6**  
**Operation error messages**

| Message   | Description  |
|---|--|
| <b>Administrative messages</b>  |  |
| Please choose a <b>catalog</b> file.  | The user clicked the <b>Transfer to Shelf</b> button, before selecting a load library. |
| Problems reading <b>catalog</b> file.   | The user selected an invalid or corrupt catalog file.                                  |
| <b>Catalog</b> file not found.  | The user selected an invalid or corrupt catalog file.                                  |
| Improper extension for <b>catalog</b> file.   | The user selected an invalid or corrupt catalog file.                                  |
| No loads found in <b>catalog</b> file.  | The user selected an invalid or corrupt catalog file.                                  |
| Invalid entry in the <b>catalog</b> file.   | The user selected an invalid or corrupt catalog file.                                  |
| Load referenced in the <b>catalog</b> file exists, but is of the wrong size.  | The user selected an invalid or corrupt catalog file.                                  |
| Please install the Technical <b>Documentation</b> files from the Optical Metro 5200 CD, or insert the Optical Metro 5200 CD in the CD-ROM drive, and try again. | The technical documentation files are not installed.                                   |
| <b>Load</b> referenced does not exist.  | The user selected an invalid or corrupt catalog file.                                  |
| <b>Login</b> failed.  | Unsuccessful login attempt.  |
| <b>Circuit pack messages – OCI</b>  |  |
| A <b>Bit Rate</b> and Protocol is required when provisioning an OCI circuit pack.   | The user tried to provision an OCI circuit pack before setting the bit rate attribute. |
| <b>Circuit pack messages – OCLD</b>   |  |
| A <b>Band</b> is required when provisioning an OCLD circuit pack.   | The user tried to provision an OCLD circuit pack before setting the band attribute.    |
| A <b>Channel</b> is required when provisioning an OCLD circuit pack.  | The user tried to provision an OCLD circuit pack before setting the channel attribute. |
| <b>Circuit pack messages – OCM</b>  |  |

**Table 3-6 (continued)**  
**Operation error messages**

| <b>Message</b>   | <b>Description</b>   |
|--|--|
| The <b>configuration data</b> on the OCM circuit pack has not been recovered.                | The user tried a configuration request before the System Manager recovered the configuration data from the OCM circuit pack.               |
| The <b>data backup</b> operation to the OCM circuit pack failed. Please retry your request.  | The backup operation to the OCM circuit pack failed. This type of failure can occur if the OCM and SP circuit packs are not communicating. |
| This operation cannot be performed because the mate OCM circuit pack is <b>unavailable</b> . | The user tried to delete an OCM circuit pack or take an OCM circuit pack out-of-service when the mate is not available.                    |
| <b>Circuit pack messages – OMX</b>   |  |
| A <b>Band</b> is required when provisioning an OMX.  | The user tried to provision an OMX before setting the band attribute.  |
| A <b>Channel</b> is required when provisioning an OMX.                                       | The user tried to provision an OMX before setting the channel attribute.   |
| <b>Commissioning messages</b>  |  |
| <b>Area ID IP</b> is invalid.  | The user tried to commission a new shelf or edit the commissioning data using an invalid area ID IP.                                       |
| <b>Cost</b> must be a number between 0 - n.  | The user tried to commission a new shelf or edit the commissioning data with an invalid cost.  |
| Invalid <b>date time</b> .   | The user tried to commission a new shelf or edit the commissioning data with an invalid date and time.                                     |
| Invalid <b>day</b> .   | The user tried to commission a new shelf or edit the commissioning data with an invalid day.   |
| This shelf is in a <b>decommissioned state</b> . Only admin users can commission a shelf.    | A user different from the 'admin' user is logged into a decommissioned shelf.  |
| <b>Default Gateway IP</b> is invalid.  | The user tried to commission a new shelf or edit the commissioning data using an invalid gateway IP.                                       |
| <b>DHCP IP</b> is invalid.   | The user tried to commission a new shelf or edit the commissioning data using an invalid DHCP IP.  |
| <b>Hello interval</b> must be a number between 0 - n.  | The user tried to commission a new shelf or edit the commissioning data using an invalid hello interval.                                   |
| Invalid <b>hour</b> .  | The user tried to commission a new shelf or edit the commissioning data using an invalid hour.   |

**Table 3-6 (continued)**  
**Operation error messages**

| <b>Message</b>  | <b>Description</b>  |
|---|---|
| A conflict exists between Shelf <b>IP address</b> , Net mask IP address, and DHCP given IP address. Check the entered values and try again. | The user tried to commission a new shelf or edit the commissioning data when a conflict in IP addresses exists. |
| Invalid <b>minute</b> .   | The user tried to commission a new shelf or edit the commissioning data using an invalid minute.                |
| Invalid <b>month</b> .  | The user tried to commission a new shelf or edit the commissioning data using an invalid month.                 |
| <b>Net mask</b> cannot be empty.  | The user tried to commission a new shelf or edit the commissioning data before identifying the net mask.        |
| <b>Net mask IP</b> is invalid.  | The user tried to commission a new shelf or edit the commissioning data using an invalid net mask IP.           |
| <b>Network name</b> cannot be empty.  | The user tried to commission a new shelf or edit the commissioning data before setting the network name.        |
| <b>Primary node IP</b> cannot be empty.   | The user tried to commission a new shelf or edit the commissioning data before identifying the primary node IP. |
| <b>Primary node IP</b> is invalid.  | The user tried to commission a new shelf or edit the commissioning data using an invalid primary node IP.       |
| <b>Retransmit interval</b> must be a number between 0 - n.  | The user tried to commission a new shelf or edit the commissioning data using an invalid retransmit interval.   |
| <b>Router</b> must be a number between 0 - 255.   | The user tried to commission a new shelf or edit the commissioning data using an invalid router.                |
| <b>Router dead interval</b> must be a number between 0 - n.   | The user tried to commission a new shelf or edit the commissioning data using an invalid router dead interval.  |
| Invalid <b>second</b> .   | The user tried to commission a new shelf or edit the commissioning data using an invalid second.                |
| <b>Shelf ID</b> cannot be empty.  | The user tried to commission a new shelf or edit the commissioning data before setting the shelf ID.            |
| <b>Shelf IP</b> cannot be empty.  | The user tried to commission a new shelf or edit the commissioning data before identifying shelf IP.            |
| <b>Commissioning messages</b>   |   |

**Table 3-6 (continued)**  
**Operation error messages**

| <b>Message</b>  | <b>Description</b>   |
|---|--|
| <b>Shelf IP</b> is invalid.   | The user tried to commission a new shelf or edit the commissioning data using an invalid shelf IP.   |
| <b>Shelf name</b> cannot be empty.  | The user tried to commission a new shelf or edit the commissioning data before setting the shelf name.   |
| <b>Site name</b> cannot be empty.   | The user tried to commission a new shelf or edit the commissioning data before setting the site name.  |
| <b>Site ID</b> cannot be empty.   | The user tried to commission a new shelf or edit the commissioning data before setting the site ID.  |
| <b>Site ID</b> must be an integer that is greater than 0.   | The user tried to commission a new shelf or edit the commissioning data before setting the Site ID to an integer that is greater than 0.   |
| <b>Transit delay</b> must be a number between 0 - n.  | The user tried to commission a new shelf or edit the commissioning data using an invalid transit.  |
| Invalid <b>year</b> , please enter a year between 1990 and 2030.  | The user tried to commission a new shelf or edit the commissioning data using an invalid year.   |
| <b>Loopback messages</b>  |  |
| This facility is not associated with a <b>connection</b> . You must connect this facility before establishing a loopback. | The user tried to configure a loopback test on an unconnected facility.  |
| The <b>facility</b> is already in loopback.   | The user tried to operate on a facility that is in loopback.   |
| The <b>facility</b> is not in loopback.   | The user tried to perform a loopback operation on a facility that is not in loopback. This message is an exceptional error message, because the GUI controls the loopback operations, which are disabled if the facility is not in loopback. |
| Change the Loopback option to None and click <b>Apply</b> , before changing the Facility State to <b>IS</b> .             | The user tried to put a facility in-service that is in the loopback state. A facility must be out-of-service to be in loopback.  |
| Loopback can only be active when the facility is <b>OOS</b> .   | The user tried to activate a loopback test on an in-service facility.  |
| <b>Password messages</b>  |  |
| <b>Admin</b> password is incorrect.   | This error occurs on a password change operation.  |
| New password must be at least 8 <b>characters</b> long.   | This error occurs on a password change operation.  |

**Table 3-6 (continued)**  
**Operation error messages**

| <b>Message</b>   | <b>Description</b>  |
|--|---|
| Password cannot be longer than 8 <b>characters</b> .   | The user tried to commission a new shelf or edit the commissioning data when the password is invalid.   |
| New password must be the same as the <b>confirmed</b> password.  | This error occurs on a password change operation.   |
| File transfer cannot proceed because the shelf password has been changed. You must close and restart System Manager to continue with the <b>Software Upgrade</b> . | The password on the shelf has changed because the user is logged into the System Manager. The user must restart the System Manager to log in with the new password. |
| <b>Provisioning messages</b>   |   |
| The <b>band</b> identifier is invalid.   | The user entered an invalid band.   |
| Connection <b>channel name</b> cannot be empty.  | The user tried to provision a connection before setting the channel name attribute.   |

### **Internal error messages**

The System Manager uses operation error messages and cancels invalid operation requests to minimize runtime abnormal exception errors. See [“Operation error messages” on page 3-19](#) for more information.

Runtime errors can occur when the software finds conditions that are unexpected or invalid after a process has started. Unexpected or invalid results that occur while Optical Metro 5100/5200 software is running cause runtime abnormal exception errors. When these errors occur, the System Manager displays an Internal Error dialog box and a related message. If the abnormal exception results in a fatal error, the System Manager session terminates.

[Table 3-7](#) lists the messages the System Manager displays in internal error dialog boxes and provides a brief description for each message. This table lists the messages in functional groups with a key word or phrase emphasized. This emphasis does not appear on the window.

**ATTENTION**

The messages in the General Errors group occur when the SP circuit pack identifies transient errors that can cause the System Manager session to terminate. If the same general error occurs repeatedly, use the information in the System Manager logs to analyze and solve the problem.

**Table 3-7**  
**Internal messages**

| Message   | Description  |
|---|--|
| <b>Connection details</b>   |  |
| Failed to retrieve <b>address</b> .   | The software did not complete the user request to retrieve the addresses for the shelves in the network.   |
| Could not add <b>channel connection</b> to ____.                            | The software did not complete the user request to add a new connection.  |
| Failed to delete <b>channel connection</b> .                                | The software did not complete the user request to delete a connection.   |
| Failed to delete <b>channel connection</b> on peer.                         | The software did not complete the user request to delete a peer connection.  |
| Failed to set channel connection details on ____.                           | The software did not complete the user request to modify connection details.   |
| Failed when getting <b>connection details</b> .                             | The software did not complete the user request to retrieve the connection details.   |
| Failed to get remaining <b>connection details</b> .                         | The software did not complete the user request to retrieve the connection details.   |
| Cannot connect to <b>host shelf</b> . The System Manager will now shutdown. | The shelf did not accept the connection from the System Manager. This error normally occurs when you try to connect a ninth System Manager to a single shelf. Optical Metro 5100/5200 software supports a maximum of eight System Manager connections per shelf. |
| Cannot find <b>terminal shelf</b> .   | The software did not complete the user request to add a new connection.  |
| <b>Incorrect slot</b> for adding connections.                               | The software did not complete the user request to add a new connection.  |
| <b>Incorrect slot</b> to get connection details.                            | The software did not complete the user request to retrieve the connection details.   |
| <b>Incorrect slot</b> for setting connection details.                       | The software did not complete the user request to modify connection details.   |

**Table 3-7 (continued)**  
**Internal messages**

| <b>Message</b>  | <b>Description</b>  |
|---|---|
| Unable to determine <b>internal address</b> for ____.   | A fatal condition occurred when the System Manager tried to find the address of a shelf.  |
| <b>Mismatch</b> between number sent and number received.  | The software detected an error when trying to communicate with the shelf. Restart the System Manager.   |
| <b>Modifying</b> this data is not supported. You should delete this entry and then add a new entry with the correct data. | A user tried to modify an entry in the external manager table.  |
| <b>OCI</b> required for this connection is not provisioned on ____.   | The software did not complete the user request to add a new connection.   |
| <b>OCLD</b> required for this connection is not provisioned on ____.  | The software did not complete the user request to add a new connection because the OCLD circuit pack is not provisioned.                                |
| Required protection <b>OCLD</b> is not provisioned on ____.   | The software did not complete the user request to add a new connection because the OCLD circuit pack is not provisioned correctly.                      |
| Protected channel does not have valid <b>OCLD slot</b> number.  | The software did not complete the user request to retrieve connection details on a protected connection.  |
| Cannot find <b>OADM shelf/terminal shelf</b> .  | The software did not complete the user request to add a new connection.   |
| Unable to rewrite <b>trap destination</b> info on host shelf.   | The host shelf was restarted but the System Manager cannot write its address into the trap destination table for the shelf. Restart the System Manager. |
| <b>General errors</b>   |   |
| The <b>bit-rate parameter</b> is invalid.   | The software did not complete the user request because the selected bit rate is not valid. Check that you selected the correct bit-rate.                |
| The <b>edit request</b> is invalid.   | The software did not complete the user request because the edit request is not valid.   |
| The given <b>endpoint</b> is already connected.   | The software did not complete the user request because the given endpoint is already connected.   |
| The given <b>endpoint</b> does not exist.   | The software did not complete the user request because the given endpoint does not exist.   |

**Table 3-7 (continued)**  
**Internal messages**

| <b>Message</b>  | <b>Description</b>   |
|---|--|
| This <b>entity</b> does not support the desired operation.                                | The software did not complete the user request because the entity does not support the desired operation.                    |
| The <b>entity</b> is already in the specified state.                                      | The software did not complete the user request because the entity is already specified.                                      |
| The <b>entity</b> is not in a valid state.  | The software did not complete the user request because the entity is not in a valid state.                                   |
| An <b>input parameter</b> is invalid.   | The software did not complete the user request because the input is not a valid parameter.                                   |
| The <b>protocol</b> is invalid.   | The software did not complete the user request because the protocol is not supported.  |
| The <b>protection group</b> is not locked out.  | The software did not complete the user request because the protection group is not locked out.                               |
| The <b>protection group</b> is not forced out.  | The software did not complete the user request because the protection group is not forced out.                               |
| The <b>protection operation</b> was performed on the wrong direction.                     | The software did not complete the user request because the protection operation was performed on the wrong direction.        |
| The <b>supporting equipment</b> is not in a valid state for this operation.               | The software did not complete the user request because the supporting equipment is not in a valid state for this operation.  |
| The <b>supporting equipment</b> is not available for this operation.                      | The software did not complete the user request because the supporting equipment is not available for this operation.         |
| <b>Network discovery</b>  |  |
| Please check your <b>commissioning data</b> .   | The software did not discover the network during an internal check after a user logged in.                                   |
| Network <b>discovery</b> unsuccessful - halting operation.                                | A fatal error occurred when the software tried to discover the network after the user logged in. Restart the System Manager. |
| Failed to contact <b>host shelf</b> during network discovery.                             | The software cannot contact the host shelf following a request to rediscover the network.                                    |
| Could not find the <b>host shelf address</b> _____. Please check your commissioning data. | The software did not discover the network during an internal check after a user logged in.                                   |
| Could not find <b>host shelf identifier</b> ____ in the host shelf list.                  | The software did not discover the host shelf during an internal check after a user logged in.                                |

**Table 3-7 (continued)**  
**Internal messages**

| <b>Message</b>   | <b>Description</b>   |
|--|--|
| <b>Host shelf identifier:</b> ___ differs from the identifier defined in the host shelf list: ____. Please check your commissioning data.      | The software discovered a conflict in commissioning data during an internal check after a user logged in.  |
| The <b>host shelf identifier</b> is not unique (found ___ other occurrences). You must recommission this shelf with a unique shelf identifier. | The software discovered a conflict in commissioning data during an internal check after a user logged in.  |
| The <b>host shelf list</b> is empty. Please confirm connectivity with the primary node.  | The software did not discover the network during an internal check after a user logged in.   |
| <b>Internal task</b> failed to initialize.   | An internal task cannot setup the necessary resources. Restart the System Manager.   |
| The <b>IP address</b> for the host shelf (___) is not unique. You must recommission this shelf with a unique IP address.                       | The software discovered a conflict in commissioning data during an internal check after a user logged in.  |
| Failed to retrieve <b>list of shelves</b> .  | The software did not discover the network during an internal check after a user logged in.   |
| There are ___ shelves defined as the <b>primary node</b> . Please check your commissioning data.   | The software discovered a conflict in commissioning data during an internal check after a user logged in.  |
| <b>Passwords</b>   |  |
| Could not determine <b>primary shelf</b> to change password.   | The software did not complete the user request to change the password.   |
| <b>Shelf password</b> has changed. You must exit and login with the new password to complete this operation.                                   | The user tried to change commissioning information about a shelf, or remove a shelf from the primary shelf list after another user changed the account password. |
| <b>Protocols – open shortest path first</b>  |  |
| Failed to read OSPF <b>details</b> .   | The software did not complete the user request to retrieve advanced communications settings.   |
| <b>Error</b> while setting OSPF details.   | The software did not complete the user request to retrieve advanced communications settings.   |
| Failed to read OSPF detail input parameter:___.  | The software did not complete the user request to retrieve advanced communications settings.   |
| Null message reading OSPF details.   | The software did not complete the user request to retrieve advanced communications settings.   |

**Table 3-7 (continued)**  
**Internal messages**

| Message  | Description   |
|--|---|
| <b>Protocols – simple network management</b>   |   |
| A <b>communications error</b> has occurred in the system. Please retry your request (<ERROR CODE>).<br>The <ERROR CODE> is a number between 100 and 107. | An SNMP protocol error occurred.<br><br>The error code (100 - 107) indicates the error level from the SNMP stack. |
| SNMP failed when getting <b>default shelf name</b> .   | The software did not refresh the network and retrieve the name of the host shelf.                                 |
| SNMP failed when getting <b>shelf name</b> .   | The software did not refresh the network and retrieve the name of the host shelf.                                 |
| <b>Provisioning details</b>  |   |
| Failed to retrieve <b>equipment details</b> .  | The software did not complete the user request to retrieve equipment details.                                     |
| Null message retrieving <b>equipment details</b> .   | The software did not complete the user request to retrieve equipment details.                                     |
| Failed to set <b>equipment details</b> .   | The software did not complete the user request to retrieve equipment details.                                     |
| Incorrect circuit pack <b>parameters</b> .   | The software did not complete the user request to manually provision equipment.                                   |
| Failed to <b>add equipment</b> .   | The software did not complete the user request to manually provision equipment.                                   |
| Failed to <b>delete equipment</b> .  | The software did not complete the user request to delete equipment provisioning information.                      |
| Failed during <b>download progress command</b> .   | The software did not complete the user request to monitor the progress of a download.                             |
| Failed to retrieve <b>facility details</b> .   | The software did not complete the user request to retrieve facility details.                                      |
| Null message retrieving <b>facility details</b> .  | The software did not complete the user request to retrieve facility details.                                      |
| Failed to set <b>facility details</b> .  | The software did not complete the user request to modify facility details.  |
| Failed to add a <b>facility</b> .  | The software did not complete the user request to add a facility.   |
| Failed to delete a <b>facility</b> .   | The software did not complete the user request to delete a facility.  |

**Table 3-7 (continued)**  
**Internal messages**

| <b>Message</b>  | <b>Description</b>   |
|---|--|
| Failed to retrieve <b>network name</b> .                            | The software did not refresh the network and retrieve the name of the host shelf.                            |
| Failed to <b>restart</b> shelf.                                     | The software did not complete the user request to restart the shelf.   |
| Failed to retrieve <b>software version</b> .                        | The software did not complete the user request to retrieve the software version.                             |
| Could not retrieve network <b>time and date</b> from primary shelf. | The software did not complete the user request to retrieve the network time and date from the primary shelf. |
| Failed to retrieve shelf <b>time</b> .                              | The software did not complete the user request to retrieve the network time from the primary shelf.          |
| Could not determine primary shelf to set <b>time</b> .              | The software did not complete the user request to change the time on the primary shelf.                      |
| Could not set <b>time</b> on primary shelf.                         | The software did not complete the user request to change the time on the primary shelf.                      |
| Failed to set <b>upgrade</b> action.                                | The software did not complete the user request to upgrade a shelf.   |
| Failed to set <b>upgrade version</b> .                              | The software did not complete the user request to set the version of the software.                           |
| <b>Shelf list</b>   |  |
| Failed to retrieve <b>list of shelves</b> .                         | The software did not complete the user request to retrieve, modify or remove a shelf from the shelf list.    |
| Could not determine <b>primary shelf</b> to retrieve shelf list.    | The software did not complete the user request to retrieve the shelf list from the host shelf.               |
| Could not determine <b>primary shelf</b> to change shelf list.      | The software did not complete the user request to retrieve, modify or remove a shelf from the shelf list.    |
| Failed to <b>remove shelf</b> from shelf list on primary.           | The software did not complete the user request to remove a shelf from the shelf list.                        |
| Failed when <b>searching</b> for shelf to remove.                   | The software did not complete the user request to remove a shelf from the shelf list.                        |
| Invalid <b>shelf list</b> .   | The software did not complete the user request to modify the shelf list.                                     |

**Table 3-7 (continued)**  
**Internal messages**

| Message   | Description   |
|---|---|
| Failed to change <b>shelf list</b> .                          | The software did not complete the user request to modify the shelf list.              |
| Invalid <b>shelf number</b> .                                 | The software did not complete the user request to run a command.                      |
| Could not find <b>target shelf</b> to remove from shelf list. | The software did not complete the user request to remove a shelf from the shelf list. |

## Call for help

If you cannot solve a problem using the *Trouble Clearing and Alarm Reference Guide*, contact Nortel Networks [Technical assistance service telephone numbers](#).

You can find information required for contacting [Technical assistance service telephone numbers](#) in the “[About this document](#)” section at the beginning of this book.

To minimize the amount of time it takes to respond to your problem, make sure you have the following information before you contact Technical Support:

- the product engineering code (PEC) and revision of the Nortel Networks device
- the installed version of operating system software
- the model numbers/technical specifications of any equipment connected to the Optical Metro 5100/5200
- a description of the problem
- the type of equipment (including software revisions, where relevant) installed at each end of the connection on which you encountered the problem and a diagram of the network
- hardware and software configuration details, including network information
- your fax number and e-mail address



# Installation troubleshooting procedures

Use the procedures in this chapter to test system components, component specifications, component connectivity, and intershelf connections at the rack, site, and system levels.

## Requirements

Table 4-1 lists the tools and materials required for the test procedures.

**Table 4-1**  
**Tools and materials required for test procedures**

| Item   | Quantity    | Supplied |
|--|-------------|----------|
| Antistatic wrist strap   | 1           | no       |
| Safety goggles   | 1           | no       |
| Inline adapter (FC-FC)   | 1           | no       |
| Optical fiber cleaning kit   | 1           | no       |
| Fiber inspection scope   | 1           | no       |
| Hybrid adapters <ul style="list-style-type: none"> <li>• FC-FC</li> <li>• FC-ST</li> <li>• FC-SC</li> <li>• SC-ST</li> </ul> | as required | no       |
| Optical power meter (OPM) with an FC connector if OCLDs with FC connectors are under test                                    | 1           | no       |
| Optical power meter (OPM) with an LC connector if OCLDs with LC connectors, OTRs, or Muxponders are under test               | 1           | no       |
| Variable optical attenuator (VOA) with SC-SC connectors  | 1           | no       |

**Table 4-1 (continued)**  
**Tools and materials required for test procedures**

| Item  | Quantity  | Supplied |
|---|-----------|----------|
| Variable optical attenuator (VOA) with FC-FC connectors if OCLDs with FC connectors are under test                      | 1         | no       |
| Variable optical attenuator (VOA) with LC-LC connectors if OCLDs with LC connectors, OTRs, or Muxponders are under test | 1         | no       |
| Optical patch cord (SC-SC for most OCIs, FC-FC for OCI 2.5 Gbit/s, LC-LC for OTR or Muxponder)                          | 2         | no       |
| Muxponder optical SFP LC connectors   | as needed | no       |
| Optical patch cord with SC-SC connectors  | 1         | no       |
| Optical test set  | 1         | no       |
| Key to adjust the optical attenuator of the VOA   | 1         | no       |

**Before you begin**

Many test procedures are performed during system installation and commissioning, and can be found in *Testing and Equalization Procedures*, 323-1701-222. Additional test procedures are presented in this document, because you may need to perform them after system installation—for example, during a system hardware upgrade or during a troubleshooting procedure.



**CAUTION**

**Risk of loss of traffic**

All procedures in this chapter involve disconnecting fibers, which will disrupt traffic on an In-Service system. Ensure that traffic is protected when applicable (it may be necessary to use external equipment for protection).

## Precautions

### General safety notices

**DANGER****Risk of personal injury**

Use of controls, adjustments, or procedures other than those described in this documentation can result in exposure to hazardous invisible radiation.

**CAUTION****Risk of equipment damage**

Only qualified personnel should install Optical Metro 5100/5200 equipment.

**CAUTION****Risk of equipment damage**

Before attempting any of the following tests, make sure that you completely read and understand the procedure that you are about to perform.

**CAUTION****Risk of equipment damage**

Do not use the RJ45 panel connectors (10Base-T 1X and 10Base-T 2X) as telephone jacks.

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "[Cleaning connectors](#)", in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

## Laser safety notices



### CAUTION

#### Risk of personal injury

Do not look into the end of connectors on fiber-optic cables or into connectors on the faceplates of installed circuit cards. The light source used in fiber-optic devices can damage your eyes.



### CAUTION

#### Risk of personal injury

Infrared laser light is not visible and can burn your skin. The lasers used in this equipment give off infrared light. You cannot see or feel the effect of receiving the light on your skin.

## Laser safety considerations



### CAUTION

#### Risk of laser radiation

The Optical Metro 5100/5200 operates up to a Hazard Level of  $k \times 3A$  (IEC 60825-2:2000) or 1M (IEC 60825-2:2004). Use only viewing instruments with proper optical attenuation.

Observe the following precautions to ensure safe operation and site compliance with EN60825-1 and EN60825-2

- Do not look at the OMX, ECT, PBE, APBE, or OFA optical fibers without visual aids. There is a label warning of invisible laser radiation on all OMXs, ECTs, PBEs, APBEs, and OFAs.
- The mechanical characteristics of the optical fiber connecting the OMX, ECT, APBE, or PBE and the optical fiber distribution panel must comply with IEC794-2.
- Follow sound cable management practises to avoid applied stress or cut optical fibers. Do not use cable ties to secure optical fibers to the system rack.
- The optical fiber patch panel must carry a class 3A warning label, and must require the use of a tool to access the optical fiber connections. In addition, attach a laser safety tag to all optical fibers that connect to client subtending equipment. [Figure 4-1](#) shows the laser safety tag.

**Figure 4-1**  
**Laser safety tag**

OM03071



## Component handling precautions

### Handling circuit packs

|  |  |
|--|--|
|  | <p><b>CAUTION</b><br/><b>Risk of equipment damage</b><br/>Make sure you know how to handle electronic components correctly before you begin installation procedures. Incorrect handling can cause damage to static-sensitive components.</p> |
|--|--|

Circuit packs that are not in use should not be stored in the shelf.

If a circuit pack is removed from a shelf, a filler card must be installed in the slot. In order for the forced-air cooling of the shelf to function efficiently, filler cards are required for all slots that do not contain a circuit pack.

To avoid possible damage to circuit packs by electrostatic discharge (ESD), follow these precautions.

- Always plug the wrist strap cable into the ESD jack in the shelf maintenance panel before you put on the wrist strap.
- Always wear grounded antistatic wrist and heel straps when handling circuit packs.
- Keep circuit packs in their antistatic bags until you are ready to install them.
- Remove circuit packs from their antistatic bags and install them directly into the shelf. Do not pass circuit packs to another person.
- If you need to put a circuit pack down, put the pack back into its antistatic bag first.
- Handle circuit packs by their edges only. Do not touch the electronic components or any exposed printed circuitry.
- Limit your movement during installation to reduce the build up of static electricity.

### Handling fiber-optic cable



**DANGER**

**Risk of personal injury**

Do not look into the end of fiber-optic cable. The light source used in fiber-optic cables can damage your eyes.



**CAUTION**

**Risk of equipment damage**

Make sure you know how to handle fiber-optic cable correctly. Incorrect handling can cause damage to the glass optical fiber. Do not compress fiber-optic cable. If fiber-optic cable is in the same tray or duct with large, heavy electrical cables, it can be damaged by the weight of the electrical cable.

Although the glass optical path of fiber-optic cable is protected with reinforcing material and plastic insulation, follow these precautions to avoid damaging the glass optical fiber.

- Do not kink, knot, or vigorously flex the cable.
- Do not bend the cable to less than a 40 mm (1.5-inch) radius.
- Do not stand on fiber-optic cable; keep the cable off the floor.
- Do not pull excessively on any fiber-optic cable.
- Do not allow any static load on any section of the cable.
- Make sure you put protective caps on fiber-optic connectors that are not in use.
- Store available fiber-optic patch cords in a cabinet, on a cable rack, or flat on a shelf.
- Do not use cable ties to secure optical fiber to racks or other equipment.

Overstressing fiber-optic cable might not result in immediate failure of the cable but frequent overstressing can cause progressive degeneration of the cable.

If you suspect damage to a fiber-optic cable, either through known mishandling or by indication of an abnormally high error rate in one direction, reverse the cable pairs. If the high error rate appears in the other direction, replace the cable.

## Procedure list

Table 4-2 lists the procedures in this chapter.

**Table 4-2**  
**Procedures in this chapter**

| Procedure   | Page | Comments   |
|---|------|--|
| 4-1 Testing OCLD, OTR, or Muxponder line-side continuity  | 4-8  | Required for all upgraded or replaced OCLD, OTR, and Muxponder circuit packs.  |
| 4-2 Testing OCI to OCLD, OTR client-side to OTR client-side, or Muxponder client-side to Muxponder client-side continuity | 4-14 | Required for all upgraded or installed OCI, OCLD, OTR, and Muxponder circuit packs.  |
| 4-3 Testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity  | 4-22 | Required to confirm signal continuity from OCI input to OCI output, from OTR client-side input to OTR client-side output, or from Muxponder client-side input to Muxponder client-side output. |
| 4-4 Testing graduated loopback  | 4-31 | Recommended for locating faults without removing or replacing network equipment.   |

## Procedure 4-1 Testing OCLD, OTR, or Muxponder line-side continuity

---

Use this procedure to confirm that the optical transmit power as seen in the Equipment/Facilities screen in System Manager is correct on an installed OCLD, OTR, or Muxponder circuit pack.

The objective of this test is to

- verify the correct operation of the indicator lamps of the circuit pack
- verify the correct operation of the Loss of Signal (LOS) circuit and indicator lamp
- verify that the optical transmit power is correct on an OCLD circuit pack or verify that the optical transmit power on the line-side interface is correct on an OTR or Muxponder circuit pack

You must perform the line-side continuity test on replaced or upgraded OCLD, OTR, or Muxponder circuit packs.



### **CAUTION**

#### **Risk of loss of traffic**

This procedure involves disconnecting fibers, which will disrupt traffic on an in-service system. Ensure that your traffic is protected when applicable (it may be necessary to use external equipment for protection).

## Requirements

Before you do the line-side continuity test, make sure that

- the OADM shelf you are testing is powered on and has a minimum shelf configuration of one SP, and one OCLD, OTR, or Muxponder, an OMX, and the shelf database cards (OCMs in slots 9 and 10 for the Optical Metro 5200, and any circuit pack in slot 1 to 4, or 6 for the Optical Metro 5100).
- you are logged in to the System Manager as an Admin level user.

[Table 4-3](#) lists the tools and materials required for testing OCLD, OTR, or Muxponder line-side continuity.

—continued—

Procedure 4-1 (continued)

**Testing OCLD, OTR, or Muxponder line-side continuity****Table 4-3**  
**Tools and materials required for the line-side continuity test**

| Item  | Quantity  | Supplied |
|---|-----------|----------|
| Antistatic wrist and heel straps  | 1         | no       |
| Optical power meter (OPM) with an FC connector if OCLDs with FC connectors are under test                               | 1         | no       |
| Optical power meter (OPM) with an LC connector if OCLDs with LC connectors, OTRs, or Muxponders are under test          | 1         | no       |
| Variable optical attenuator (VOA) with FC-FC connectors if OCLDs with FC connectors are under test                      | 1         | no       |
| Variable optical attenuator (VOA) with LC-LC connectors if OCLDs with LC connectors, OTRs, or Muxponders are under test | 1         | no       |
| Muxponder optical SFP LC connectors   | as needed | no       |
| Fiber cleaning kit  | 1         | no       |
| Fiber inspection scope  | 1         | no       |

Before you make the test connections, clean the connectors of the circuit packs, optical patch cords, and test set equipment. Follow procedures in the [“Cleaning connectors”](#) chapter in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201. The test results can be unreliable if the connectors and patch cords are dirty.

—continued—

Procedure 4-1 (continued)

**Testing OCLD, OTR, or Muxponder line-side continuity**

---

**Precautions**



**CAUTION**

**Risk of personal injury**

Do not look into the end of connectors on fiber-optic cables or into connectors on the faceplates of installed circuit packs. The light source used in fiber-optic devices can damage your eyes.



**CAUTION**

**Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)”, in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**Expected results**

The indicator lamps on the installed OCLD, OTR, or Muxponder circuit pack are operating correctly. (The STATUS and LOS lamps are on if the facility is in-service and is not part of a channel assignment. If the facility is part of a channel assignment, both the STATUS and ACTIVE indicator lamps are on.)

The optical transmit power for the OCLD circuit pack is within acceptable levels or that the optical transmit power on the line-side interface for the OTR or Muxponder circuit pack is within acceptable levels.

**Action**

---

| <b>Step</b> | <b>Action</b>   |
|-------------|---|
| 1           | Make sure that you clean all fibers and components before and after the steps in this procedure. For information on cleaning, see “ <a href="#">Cleaning connectors</a> ” in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.  |
| 2           | Observe the indicator lamps on the installed OCLD, OTR, or Muxponder circuit pack.<br><br><b>Note:</b> When an in-service OCLD, OTR, or Muxponder is correctly installed in a powered shelf with no fibers connected to its ports, the STATUS and LOS lamps are on if the facility is in-service and is not part of a channel assignment. If the facility is part of a channel assignment, both the STATUS and ACTIVE indicator lamps are on. |

—continued—

Procedure 4-1 (continued)

**Testing OCLD, OTR, or Muxponder line-side continuity**

| Step | Action   |
|------|--|
| 3    | Remove the protective cap from the OCLD Tx port connector, or the OTR or Muxponder LINE Tx port connector and clean the port connector. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.  |
| 4    | Uncap and clean both VOA fiber connectors. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.   |
| 5    | Insert a VOA between the OCLD Tx port connector, or the OTR or Muxponder LINE Tx port connector and the optical power meter (OPM), which must be set to 1550 nm. See <a href="#">Figure 4-2 on page 4-12</a> .   |
| 6    | Adjust the VOA to obtain a reading of –15 dBm at the OPM.<br><b>Note:</b> To increase the attenuation, turn the screw clockwise. To decrease the attenuation, turn the screw counter-clockwise.  |
| 7    | Remove the protective cap from the OCLD Rx port, or the OTR or Muxponder LINE Rx port and clean the port connector. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.  |
| 8    | Disconnect the VOA connector from the OPM and insert the VOA connector into the OCLD Rx port, or the OTR or Muxponder LINE Rx port. See <a href="#">Figure 4-3 on page 4-13</a> .<br><i>The LOS indicator lamp turns off on the OCLD or the LINE LOS indicator lamp turns off on the OTR or Muxponder. If you are logged in to the System Manager you see the LOS alarm clear. An Rx alarm indicator signal (Rx AIS) is raised when the fiber is connected to the OCLD Rx port or the OTR or Muxponder LINE Rx port.</i><br><b>Note:</b> Make sure that you clean the fiber before inserting the connector into the OCLD, OTR, or Muxponder. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201. |

—continued—

Procedure 4-1 (continued)

**Testing OCLD, OTR, or Muxponder line-side continuity**

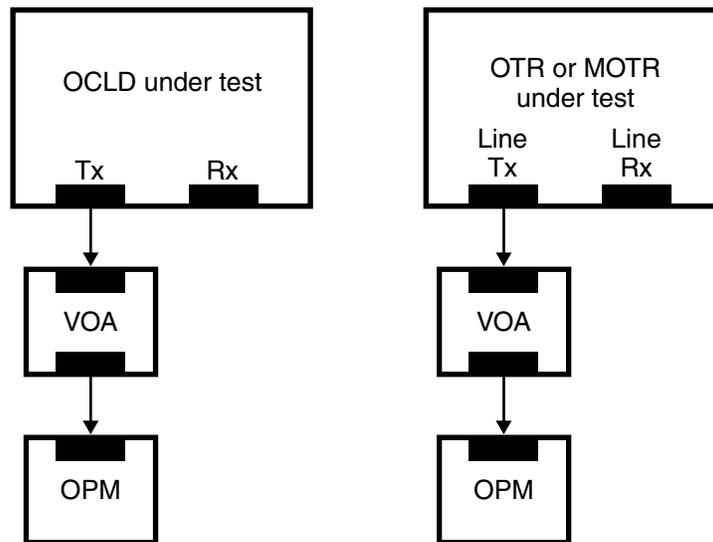
| Step | Action |
|------|--------|
|------|--------|

**Verifying optical transmit power**

- 9 In the System Manager, select the Equipment tab.
- 10 Select the Facilities tab.
- 11 From the displayed list, verify the Tx (dBm) level for the OCLD facility, or OTR or Muxponder line-side facility. For acceptable power levels, see *Technical Specifications*, 323-1701-180.

**Figure 4-2**  
**Equipment hook-up for the OCLD, OTR, or Muxponder line-side continuity test on an Optical Metro 5100/5200 - Part A**

OM2689t

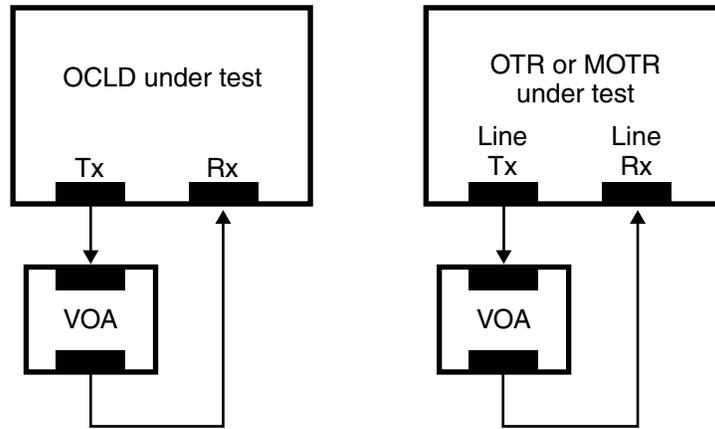


—continued—

**Procedure 4-1 (continued)**  
**Testing OCLD, OTR, or Muxponder line-side continuity**

**Figure 4-3**  
**Equipment hook-up for the OCLD, OTR, or Muxponder line-side continuity test on an Optical Metro 5100/5200 - Part B**

OM2690t



—end—

## Procedure 4-2

# Testing OCI to OCLD, OTR client-side to OTR client-side, or Muxponder client-side to Muxponder client-side continuity

---

Use this procedure to confirm the correct signal flow from:

- an OCI circuit pack to its corresponding OCLD circuit pack and back
- an OTR or Muxponder client-side interface to the line-side interface of the same OTR or Muxponder and back

The objective of this test is to

- verify the correct operation of the indicator lamps on the circuit packs
- verify the integrity of the signal through the OCI/OCLD circuit packs in both directions across the backplane or to verify the integrity of the signal through the OTR or Muxponder circuit pack in both directions

For the OCI/OCLD under test, the incoming test signal travels across the backplane from the OCI (through the OCM circuit pack for an Optical Metro 5200 shelf) to the destination OCLD. The signal is then looped back at the OCLD to the originating OCI.

For the OTR or Muxponder under test, the incoming test signal travels across the OTR or Muxponder circuit pack from the client-side interface to the line-side interface. The signal is then looped back at the OTR or Muxponder line-side interface before exiting at the OTR or Muxponder client-side interface.

Test OCI to OCLD, or OTR or Muxponder client-side to OTR or Muxponder client-side continuity when you install or replace an OCI, OCLD, OTR, or Muxponder circuit pack.



### **CAUTION**

#### **Risk of loss of traffic**

This procedure involves disconnecting fibers, which will disrupt traffic on an in-service system. Ensure that traffic is protected when applicable (it may be necessary to use external equipment for protection).

—continued—

---

Procedure 4-2 (continued)

**Testing OCI to OCLD, OTR client-side to OTR client-side, or Muxponder client-side to Muxponder client-side continuity**

---

## Requirements

You must know which OCI, OTR, or Muxponder circuit pack you are testing and the subtending equipment configuration to determine the rate and connectors required for the optical test set. This information also determines whether you need single-mode or multi-mode patch cords to make the connections. For more specific information, refer to the circuit pack specifications in *Technical Specifications*, 323-1701-180.

Before you do the continuity test, make sure that the shelf you are testing is powered on and has a minimum shelf configuration of:

- two OCMs and one SP for an Optical Metro 5200
- one database circuit pack and one SP for an Optical Metro 5100
- has a corresponding OCI/OCLD combination, OTR, or Muxponder of the correct wavelength band installed for each channel of the shelf.

Before you make the test connections, clean the connectors of the circuit packs, optical patch cords, and test set equipment. Follow procedures in the “[Cleaning connectors](#)” chapter in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201. Test results are unreliable if connectors and patch cords are dirty.

—continued—

Procedure 4-2 (continued)

**Testing OCI to OCLD, OTR client-side to OTR client-side, or Muxponder client-side to Muxponder client-side continuity**

Table 4-4 lists the tools and materials required for testing continuity.

**Table 4-4  
Tools and materials required for the continuity test**

| Item  | Quantity  | Supplied |
|---|-----------|----------|
| Antistatic wrist and heel straps  | 1         | no       |
| Optical test set  | 1         | no       |
| Optical fiber cleaning kit  | 1         | no       |
| Fiber inspection scope  | 1         | no       |
| Optical power meter (OPM) with an FC connector if OCLDs with FC connectors are under test                               | 1         | no       |
| Optical power meter (OPM) with an LC connector if OCLDs with LC connectors, OTRs, or Muxponders are under test          | 1         | no       |
| Variable optical attenuator (VOA) with FC-FC connectors if OCLDs with FC connectors are under test                      | 1         | no       |
| Variable optical attenuator (VOA) with LC-LC connectors if OCLDs with LC connectors, OTRs, or Muxponders are under test | 1         | no       |
| Optical patch cord (SC-SC for most OCIs, FC-FC for OCI 2.5 Gbit/s, LC-LC for OTR or Muxponder)                          | 2         | no       |
| Muxponder optical SFP LC connectors   | as needed | no       |
| Optical patch cord with SC-SC connectors  | 1         | no       |

—continued—

Procedure 4-2 (continued)

### Testing OCI to OCLD, OTR client-side to OTR client-side, or Muxponder client-side to Muxponder client-side continuity

## Precautions



#### CAUTION

##### Risk of personal injury

Do not look into the end of connectors on fiber-optic cables or into connectors on the faceplates of installed circuit packs. The light source used in fiber-optic devices can damage your eyes.



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)”, in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

## Expected results

The signal flow

- from the OCI to its corresponding OCLD is correct if the test set signal is error-free or
- from the OTR or Muxponder client-side to OTR or Muxponder client-side is correct if the test set signal is error-free

The LOS indicator lamps on the OCI/OCLD combination, OTR, or Muxponder activate/deactivate.

## Action

| Step | Action   |
|------|--|
| 1    | Make sure that you clean all fibers and components before and after the steps in this procedure. For information on cleaning, see “ <a href="#">Cleaning connectors</a> ” in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.   |
| 2    | Clean and insert the connectors of the appropriate patch cords into the Tx and Rx port connectors of the OCI or the CLIENT Tx and CLIENT Rx port connectors of the OTR or Muxponder. For information on cleaning, see “ <a href="#">Cleaning connectors</a> ” in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201. |

—continued—

Procedure 4-2 (continued)

**Testing OCI to OCLD, OTR client-side to OTR client-side, or Muxponder client-side to Muxponder client-side continuity**

| Step | Action   |
|------|--|
| 3    | <p>Clean the other end of the patch cords connected to the OCI, OTR, or Muxponder. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201. Insert one connector</p> <ul style="list-style-type: none"> <li>• from the Tx port connector of the OCI or the CLIENT Tx port connector of the OTR or Muxponder into the Rx port connector of the test set</li> <li>• from the Rx port connector of the OCI or the CLIENT Rx port connector of the OTR or Muxponder into the Tx port connector of the test set</li> </ul> <p><b>Note:</b> To avoid Rx overload on the OCI, OTR, or Muxponder and the test set, attenuation may be required. Refer to <a href="#">“OCI circuit pack”</a>, <a href="#">“OTR circuit pack”</a>, or <a href="#">“Muxponder circuit pack”</a> in <i>Technical Specifications</i>, 323-1701-180.</p> |
| 4    | <p>Clean and insert one end of the appropriate optical patch cord into the OCLD Tx port connector or the OTR or Muxponder LINE Tx port connector. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p>   |
| 5    | <p>Clean and insert the other end of the optical patch cord into an OPM and take a power reading. See <a href="#">Figure 4-4 on page 4-20</a>. Refer to the <a href="#">“Circuit pack specifications”</a> chapter in <i>Technical Specifications</i>, 323-1701-180 and record the minimum Tx power level for the OCLD, OTR, or Muxponder circuit pack. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p>  |
| 6    | <p>Disconnect the patch cord from the OCLD Tx port connector or the OTR or Muxponder LINE Tx port connector.</p>   |
| 7    | <p>Uncap and clean both VOA fiber connectors. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p>   |
| 8    | <p>Insert a VOA between the OCLD Tx port connector or the OTR or Muxponder LINE Tx port connector and the optical power meter (OPM), which must be set to 1550 nm.</p>   |
| 9    | <p>Adjust the VOA to obtain a reading of –15.0 dBm at the OPM.</p> <p><b>Note:</b> To increase the attenuation, turn the screw clockwise. To decrease the attenuation, turn the screw counter-clockwise.</p>   |
| 10   | <p>Disconnect the VOA connector from the OPM and insert the VOA connector into the OCLD Rx port connector or the OTR or Muxponder LINE Rx port connector. See <a href="#">Figure 4-5 on page 4-21</a>.</p> <p><i>The LOS indicator lamp turns off on the OCLD or the LINE LOS indicator lamp turns off on the OTR or Muxponder. If you are logged in to the System Manager you see the LOS alarm clear. An Rx alarm indicator signal (Rx AIS) is raised when the fiber is connected to the OCLD Rx port or the OTR or Muxponder LINE Rx port.</i></p>  |

—continued—

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Procedure 4-2 (continued)

**Testing OCI to OCLD, OTR client-side to OTR client-side, or Muxponder client-side to Muxponder client-side continuity**

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| <b>Step</b> | <b>Action</b>   |
|-------------|---|
| <b>11</b>   | Turn on the optical test set. Ensure that the bit rate of the test signal <ol style="list-style-type: none"><li>is less than or equal to the maximum bit rate of the OCI, OTR, or Muxponder circuit pack that you are testing, and</li><li>corresponds to the line rate of a supported protocol</li></ol>                     |
| <b>12</b>   | Create a channel assignment between the OCI and OCLD, or for the OTR or Muxponder. See <a href="#">Procedure 3-3, "Making or modifying channel assignments"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |
| <b>13</b>   | Put the OCI facility, or OTR or Muxponder client-side facility in-service. See <a href="#">Procedure 3-10, "Putting a circuit pack or SFP facility in-service"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |
| <b>14</b>   | Clear any start-up errors on the test set, then monitor the return signal on the test set for at least 30 seconds. Verify that the return signal is error-free.   |
| <b>15</b>   | Disconnect the optical patch cords from the OCI, OTR, or Muxponder client-side port connector. Replace the protective caps on the port connector of the OCI, OTR, or Muxponder client-side that you are testing or connect the port connectors to other network devices if you are ready to put the circuit packs in-service. |
| <b>16</b>   | Remove the VOA.   |

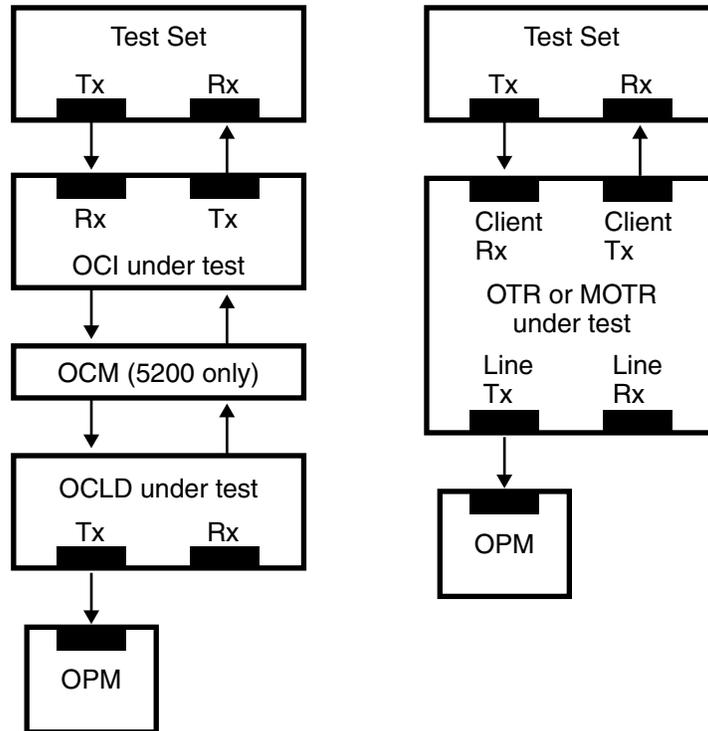
—continued—

Procedure 4-2 (continued)

**Testing OCI to OCLD, OTR client-side to OTR client-side, or Muxponder client-side to Muxponder client-side continuity**

**Figure 4-4**  
**Equipment hook-up continuity test on an Optical Metro 5100/5200 - Part A**

OM2691t



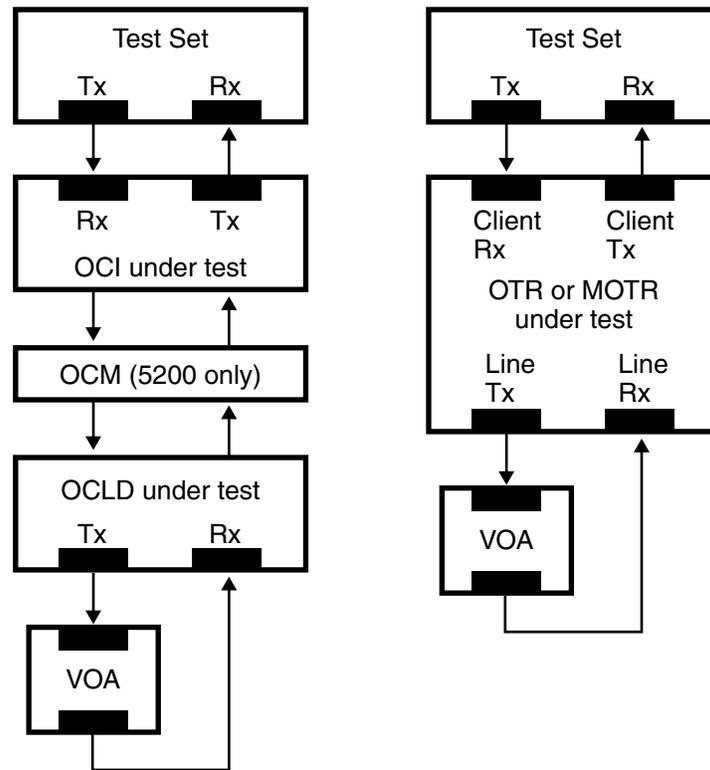
—continued—

Procedure 4-2 (continued)

**Testing OCI to OCLD, OTR client-side to OTR client-side, or Muxponder client-side to Muxponder client-side continuity**

**Figure 4-5**  
**Equipment hook-up for the continuity test on an Optical Metro 5100/5200 - Part B**

OM2692t



—end—

## Procedure 4-3

# Testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity

---

Use this procedure to

- confirm signal continuity from the input of an OCI circuit pack through the OMX to the output of the same OCI circuit pack or
- confirm signal continuity from the client-side input of an OTR or Muxponder circuit pack through the OMX to the client-side output of the same OTR or Muxponder circuit pack

The objective of the OCI to OMX, or OTR to OMX, or Muxponder to OMX continuity test is to verify

- the correct operation of the indicator lamps of the
  - OCI and OCLD under test or
  - OTR or Muxponder under test
- the signal strength through the OMX
- signal continuity through the
  - OCI and OCLD, and the OMX in both directions across the backplane or
  - OTR or Muxponder and the OMX in both directions

For the OCI/OCLD under test, the signal is routed from the Tx port of the OCLD to the OTS OUT port on the OMX, and looped back to the OTS IN port on the OMX. The signal is then output from the OMX channel drop port (or the band drop port for CWDM OMXs) and delivered to the Rx port of the OCLD, then to the OCI and out to the test set.

For the OTR or Muxponder under test, the signal is routed from the LINE Tx port of the OTR or Muxponder to the OTS OUT port on the OMX, and looped back to the OTS IN port on the OMX. The signal is then output from the OMX channel drop port (or the band drop port for CWDM OMXs) and delivered to the LINE Rx port of the OTR or Muxponder, then to the CLIENT Tx port of the OTR or Muxponder and out to the test set.

You must perform the continuity test separately for each channel (OCI/OCLD combination, OTR, or Muxponder) installed on the shelf.

—continued—

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Procedure 4-3 (continued)

**Testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity**

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Perform this test for each channel when an OMX is added or replaced on the shelf.



**CAUTION**

**Risk of loss of traffic**

This procedure involves disconnecting fibers, which will disrupt traffic on an In-Service system. Ensure that traffic is protected when applicable (it may be necessary to use external equipment for protection).

## Requirements

You must know which OCI, OTR, or Muxponder circuit pack you are testing and the subtending equipment configuration to determine the rate and connectors required for the optical test set. This information also determines whether you need single-mode or multi-mode patch cords to make your connections. For more specific information, refer to the circuit pack specifications in *Technical Specifications*, 323-1701-180.

Before you do the continuity test, make sure that the shelf you are testing is powered on and has a minimum shelf configuration of:

- two OCMs and one SP for an Optical Metro 5200
- one database circuit pack and one SP for an Optical Metro 5100
- has a corresponding OCI/OCLD combination, OTR, or Muxponder of the correct wavelength band installed for each channel of the shelf.

Before you do the continuity test, make sure that:

- no pads are in place at the OMX Band Drop port or at the OMX Band Add port for DWDM OMX (Standard).
- no pads are in place at the OMX Band RX port or at the OMX Band TX port for DWDM OMX 4CH + Fiber Manager.
- no pads in place at the CH DROP ports or at the CH ADD ports of the OMX 16CH C-band and the OMX 16CH L-band

Before you make the test connections, clean the connectors of the circuit packs, optical patch cords, and test set equipment. Follow procedures in the “[Cleaning connectors](#)” chapter in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201. The test results can be unreliable if the connectors and patch cords are dirty.

—continued—

Procedure 4-3 (continued)

**Testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity**

Table 4-5 lists the tools and materials required for testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity.

**Table 4-5  
Tools and materials required for the continuity test**

| Item   | Quantity  | Supplied |
|--|-----------|----------|
| Antistatic wrist and heel straps   | 1         | no       |
| Optical test set   | 1         | no       |
| Optical power meter (OPM) with an SC connector   | 1         | no       |
| Optical fiber cleaning kit   | 1         | no       |
| Fiber inspection scope   | 1         | no       |
| Variable optical attenuator (VOA) with SC-SC connectors  | 1         | no       |
| Optical patch cord (SC-SC for most OCIs, FC-FC for OCI 2.5 Gbit/s, LC-LC for OTR or Muxponder) | 2         | no       |
| Muxponder optical SFP LC connectors  | as needed | no       |
| Optical patch cord with SC-SC connectors   | 1         | no       |

**Precautions**



**CAUTION**  
**Risk of personal injury**  
Do not look into the end of connectors on fiber-optic cables or into connectors on the faceplates of installed circuit packs. The light source used in fiber-optic devices can damage your eyes.



**CAUTION**  
**Risk of affecting network reliability**  
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)”, in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

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 Procedure 4-3 (continued)

**Testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity**


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**Expected results**

The signal flow through the OCI/OCLD combination, OTR, or Muxponder and the OMX is correct if the test set signal is error-free.

The LOS indicator lamps on the OCI/OCLD combination, OTR, or Muxponder activate/deactivate.

**Action**


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| Step | Action  |
|------|---|
| 1    | Make sure that you clean all fibers and components before and after the steps in this procedure. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.  |
| 2    | Clean and insert the connectors of the appropriate patch cords into the Tx and Rx port connectors of the OCI or the CLIENT Tx and CLIENT Rx port connectors of the OTR or Muxponder. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.  |
| 3    | <p>Clean the other end of the patch cords connected to the OCI, OTR, or Muxponder. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> <p>Insert one connector</p> <ul style="list-style-type: none"> <li>• from the Tx port connector of the OCI or the CLIENT Tx port connector of the OTR or Muxponder into the Rx port connector of the test set</li> <li>• from the Rx port connector of the OCI or the CLIENT Rx port connector of the OTR or Muxponder into the Tx port connector of the test set</li> </ul> <p><b>Note:</b> To avoid Rx overload on the OCI, OTR, or Muxponder and the test set, attenuation may be required. Refer to <a href="#">“OCI circuit pack”</a>, <a href="#">“OTR circuit pack”</a>, or <a href="#">“Muxponder circuit pack”</a> in <i>Technical Specifications</i>, 323-1701-180.</p> |
| 4    | <p>Clean and connect the fibers between the OMX and the OCLD, OTR, or Muxponder. For connection information, follow <a href="#">Procedure 3-19 “Connecting an OMX to OCLD circuit packs”</a>, <a href="#">Procedure 3-20 “Connecting an OMX to OTR circuit packs”</a>, or <a href="#">Procedure 3-21 “Connecting an OMX to Muxponder (MOTR) circuit packs”</a> in <i>Connection Procedures</i>, 323-1701-221. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> <p><b>Note:</b> The OCLD is the mate to the OCI circuit pack under test.</p>   |
| 5    | Clean and insert one end of the appropriate optical patch cord into the OMX OTS OUT connector. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.  |

—continued—

Procedure 4-3 (continued)

**Testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity**

- | Step | Action  |
|------|---|
| 6    | <p>Clean and insert the other end of the optical patch cord into an OPM and take a power reading. See <a href="#">Figure 4-6 on page 4-29</a>. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> <p><b>Note:</b> This reading should be the OCLD, OTR, or Muxponder output power minus the OMX add loss only. See <a href="#">Table 4-6</a> for acceptable power levels.</p> |

**Table 4-6**  
**Minimum acceptable optical power level**

| Type of OMX           | Type of OCLD/OTR/Muxponder |                 |                          |                |                                     |
|-----------------------|----------------------------|-----------------|--------------------------|----------------|-------------------------------------|
|                       | OCLD 1.25 Gbit/s           | OCLD 2.5 Gbit/s | OCLD/OTR 2.5 Gbit/s Flex | OTR 10 Gbit/s  | OTR 10 Gbit/s Enhanced or Muxponder |
| DWDM OMXs             | -3.6 dBm                   | -0.6 dBm        | -0.8 dBm                 | -5.4 dBm       | -1.0 dBm                            |
| DWDM OMX 4CH Enhanced | -2.3 dBm                   | 0.7 dBm         | 0.5 dBm                  | -4.1 dBm       | 0.3 dBm                             |
| OMX 4CH CWDM          | -2.0 dBm                   | 1.0 dBm         | 0.7 dBm                  | not applicable | 0.5 dBm                             |
| OMX 1CH CWDM          | -0.8 dBm                   | 2.2 dBm         | 1.8 dBm                  | not applicable | 1.6 dBm                             |
| OMX 4CH OADM ITU CWDM | not applicable             | not applicable  | 0.8 dBm                  | not applicable | 0.6 dBm                             |
| OMX 1CH OADM ITU CWDM | not applicable             | not applicable  | 1.6 dBm                  | not applicable | 1.4 dBm                             |

- 7 Disconnect the patch cord from the OMX OTS OUT connector.
- 8 Uncap and clean both VOA fiber connectors. For information on cleaning, see [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.
- 9 Insert a VOA between the OMX OTS OUT connector and the optical power meter (OPM), which must be set to 1550 nm.
- 10 Adjust the VOA to obtain a reading of –12.0 dBm at the OPM.  
**Note:** To increase the attenuation, turn the screw clockwise. To decrease the attenuation, turn the screw counter-clockwise.

—continued—

Procedure 4-3 (continued)

**Testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity**

| Step | Action   |
|------|--|
| 11   | <p>Disconnect the VOA connector from the OPM and insert the VOA connector into the OMX OTS IN connector. See <a href="#">Figure 4-7 on page 4-30</a>.</p> <p><i>The LOS indicator lamp turns off on the OCLD or the LINE LOS indicator lamp turns off on the OTR or Muxponder.</i></p>   |
| 12   | <p>Use the Facilities tab in System Manager to view the Rx power. See the following tables in the “<a href="#">Test procedures</a>” chapter in <i>Testing and Equalization Procedures</i>, 323-1701-222, for acceptable power levels.</p> <ul style="list-style-type: none"> <li>• <a href="#">Table 1-15 “ Minimum acceptable Rx optical power level - DWDM OMXs”</a></li> <li>• <a href="#">Table 1-16 “Minimum acceptable Rx optical power level - OMX 4CH CWDM”</a></li> <li>• <a href="#">Table 1-17 “ Minimum acceptable Rx optical power level - OMX 1CH CWDM”</a></li> <li>• <a href="#">Table 1-18 “Minimum acceptable Rx optical power level - OMX 4CH OADM ITU CWDM”</a></li> <li>• <a href="#">Table 1-19 “ Minimum acceptable Rx optical power level - OMX 1CH OADM ITU CWDM”</a></li> <li>• <a href="#">Table 1-34 “ Minimum acceptable Rx optical power level - OMX 16CH DWDM”</a></li> </ul> |
| 13   | <p>Turn on the optical test set. Ensure that the bit rate of the test signal</p> <ol style="list-style-type: none"> <li>a. is less than or equal to the maximum speed of the OCI, OTR, or Muxponder circuit pack that you are testing, and</li> <li>b. corresponds to the line rate of a supported protocol</li> </ol>   |
| 14   | <p>Create a channel assignment between the OCI and OCLD, or for the OTR or Muxponder. See <a href="#">Procedure 3-3, “Making or modifying channel assignments”</a>, in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p>   |
| 15   | <p>Put the OCI facility, or OTR or Muxponder client-side facility in-service. See <a href="#">Procedure 3-10, “Putting a circuit pack or SFP facility in-service”</a>, in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p>  |
| 16   | <p>Clear the start-up errors, then monitor the return signal on the test set for at least 30 seconds. Verify that the return signal is error-free.</p>   |

—continued—

## 4-28 Installation troubleshooting procedures

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Procedure 4-3 (continued)

### Testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity

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| <b>Step</b> | <b>Action</b>   |
|-------------|---|
| <b>17</b>   | Disconnect the optical patch cords from the OCI, OTR, or Muxponder client-side port connector. Replace the protective caps on the port connector of the OCI, OTR, or Muxponder client-side that you are testing or connect the port connectors to other network devices if you are ready to put the circuit packs in-service. |
| <b>18</b>   | Remove the VOA.   |

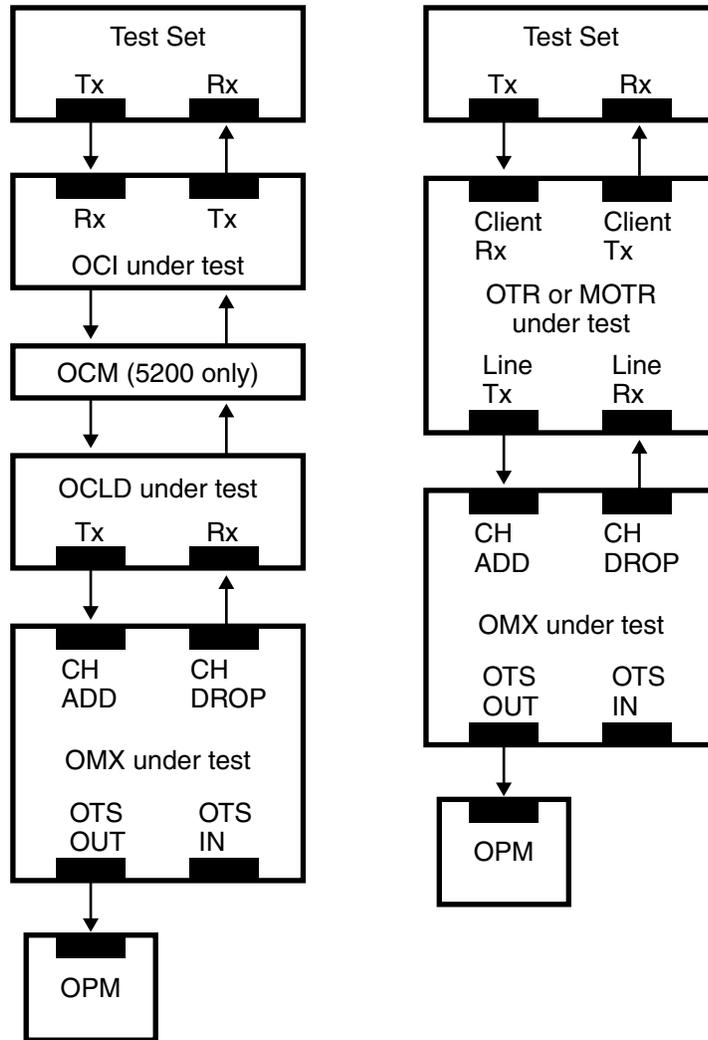
—continued—

Procedure 4-3 (continued)

**Testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity**

**Figure 4-6**  
**Equipment hook-up for the OCI to OMX, OTR to OMX, or Muxponder to OMX**  
**continuity test on an Optical Metro 5100/5200 - Part A**

OM2693t



**Note:** for DWDM OMXs the add port is labeled "CH add" and the drop port is labeled "CH drop". For CWDM OMXs, the add port is labeled "Band add" and the drop port is labeled "Band drop".

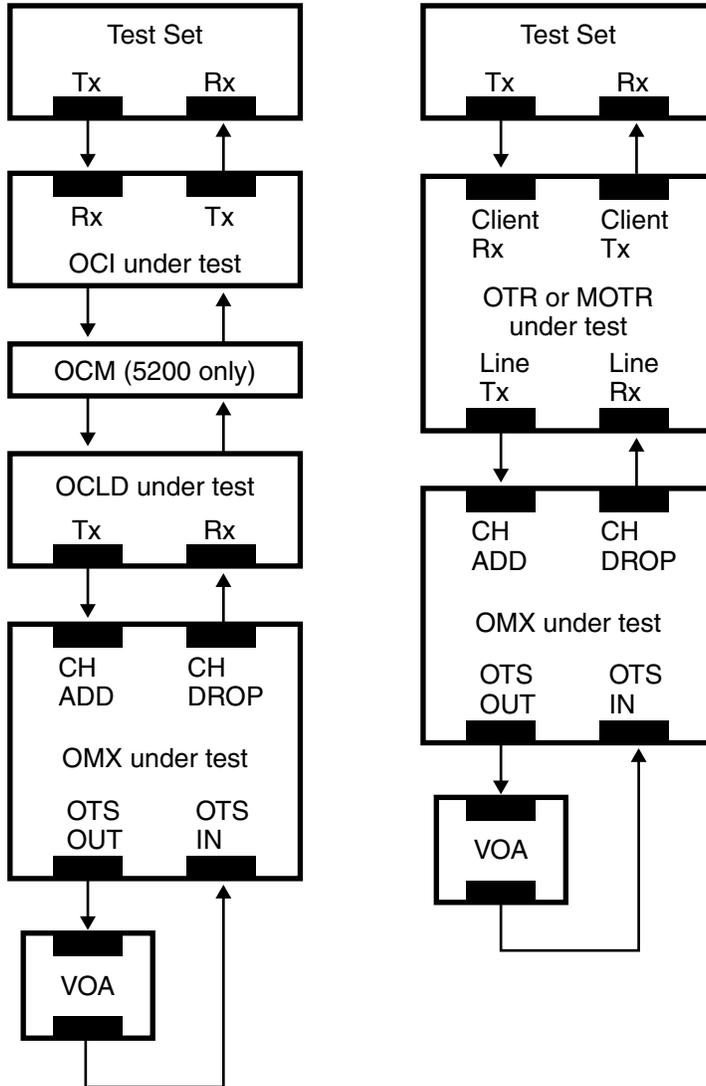
—continued—

Procedure 4-3 (continued)

**Testing OCI to OMX, OTR to OMX, or Muxponder to OMX continuity**

**Figure 4-7**  
**Equipment hook-up for the OCI to OMX, OTR to OMX, or Muxponder to OMX**  
**continuity test on an Optical Metro 5100/5200 - Part B**

OM2694t



**Note:** for DWDM OMXs the add port is labeled "CH add" and the drop port is labeled "CH drop". For CWDM OMXs, the add port is labeled "Band add" and the drop port is labeled "Band drop".

—end—

## Procedure 4-4

### Testing graduated loopback

Use this procedure to locate faults without removing or replacing network equipment. You can perform this test for an entire traffic path from one location, and for OCI, OTR, or Muxponder circuit packs.

The graduated loopback test starts at one end and progressively checks for errors as you add segments across the network path to the other end. Before beginning loopback testing, you must determine the regenerator count (loopback case) for the connection. To determine this count, first identify the near-end OCI, OTR, or Muxponder and the far-end OCI, OTR, or Muxponder of the connection under test. The test set is connected to the near-end OCI, OTR, or Muxponder. Then use one of the following formulas to determine the regenerator count (loopback case):

- if far-end circuit pack is an OCI:  $2 \times (\text{number of regens}) + 2$
- if far-end circuit pack is an OTR:  $2 \times (\text{number of regens}) + 1$
- if far-end circuit pack is a Muxponder:  $2 \times (\text{number of regens}) + 1$

If the regenerator count (loopback case) for the connection exceeds the regenerator count limit (loopback case), the test will not be valid. For information on the regenerator count limit see [Table 4-7](#).

**Table 4-7**  
Regenerator count limit (loopback case)

|                         | OCLD 1.25 Gbit/s | OCLD/OTR 2.5 Gbit/s | OTR 10 Gbit/s | OTR 10 Gbit/s Enhanced or Muxponder 10 Gbit/s GbE/FC |
|-------------------------|------------------|---------------------|---------------|--|
| Regenerator count limit | 4                | 13                  | 7             | 13   |

If you add a segment and detect an error, the error is located in the circuitry that you most recently added to the test path.

**Note:** OTR circuit packs only support facility loopbacks.

To determine the location of the loopbacks for the graduated loopback test, see the following figures:

- [Figure 4-8 on page 4-32](#) if the connection uses OCI/OCLDs
- [Figure 4-9 on page 4-32](#) if the connection uses OTR 2.5 Gbit/s
- [Figure 4-10 on page 4-33](#) if the connection uses OTR 10 Gbit/s

—continued—

Procedure 4-4 (continued)

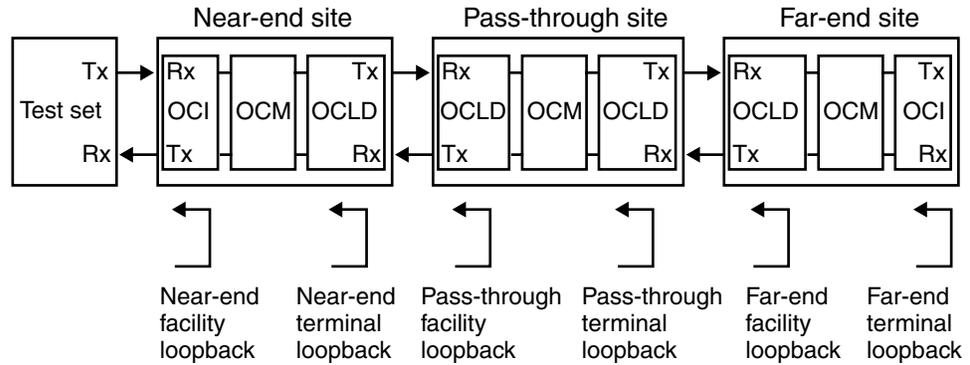
Testing graduated loopback

- [Figure 4-11 on page 4-33](#) if the connection uses Muxponder

**Figure 4-8**

**Location of loopbacks for the graduated loopback test - OCI/OCLD case**

OM1849t

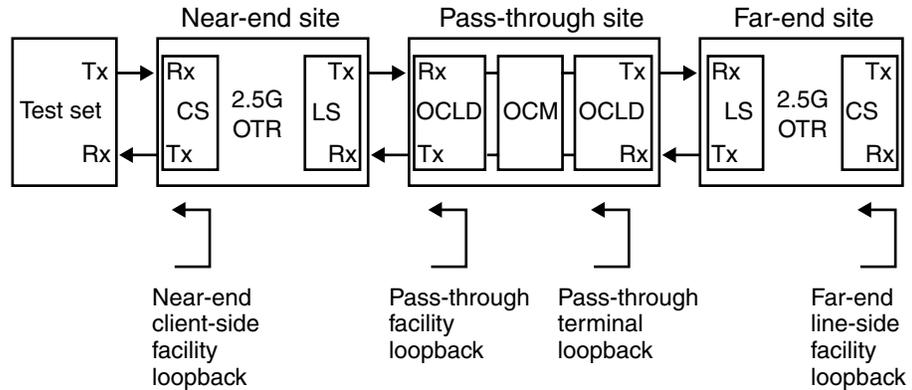


**Note:** To simplify the diagram, OMXs are not shown.

**Figure 4-9**

**Location of loopbacks for the graduated loopback test - 2.5G OTR case**

OM1850t



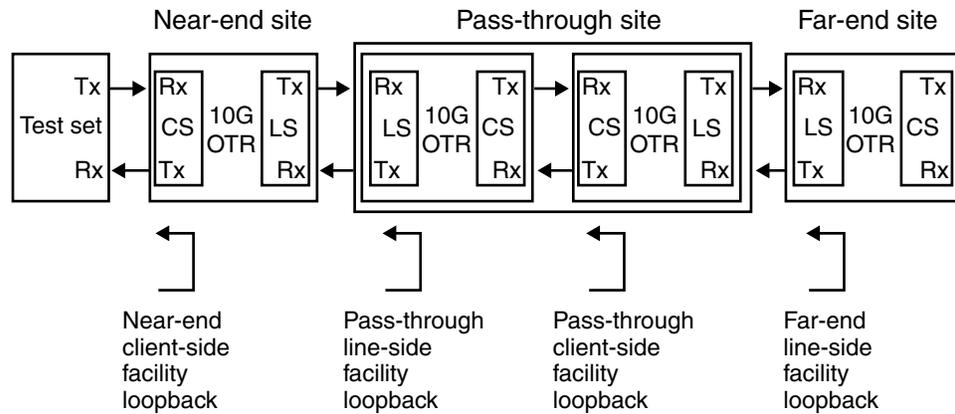
**Note:** To simplify the diagram, OMXs are not shown.

—continued—

Procedure 4-4 (continued)  
**Testing graduated loopback**

**Figure 4-10**  
**Location of loopbacks for the graduated loopback test - 10G OTR case**

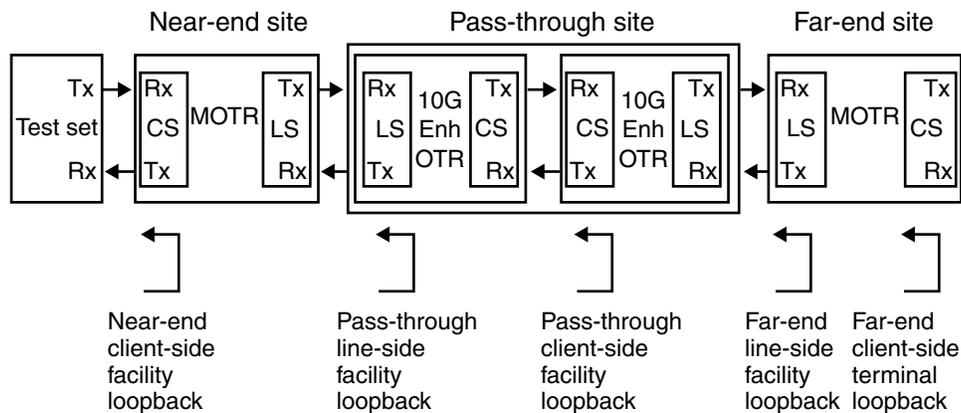
OM1851t



**Note:** To simplify the diagram, OMXs are not shown.

**Figure 4-11**  
**Location of loopbacks for the graduated loopback test - Muxponder case**

OM2695t



**Note:** To simplify the diagram, OMXs are not shown.

—continued—

Procedure 4-4 (continued)

**Testing graduated loopback**

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**CAUTION**

**Risk of loss of traffic**

This procedure involves disconnecting fibers, which will disrupt traffic on an in-service system. Ensure that your traffic is protected when applicable (it may be necessary to use external equipment for protection).



**CAUTION**

**Risk of equipment damage**

The OCLD or OTR line-side transmitter (Tx) should not be loop-backed directly to the OCLD or OTR line-side receiver (Rx) unless an attenuator is used. Also, the OTR 10 Gbit/s client-side transmitter (Tx) should not be loop-backed directly to the OTR 10 Gbit/s client-side receiver (Rx) unless an attenuator is used. This is to avoid damage to the circuit pack which can occur when the signal power into the receiver exceeds the Rx power damage level documented in *Technical Specifications*, 323-1701-180.

**Requirements**

The test set must operate at the same bit rate provisioned for the channel that you are testing.

The entire path must carry the same traffic type. This procedure assumes that the ring is already fibered.

Before you make the test connections, clean the connectors of the circuit packs, optical patch cords, and test set equipment. Follow procedures in the “[Cleaning connectors](#)” chapter in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201. The test results can be unreliable if the connectors and patch cords are dirty.

[Table 4-8](#) lists the tools and materials required for testing graduated loopback.

—continued—

Procedure 4-4 (continued)  
**Testing graduated loopback**

**Table 4-8**  
**Tools and materials required for the graduated loopback test**

| Item                                | Quantity  | Supplied |
|-------------------------------------|-----------|----------|
| Optical test set                    | 1         | no       |
| Optical power meter (OPM)           | 1         | no       |
| Muxponder optical SFP LC connectors | as needed | no       |
| Fiber cleaning kit                  | 1         | no       |
| Fiber inspection scope              | 1         | no       |

## Precautions



### CAUTION

#### Risk of personal injury

Do not look into the end of connectors on fiber-optic cables or into connectors on the faceplates of installed circuit packs. The light source used in fiber-optic devices can damage your eyes.



### CAUTION

#### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)”, in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

## Expected results

No faults are on the channel if the test set signal is error-free.

If you discover an excessive, consistent error rate, follow “[Isolating faults that do not generate alarms](#)” in *Trouble Clearing and Alarm Reference Guide*, 323-1701-542.

—continued—

Procedure 4-4 (continued)  
**Testing graduated loopback**

**Action**

| Step           | Action   |             |            |              |                        |                |                        |
|----------------|--|-------------|------------|--------------|------------------------|----------------|------------------------|
| 1              | Make sure that you clean all fibers and components before and after the steps in this procedure. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.   |             |            |              |                        |                |                        |
| 2              | Clean and insert the connectors of the appropriate patch cords into the Tx and Rx port connectors of the OCI or the CLIENT Tx and CLIENT Rx port connectors of the OTR or Muxponder. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.   |             |            |              |                        |                |                        |
| 3              | Clean the other end of the patch cords connected to the OCI, OTR, or Muxponder. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201. Insert one connector <ul style="list-style-type: none"> <li>• from the Tx port connector of the OCI or the CLIENT Tx port connector of the OTR or Muxponder into the Rx port connector of the test set</li> <li>• from the Rx port connector of the OCI or the CLIENT Rx port connector of the OTR or Muxponder into the Tx port connector of the test set</li> </ul> <p><b>Note:</b> To avoid Rx overload on the OCI, OTR, or Muxponder and the test set, attenuation may be required. Refer to <a href="#">“OCI circuit pack”</a>, <a href="#">“OTR circuit pack”</a>, or <a href="#">“Muxponder circuit pack”</a> in <i>Technical Specifications</i>, 323-1701-180.</p> |             |            |              |                        |                |                        |
| 4              | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If the path</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>is protected</td> <td><a href="#">step 5</a></td> </tr> <tr> <td>is unprotected</td> <td><a href="#">step 6</a></td> </tr> </tbody> </table>  | If the path | Then go to | is protected | <a href="#">step 5</a> | is unprotected | <a href="#">step 6</a> |
| If the path    | Then go to   |             |            |              |                        |                |                        |
| is protected   | <a href="#">step 5</a>   |             |            |              |                        |                |                        |
| is unprotected | <a href="#">step 6</a>   |             |            |              |                        |                |                        |
| 5              | Use the Channel Assignment window in the System Manager to perform a Force switch, to ensure that the traffic is on the path under test. Follow <a href="#">Procedure 3-44, “Forcing traffic to one path on a protected channel”</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Make sure that the Force switch is operated at both the near-end and far-end site. Then go to <a href="#">step 6</a> .  |             |            |              |                        |                |                        |

—continued—

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 Procedure 4-4 (continued)  
**Testing graduated loopback**


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| Step | Action |
|------|--------|
|------|--------|

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**Performing a near-end OCI, or OTR or Muxponder client-side facility loopback**

**Note:** The channel assignment for the OCI, OTR, or Muxponder under test must be in-service.

- | 6                      | Put the OCI facility, or the OTR or Muxponder client-side facility, that you are testing out-of-service (see <a href="#">Figure 4-8 on page 4-32</a> , <a href="#">Figure 4-9 on page 4-32</a> or <a href="#">Figure 4-10 on page 4-33</a> ). Follow <a href="#">Procedure 3-13, "Taking a circuit pack facility or SFP facility out-of-service"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                     |   |                        |                               |
|------------------------|--|----|------|---------------------|---|------------------------|-------------------------------|
| 7                      | Set up a near-end facility loopback on the OCI, or the OTR or Muxponder client-side that is connected to the test set. Follow <a href="#">Procedure 3-59, "Creating and modifying a loopback using the System Manager"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Make sure that you select Facility for the type of loopback.<br><br><i>A Loopback Alarm appears in the Active Alarms tab.</i>   |    |      |                     |   |                        |                               |
| 8                      | Turn on the optical test set.  |    |      |                     |   |                        |                               |
| 9                      | Clear the start-up errors, and monitor the return signal on the test set for at least 30 seconds.  |    |      |                     |   |                        |                               |
| 10                     | Check for errors.<br><br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>errors are detected</td> <td>the problem is between the test set and the near-end OCI, OTR, or Muxponder. Go to <a href="#">step 11</a>. See <a href="#">step 11</a>, <a href="#">Note 1</a>.</td> </tr> <tr> <td>no errors are detected</td> <td>go to <a href="#">step 12</a></td> </tr> </tbody> </table>  | If | Then | errors are detected | the problem is between the test set and the near-end OCI, OTR, or Muxponder. Go to <a href="#">step 11</a> . See <a href="#">step 11</a> , <a href="#">Note 1</a> . | no errors are detected | go to <a href="#">step 12</a> |
| If                     | Then   |    |      |                     |   |                        |                               |
| errors are detected    | the problem is between the test set and the near-end OCI, OTR, or Muxponder. Go to <a href="#">step 11</a> . See <a href="#">step 11</a> , <a href="#">Note 1</a> .  |    |      |                     |   |                        |                               |
| no errors are detected | go to <a href="#">step 12</a>  |    |      |                     |   |                        |                               |
| 11                     | To isolate and resolve the problem <ol style="list-style-type: none"> <li>a. clean and inspect both ends of the OCI, OTR, or Muxponder client-side fibers. For information on cleaning, see <a href="#">"Cleaning connectors"</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201</li> <li>b. verify the Tx and Rx power levels on the test set and OCI, OTR, or Muxponder client-side interface</li> <li>c. verify that the patch cords are not defective (by testing each patch cord by running from transmit to receive of the test set)</li> <li>d. replace the near-end OCI, OTR, or Muxponder. See <a href="#">Note 2</a>.</li> </ol> <p><b>Note 1:</b> Retest the loopback after completing each substep. When no errors are detected, go to <a href="#">step 12</a>.</p> <p><b>Note 2:</b> Follow the replacement procedure appropriate to the type of circuit pack in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p> |    |      |                     |   |                        |                               |

—continued—

Procedure 4-4 (continued)

**Testing graduated loopback**

| Step | Action   |
|------|--|
| 12   | Clear the near-end facility loopback. Follow <a href="#">Procedure 3-60, "Removing a loopback using the System Manager"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |
| 13   | Put the OCI facility, or the OTR or Muxponder client-side facility back in-service. Follow <a href="#">Procedure 3-10, "Putting a circuit pack or SFP facility in-service"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |

**Performing a near-end OCLD terminal loopback**

**Note:** Terminal loopbacks are not supported on OTR circuit packs or the line-side of the Muxponder circuit pack.

|    |   |
|----|---|
| 14 | Put the facility of the OCLD that you are testing out-of-service. Follow <a href="#">Procedure 3-13, "Taking a circuit pack facility or SFP facility out-of-service"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |
| 15 | Start a terminal loopback on the near-end OCLD. Follow <a href="#">Procedure 3-59, "Creating and modifying a loopback using the System Manager"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Make sure that you select Terminal for the type of loopback.<br><i>A Loopback Alarm appears in the Active Alarms tab.</i> |
| 16 | Reset the optical test set and monitor the return signal for at least 30 seconds.   |
| 17 | Check for errors.   |

| If                     | Then  |
|------------------------|---|
| errors are detected    | the problem is on the near-end OCLD, OCM, or OCI. Go to <a href="#">step 18</a> . See <a href="#">step 18, Note 1</a> . |
| no errors are detected | go to <a href="#">step 19</a>   |

|    |  |
|----|--|
| 18 | To isolate and resolve the problem <ol style="list-style-type: none"> <li>a. replace the near-end OCLD. See <a href="#">Note 2</a>.</li> <li>b. replace the near-end OCM. See <a href="#">Note 2</a>.</li> <li>c. Replace the near-end OCI. See <a href="#">Note 2</a>.</li> </ol> <p><b>Note 1:</b> Retest the loopback after replacing each circuit pack. When no errors are detected, go to <a href="#">step 19</a>.</p> <p><b>Note 2:</b> Follow the replacement procedure appropriate to the type of circuit pack (<a href="#">Procedure 3-1, "Replacing an OCI circuit pack"</a>, <a href="#">Procedure 3-2, "Replacing an OCLD circuit pack"</a>, and <a href="#">Procedure 3-8, "Replacing an OCM circuit pack"</a>) in <i>Maintenance and Replacement Procedures</i>, 313-1701-546.</p> |
| 19 | Clear the near-end terminal loopback. Follow <a href="#">Procedure 3-60, "Removing a loopback using the System Manager"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |

—continued—

Procedure 4-4 (continued)  
**Testing graduated loopback**

| Step  | Action   |   |                   |                 |                         |                 |                         |
|---|--|---|-------------------|-----------------|-------------------------|-----------------|-------------------------|
| 20  | Put the OCLD facility back in-service. Follow <a href="#">Procedure 3-10, "Putting a circuit pack or SFP facility in-service"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |   |                   |                 |                         |                 |                         |
| 21  | <table border="0"> <tr> <td><b>If</b> regenerator sites are</td> <td><b>Then</b> go to</td> </tr> <tr> <td>in the path</td> <td><a href="#">step 22</a></td> </tr> <tr> <td>not in the path</td> <td><a href="#">step 53</a></td> </tr> </table>   | <b>If</b> regenerator sites are                                       | <b>Then</b> go to | in the path     | <a href="#">step 22</a> | not in the path | <a href="#">step 53</a> |
| <b>If</b> regenerator sites are                                       | <b>Then</b> go to  |   |                   |                 |                         |                 |                         |
| in the path   | <a href="#">step 22</a>  |   |                   |                 |                         |                 |                         |
| not in the path   | <a href="#">step 53</a>  |   |                   |                 |                         |                 |                         |
| 22  | <table border="0"> <tr> <td><b>If</b> the signal at the near-end and far-end site terminates on a</td> <td><b>Then</b> go to</td> </tr> <tr> <td>OCI or 2.5G OTR</td> <td><a href="#">step 23</a></td> </tr> <tr> <td>OTR 10 Gbit/s</td> <td><a href="#">step 38</a></td> </tr> </table> | <b>If</b> the signal at the near-end and far-end site terminates on a | <b>Then</b> go to | OCI or 2.5G OTR | <a href="#">step 23</a> | OTR 10 Gbit/s   | <a href="#">step 38</a> |
| <b>If</b> the signal at the near-end and far-end site terminates on a | <b>Then</b> go to  |   |                   |                 |                         |                 |                         |
| OCI or 2.5G OTR   | <a href="#">step 23</a>  |   |                   |                 |                         |                 |                         |
| OTR 10 Gbit/s   | <a href="#">step 38</a>  |   |                   |                 |                         |                 |                         |

**Performing a pass-through OCLD facility loopback**

|                        |   |           |             |                     |  |                        |                               |
|------------------------|---|-----------|-------------|---------------------|--|------------------------|-------------------------------|
| 23                     | Put the facility of the pass-through OCLD that you are testing out-of-service (see <a href="#">Figure 4-8 on page 4-32</a> or <a href="#">Figure 4-9 on page 4-32</a> ). Follow <a href="#">Procedure 3-13, "Taking a circuit pack facility or SFP facility out-of-service"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |           |             |                     |  |                        |                               |
| 24                     | Start a facility loopback on the pass-through OCLD. Follow <a href="#">Procedure 3-59, "Creating and modifying a loopback using the System Manager"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Make sure that you select Facility for the type of loopback.<br><i>A Loopback Alarm appears in the Active Alarms tab.</i>   |           |             |                     |  |                        |                               |
| 25                     | Reset the optical test set and monitor the return signal for at least 30 seconds.   |           |             |                     |  |                        |                               |
| 26                     | Check for errors.   |           |             |                     |  |                        |                               |
|                        | <table border="0"> <tr> <td><b>If</b></td> <td><b>Then</b></td> </tr> <tr> <td>errors are detected</td> <td>the problem is either on the facilities between the upstream OCLD and the pass-through OCLD, or on the pass-through OCLD. Go to <a href="#">step 27</a>. See <a href="#">step 27</a>, <a href="#">Note 1</a>.</td> </tr> <tr> <td>no errors are detected</td> <td>go to <a href="#">step 28</a></td> </tr> </table> | <b>If</b> | <b>Then</b> | errors are detected | the problem is either on the facilities between the upstream OCLD and the pass-through OCLD, or on the pass-through OCLD. Go to <a href="#">step 27</a> . See <a href="#">step 27</a> , <a href="#">Note 1</a> . | no errors are detected | go to <a href="#">step 28</a> |
| <b>If</b>              | <b>Then</b>   |           |             |                     |  |                        |                               |
| errors are detected    | the problem is either on the facilities between the upstream OCLD and the pass-through OCLD, or on the pass-through OCLD. Go to <a href="#">step 27</a> . See <a href="#">step 27</a> , <a href="#">Note 1</a> .  |           |             |                     |  |                        |                               |
| no errors are detected | go to <a href="#">step 28</a>   |           |             |                     |  |                        |                               |

—continued—

Procedure 4-4 (continued)

**Testing graduated loopback**

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| <b>Step</b> | <b>Action</b>   |
|-------------|---|
| <b>27</b>   | <p>To isolate and resolve the problem</p> <ol style="list-style-type: none"><li><b>a.</b> clean the fibers and connectors on the optical components along the path between the upstream OCLD and the pass-through OCLD, for example, ECTs, PBEs, OFA circuit packs, and patch panels. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201</li><li><b>b.</b> check the Tx and Rx power levels.</li><li><b>c.</b> replace the upstream OCLD. See <a href="#">Note 2</a>.</li><li><b>d.</b> replace the pass-through OCLD. See <a href="#">Note 2</a>.</li></ol> <p><b>Note 1:</b> Retest the loopback after completing each substep. When no errors are detected, go to <a href="#">step 28</a>.</p> <p><b>Note 2:</b> Follow the replacement procedure appropriate to the type of circuit pack in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p> |
| <b>28</b>   | <p>Clear the pass-through facility loopback. Follow <a href="#">Procedure 3-60</a>, <a href="#">“Removing a loopback using the System Manager”</a>, in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p>  |
| <b>29</b>   | <p>Put the pass-through OCLD facility back in-service. Follow <a href="#">Procedure 3-10</a>, <a href="#">“Putting a circuit pack or SFP facility in-service”</a>, in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p>   |

—continued—

Procedure 4-4 (continued)  
**Testing graduated loopback**

| Step | Action |
|------|--------|
|------|--------|

**Performing a pass-through OCLD terminal loopback**

- | 30                     | Put the facility of the pass-through OCLD that you are testing out-of-service (see <a href="#">Figure 4-8 on page 4-32</a> or <a href="#">Figure 4-9 on page 4-32</a> ). Follow <a href="#">Procedure 3-13, "Taking a circuit pack facility or SFP facility out-of-service"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                     |  |                        |                               |
|------------------------|---|----|------|---------------------|--|------------------------|-------------------------------|
| 31                     | Start a terminal loopback on the pass-through OCLD. Follow <a href="#">Procedure 3-59, "Creating and modifying a loopback using the System Manager"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Be sure to select Terminal for the type of loopback.<br><br><i>A Loopback Alarm appears in the Active Alarms tab.</i>   |    |      |                     |  |                        |                               |
| 32                     | Reset the optical test set and monitor the return signal for at least 30 seconds.   |    |      |                     |  |                        |                               |
| 33                     | Check for errors.   |    |      |                     |  |                        |                               |
|                        | <table border="1"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>errors are detected</td> <td>the problem is on the pass-through OCLDs or OCM. Go to <a href="#">step 34</a>. See <a href="#">step 34, Note 1</a>.</td> </tr> <tr> <td>no errors are detected</td> <td>go to <a href="#">step 35</a></td> </tr> </tbody> </table>  | If | Then | errors are detected | the problem is on the pass-through OCLDs or OCM. Go to <a href="#">step 34</a> . See <a href="#">step 34, Note 1</a> . | no errors are detected | go to <a href="#">step 35</a> |
| If                     | Then  |    |      |                     |  |                        |                               |
| errors are detected    | the problem is on the pass-through OCLDs or OCM. Go to <a href="#">step 34</a> . See <a href="#">step 34, Note 1</a> .  |    |      |                     |  |                        |                               |
| no errors are detected | go to <a href="#">step 35</a>   |    |      |                     |  |                        |                               |
| 34                     | To isolate and resolve the problem <ol style="list-style-type: none"> <li>a. replace the pass-through OCLDs. See <a href="#">Note 2</a>.</li> <li>b. replace the pass-through OCM. See <a href="#">Note 2</a>.</li> </ol> <p><b>Note 1:</b> Retest the loopback after replacing each circuit pack. When no errors are detected, go to <a href="#">step 35</a>.</p> <p><b>Note 2:</b> Follow the replacement procedure appropriate to the type of circuit pack (<a href="#">Procedure 3-2, "Replacing an OCLD circuit pack"</a>, and <a href="#">Procedure 3-8, "Replacing an OCM circuit pack"</a>) in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p> |    |      |                     |  |                        |                               |
| 35                     | Clear the pass-through terminal loopback. Follow <a href="#">Procedure 3-60, "Removing a loopback using the System Manager"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                     |  |                        |                               |
| 36                     | Put the pass-through OCLD facility back in-service. Follow <a href="#">Procedure 3-10, "Putting a circuit pack or SFP facility in-service"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                     |  |                        |                               |
| 37                     | Repeat <a href="#">step 23</a> to <a href="#">step 36</a> if the path includes other regenerator sites.   |    |      |                     |  |                        |                               |

—continued—

Procedure 4-4 (continued)

**Testing graduated loopback**

| Step | Action |
|------|--------|
|------|--------|

**Performing a pass-through OTR line-side facility loopback**

- | 38                     | Put the line-side facility of the pass-through OTR that you are testing out-of-service (see <a href="#">Figure 4-10 on page 4-33</a> ). Follow <a href="#">Procedure 3-13</a> , “ <a href="#">Taking a circuit pack facility or SFP facility out-of-service</a> ”, in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                     |  |                        |                               |
|------------------------|--|----|------|---------------------|--|------------------------|-------------------------------|
| 39                     | Start a facility loopback on the pass-through OTR line-side. Follow <a href="#">Procedure 3-59</a> , “ <a href="#">Creating and modifying a loopback using the System Manager</a> ”, in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Make sure that select Facility for the type of loopback.<br><i>A Loopback Alarm appears in the Active Alarms tab.</i>   |    |      |                     |  |                        |                               |
| 40                     | Reset the optical test set and monitor the return signal for at least 30 seconds.  |    |      |                     |  |                        |                               |
| 41                     | Check for errors.<br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>errors are detected</td> <td>the problem is either on the facilities between the upstream OTR or Muxponder and the pass-through OTR, or on the pass-through OTR. Go to <a href="#">step 42</a>. See <a href="#">step 42</a>, <a href="#">Note 1</a>.</td> </tr> <tr> <td>no errors are detected</td> <td>go to <a href="#">step 43</a></td> </tr> </tbody> </table>   | If | Then | errors are detected | the problem is either on the facilities between the upstream OTR or Muxponder and the pass-through OTR, or on the pass-through OTR. Go to <a href="#">step 42</a> . See <a href="#">step 42</a> , <a href="#">Note 1</a> . | no errors are detected | go to <a href="#">step 43</a> |
| If                     | Then   |    |      |                     |  |                        |                               |
| errors are detected    | the problem is either on the facilities between the upstream OTR or Muxponder and the pass-through OTR, or on the pass-through OTR. Go to <a href="#">step 42</a> . See <a href="#">step 42</a> , <a href="#">Note 1</a> .   |    |      |                     |  |                        |                               |
| no errors are detected | go to <a href="#">step 43</a>  |    |      |                     |  |                        |                               |
| 42                     | To isolate and resolve the problem <ol style="list-style-type: none"> <li>a. clean the fibers and connectors on the optical components along the path between the upstream OTR or Muxponder and the pass-through OTR, for example, ECTs, PBEs, APBEs, OFA circuit packs, and patch panels. For information on cleaning, see “<a href="#">Cleaning connectors</a>” in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201</li> <li>b. check the Tx and Rx power levels</li> <li>c. replace the upstream OTR or Muxponder. See <a href="#">Note 2</a>.</li> <li>d. replace the pass-through OTR. See <a href="#">Note 2</a>.</li> </ol> <p><b>Note 1:</b> Retest the loopback after completing each substep. When no errors are detected, go to <a href="#">step 43</a>.</p> <p><b>Note 2:</b> Follow appropriate procedures in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p> |    |      |                     |  |                        |                               |
| 43                     | Clear the pass-through facility loopback. Follow <a href="#">Procedure 3-60</a> , “ <a href="#">Removing a loopback using the System Manager</a> ”, in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                     |  |                        |                               |

—continued—

## Procedure 4-4 (continued)

**Testing graduated loopback**

| Step | Action  |
|------|---|
| 44   | Put the pass-through OTR line-side facility back in-service. Follow <a href="#">Procedure 3-10</a> , “ <a href="#">Putting a circuit pack or SFP facility in-service</a> ”, in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |

**Performing a pass-through OTR or Muxponder client-side facility loopback**

| 45                     | Put the facility of the pass-through OTR or Muxponder that you are testing out-of-service (see <a href="#">Figure 4-10 on page 4-33</a> ). Follow <a href="#">Procedure 3-13</a> , “ <a href="#">Taking a circuit pack facility or SFP facility out-of-service</a> ”, in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                     |   |                        |                               |
|------------------------|--|----|------|---------------------|---|------------------------|-------------------------------|
| 46                     | Start a facility loopback on the pass-through OTR or Muxponder client-side. Follow <a href="#">Procedure 3-59</a> , “ <a href="#">Creating and modifying a loopback using the System Manager</a> ”, in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Be sure to select Terminal for the type of loopback.<br><i>A Loopback Alarm appears in the Active Alarms tab.</i>  |    |      |                     |   |                        |                               |
| 47                     | Reset the optical test set and monitor the return signal for at least 30 seconds.  |    |      |                     |   |                        |                               |
| 48                     | Check for errors.  |    |      |                     |   |                        |                               |
|                        | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>errors are detected</td> <td>the problem is on the pass-through OTRs, Muxponders, or the patch cords that interconnect the pass-through OTRs or Muxponders. Go to <a href="#">step 49</a>. See <a href="#">step 49</a>, <a href="#">Note 1</a>.</td> </tr> <tr> <td>no errors are detected</td> <td>go to <a href="#">step 50</a></td> </tr> </tbody> </table>   | If | Then | errors are detected | the problem is on the pass-through OTRs, Muxponders, or the patch cords that interconnect the pass-through OTRs or Muxponders. Go to <a href="#">step 49</a> . See <a href="#">step 49</a> , <a href="#">Note 1</a> . | no errors are detected | go to <a href="#">step 50</a> |
| If                     | Then   |    |      |                     |   |                        |                               |
| errors are detected    | the problem is on the pass-through OTRs, Muxponders, or the patch cords that interconnect the pass-through OTRs or Muxponders. Go to <a href="#">step 49</a> . See <a href="#">step 49</a> , <a href="#">Note 1</a> .  |    |      |                     |   |                        |                               |
| no errors are detected | go to <a href="#">step 50</a>  |    |      |                     |   |                        |                               |
| 49                     | To isolate and resolve the problem <ol style="list-style-type: none"> <li>verify the Tx and Rx power levels on the pass-through OTRs or Muxponders client-side interfaces</li> <li>replace the pass-through OTRs or Muxponders. See <a href="#">Note 2</a>.</li> </ol> <p><b>Note 1:</b> Retest the loopback after replacing each circuit pack. When no errors are detected, go to <a href="#">step 50</a>.</p> <p><b>Note 2:</b> Follow the appropriate procedure in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p> |    |      |                     |   |                        |                               |
| 50                     | Clear the pass-through facility loopback. Follow <a href="#">Procedure 3-60</a> , “ <a href="#">Removing a loopback using the System Manager</a> ”, in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                     |   |                        |                               |
| 51                     | Put the pass-through OTR or Muxponder client-side facility back in-service. Follow <a href="#">Procedure 3-10</a> , “ <a href="#">Putting a circuit pack or SFP facility in-service</a> ”, in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                     |   |                        |                               |
| 52                     | Repeat <a href="#">step 38</a> to <a href="#">step 51</a> if the path includes other regenerator sites.  |    |      |                     |   |                        |                               |

—continued—

Procedure 4-4 (continued)

**Testing graduated loopback**

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**Performing a far-end OCLD, or OTR or Muxponder line-side facility loopback**

- 53 Put the far-end OCLD facility, or OTR or Muxponder line-side facility that you are testing out-of-service (see [Figure 4-8 on page 4-32](#), [Figure 4-9 on page 4-32](#) or [Figure 4-10 on page 4-33](#)). Follow [Procedure 3-13, “Taking a circuit pack facility or SFP facility out-of-service”](#), in *Provisioning and Operating Procedures*, 323-1701-310.
- 54 Start a facility loopback on the far-end OCLD, or OTR or Muxponder line-side. Follow [Procedure 3-59, “Creating and modifying a loopback using the System Manager”](#), in *Provisioning and Operating Procedures*, 323-1701-310. Be sure to select Facility for the type of loopback.  
*A Loopback Alarm appears in the Active Alarms tab.*
- 55 Reset the optical test set and monitor the return signal for at least 30 seconds.
- 56 Check for errors.
- | If                     | Then   |
|------------------------|--|
| errors are detected    | the problem is either on the facilities between the upstream OCLDs, OTRs, or Muxponders, or on the far-end OCLD, OTR, or Muxponder.<br>Go to <a href="#">step 57</a> . See <a href="#">step 57, Note 1</a> . |
| no errors are detected | go to <a href="#">step 58</a>  |
- 57 To isolate and resolve the problem
- clean the fibers and connectors on the optical components along the path between the upstream OCLD, OTR, or Muxponder and far-end OCLD, OTR, or Muxponder, for example, ECTs, PBEs, APBEs, OFA circuit packs, and patch panels. For information on cleaning, see [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201
  - check the Tx and Rx power levels.
  - replace the upstream OCLD, OTR, or Muxponder. See [Note 2](#).
  - replace the far-end OCLD, OTR, or Muxponder. See [Note 2](#).
- Note 1:** Retest the loopback after completing each substep. When no errors are detected, go to [step 58](#).
- Note 2:** Follow the replacement procedure appropriate to the type of circuit pack in *Maintenance and Replacement Procedures*, 323-1701-546.
- 58 Clear the far-end facility loopback. Follow [Procedure 3-60, “Removing a loopback using the System Manager”](#), in *Provisioning and Operating Procedures*, 323-1701-310.

—continued—

Procedure 4-4 (continued)

**Testing graduated loopback**

| Step | Action   |
|------|--|
| 59   | Put the OCLD facility, or OTR or Muxponder line-side facility, back in-service. Follow <a href="#">Procedure 3-10, "Putting a circuit pack or SFP facility in-service"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |

**Performing a far-end OCI or Muxponder client-side terminal loopback**

60 Put the facility of the far-end OCI or Muxponder client-side that you are testing out-of-service (see [Figure 4-8 on page 4-32](#)). Follow [Procedure 3-13, "Taking a circuit pack facility or SFP facility out-of-service"](#), in *Provisioning and Operating Procedures*, 323-1701-310.

61 Start a terminal loopback on the far-end OCI or Muxponder client-side. Follow [Procedure 3-59, "Creating and modifying a loopback using the System Manager"](#), in *Provisioning and Operating Procedures*, 323-1701-310. Be sure to select Terminal for the type of loopback.

*A Loopback Alarm appears in the Active Alarms tab.*

62 Reset the optical test set and monitor the return signal for at least 30 seconds.

63 Check for errors.

| If                     | Then  |
|------------------------|---|
| errors are detected    | the problem is at the far-end OCLD, OCM, OCI, or Muxponder. Go to <a href="#">step 64</a> . See <a href="#">step 64, Note 1</a> . |
| no errors are detected | go to <a href="#">step 65</a>   |

64 To isolate and resolve the problem

- a. replace the far-end OCLD. See [Note 2](#).
- b. replace the far-end OCM. See [Note 2](#).
- c. replace the far-end OCI. See [Note 2](#).
- d. replace the far-end Muxponder or SFP. See [Note 2](#).

**Note 1:** Retest the loopback after replacing each circuit pack. When no errors are detected, go to [step 65](#).

**Note 2:** Follow the replacement procedure appropriate to the type of circuit pack in *Maintenance and Replacement Procedures*, 323-1701-546.

65 Clear the far-end OCI or Muxponder client-side terminal loopback. Follow [Procedure 3-60, "Removing a loopback using the System Manager"](#), in *Provisioning and Operating Procedures*, 323-1701-310.

66 Put the OCI or Muxponder client-side facility back in-service. Follow [Procedure 3-10, "Putting a circuit pack or SFP facility in-service"](#), in *Provisioning and Operating Procedures*, 323-1701-310.

67 If errors still occur, contact Nortel Networks Technical Support.

—continued—

## 4-46 Installation troubleshooting procedures

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Procedure 4-4 (continued)

### Testing graduated loopback

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| Step | Action   |
|------|--|
| 68   | If you have completed the graduated loopback testing, and you set a Force switch on the path, remove the switch. Follow <a href="#">Procedure 3-47, "Removing a manual, force, or lockout switch from a protection path"</a> , in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |

—end—

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## Clearing OCI and OCI SRM alarms

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Use the procedures in this chapter to clear OCI and OCI SRM alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, contact your next level of technical support.

For a list of OCI and OCI SRM circuit pack types, see the “OCI circuit packs” section in *Hardware Description*, 323-170-102.

In the System Manager, alarms raised against OCI SRM, OCI SRM SONET/SDH, OCI SRM SONET/SDH LTE, and OCI SRM ESCON circuit packs are shown as SRM alarms.

In the System Manager, alarms raised against OCI SRM GbE/FC or OCI SRM GbE circuit packs are shown as GFSRM alarms. To clear GFSRM alarms, go to [Chapter 6, “Clearing OCI SRM GbE/FC and OCI SRM GbE alarms”](#).

[Table 5-1](#) lists the meaning of the indicator lamps on OCI circuit packs. [Table 5-2](#) lists the meaning of the indicator lamps on OCI SRM, OCI SRM SONET/SDH, and OCI SRM SONET/SDH LTE circuit packs. [Table 5-3](#) lists the meaning of the indicator lamps on OCI SRM ESCON circuit packs.

**Table 5-1**  
**Indicator lamps on OCI circuit pack**

| Indicator lamp | Color  | State | Meaning   |
|----------------|--------|-------|---|
| LOS            | yellow | on    | The OCI cannot detect a signal or the signal is invalid. (See <a href="#">Note 1.</a> ) |
|                |        | off   | The OCI is receiving a signal.  |

5-2 Clearing OCI and OCI SRM alarms

**Table 5-1 (continued)  
Indicator lamps on OCI circuit pack**

| Indicator lamp  | Color     | State    | Meaning   |
|---|-----------|----------|---|
| ACTIVE  | green     | on       | There is a channel assignment between the OCI and an OCLD, and the OCI facility is in-service.  |
|   |           | off      | There is a channel assignment between the OCI and an OCLD, and the OCI facility is out-of-service <b>OR</b> there is no channel assignment between the OCI and an OCLD (the OCI facility is either in-service or out-of-service). |
| STATUS  | green/red | green    | The OCI inventory is in-service. (See <a href="#">Note 2.</a> )   |
|   |           | red      | The OCI has failed.   |
|   |           | off      | The OCI inventory is out-of-service.  |
|   |           | flashing | The OCI is the active database-carrying circuit pack during a database copy operation. (See <a href="#">Note 3.</a> )   |
| <p><b>Note 1:</b> The LOS indicator lamp turns on if there is a loss of optical signal, a loss of lock (the frequency of the input signal is incorrect), or a loss of frame (for a SONET/SDH signal only, the framer is unable to find three frames in a row).</p> <p><b>Note 2:</b> A green STATUS lamp does not indicate the presence of traffic.</p> <p><b>Note 3:</b> Do not remove the active database-carrying circuit pack during the database copy to the standby circuit pack.</p> |           |          |   |

**Table 5-2  
Indicator lamps on the OCI SRM, OCI SRM SONET/SDH, and OCI SRM SONET/SDH LTE circuit packs**

| Indicator lamp                         | Color  | State | Meaning   |
|--|--------|-------|---|
| LOS (four lamps, one for each port)    | yellow | on    | The circuit pack is not receiving a valid optical signal on the provisioned facility.   |
|  |        | off   | The circuit pack is receiving a valid optical signal on the provisioned facility  |
| ACTIVE (four lamps, one for each port) | green  | on    | There is a channel assignment between the circuit pack and an OCLD, and the circuit pack facility is in-service.  |
|  |        | off   | There is a channel assignment between the circuit pack and an OCLD, and the circuit pack facility is out-of-service <b>OR</b> there is no channel assignment between the circuit pack and an OCLD (the circuit pack facility is either in-service or out-of-service). |

**Table 5-2 (continued)**  
**Indicator lamps on the OCI SRM, OCI SRM SONET/SDH, and OCI SRM SONET/SDH LTE circuit packs**

| Indicator lamp   | Color         | State    | Meaning   |
|--|---------------|----------|---|
| STATUS   | green/<br>red | green    | The circuit pack is operating properly and the equipment is in-service.   |
|  |               | red      | The circuit pack has failed.  |
|  |               | off      | The OCI circuit pack has not failed but the equipment is out-of-service.  |
|  |               | flashing | The OCI SRM is the active database-carrying circuit pack during a database copy operation. (See <a href="#">Note</a> .) |
| <b>Note:</b> Do not remove the active database-carrying circuit pack during the database copy to the standby circuit pack. |               |          |   |

**Table 5-3**  
**Indicator lamps on the OCI SRM ESCON circuit pack**

| Indicator lamp | Color  | State | Meaning  |
|----------------|--------|-------|--|
| LOS            | yellow | on    | The OCI SRM ESCON is not receiving a valid optical signal on at least one of its in-service facilities. (See <a href="#">Note 1</a> .)           |
|                |        | off   | The OCI SRM ESCON is receiving a valid optical signal on all of its in-service facilities. (See <a href="#">Notes 2</a> and <a href="#">3</a> .) |
| ACTIVE         | green  | on    | At least one facility is in-service with channel assignment. (See <a href="#">Notes 1</a> and <a href="#">2</a> .)                               |
|                |        | off   | All provisioned facilities are out-of-service or there are no channel assignments on any facilities. (See <a href="#">Note 3</a> .)              |

**Table 5-3 (continued)**  
**Indicator lamps on the OCI SRM ESCON circuit pack**

| Indicator lamp | Color         | State    | Meaning   |
|----------------|---------------|----------|---|
| STATUS         | green/<br>red | green    | The OCI SRM ESCON circuit pack is operating properly and the equipment is in-service.   |
|                |               | red      | The OCI SRM ESCON circuit pack has failed.  |
|                |               | off      | The OCI SRM ESCON circuit pack has not failed but the equipment is out-of-service.  |
|                |               | flashing | The OCI SRM ESCON is the active database-carrying circuit pack during a database copy operation. (See <a href="#">Note 4.</a> ) |

**Note 1:** With the LOS indicator lamp on and the ACTIVE indicator lamp on, there is at least one facility in-service with a channel assignment and one or more faulty ports. It is not safe to remove the fiber from the circuit pack. The operator must use the SMI to determine which port(s) are faulty before any action can be taken.

**Note 2:** With the LOS indicator lamp off and the ACTIVE indicator lamp on, there is at least one facility in-service with a channel assignment and all running error-free traffic. It is not safe to remove the fiber from the circuit pack.

**Note 3:** With the LOS indicator lamp off and the ACTIVE indicator lamp off, all provisioned facilities are out-of-service or there are no channel assignments. It is safe to remove the fiber from the circuit pack.

**Note 4:** Do not remove the active database-carrying circuit pack during the database copy to the standby circuit pack.

**Before you begin**

Read “[Troubleshooting the Optical Metro 5100/5200](#)” chapter in this book for detailed information on how to respond to alarm indicators (audible alarms and lamps). The “[Alarm description](#)” chapter in this book explains events, warnings, and error messages.

**Requirements**



**CAUTION**  
**Risk of electrostatic discharge**  
 Observe all antistatic precautions when handling the circuit packs.

Exposed circuit packs can be damaged by electrostatic discharge. When handling circuit packs always wear a wrist strap that is grounded to the shelf maintenance panel, and shoe straps if necessary. For more information, refer to the “[Handling circuit packs](#)” section of “[Isolating faults that do not generate alarms](#)” in this book.

**ATTENTION**

When you clear this alarm on Optical Metro 5100 shelves, make sure that the SP, and at least one non-SP circuit pack that is carrying the database is seated in the shelf, and the software is in a committed state. The System Manager shows database-carrying circuit packs in bold text. You can also use the Optical Metro Inventory dialog box to locate the standby database.

**CAUTION****Risk of personal injury**

The Optical Metro 5100/5200 operates up to a Hazard Level of k x 3A (IEC 60825-2:2000) or 1M (IEC 60825-2:2004). Use only viewing instruments with proper optical attenuation.

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

## Procedure list

The OCI and OCI SRM alarms are listed alphabetically.

Table 5-4 lists the procedures in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

**Table 5-4**  
**Procedures for clearing OCI and OCI SRM alarms**

| Procedure  | Page | Alarm is masked if equipment or facility is OOS |
|--|------|---|
| 5-1 OCI—Autoprovisioning Mismatch, Circuit Pack Mismatch                     | 5-8  | Equipment                                       |
| 5-2 OCI—Automatic Switch to Protection Path active                           | 5-12 | Not applicable                                  |
| 5-3 OCI—Backplane Loss of Activity   | 5-13 | Equipment                                       |
| 5-4 OCI—Circuit Pack Failed  | 5-17 | Equipment                                       |
| 5-5 OCI—Circuit Pack Missing   | 5-19 | Equipment                                       |
| 5-6 OCI—Facility Loopback, Terminal Loopback                                 | 5-22 | Not applicable                                  |
| 5-7 OCI—Forced Switch to East Path Active, Forced Switch to West Path Active | 5-24 | Not applicable                                  |
| 5-8 OCI—High Optical Power   | 5-25 | Facility  |
| 5-9 OCI—High Optical Power Warning   | 5-29 | Facility  |
| 5-10 OCI—Inter-card Communication Failure                                    | 5-32 | Equipment                                       |
| 5-11 OCI—Invalid Signal (backplane)  | 5-35 | Facility  |
| 5-12 OCI—Invalid Signal (SRM port)   | 5-41 | Facility  |
| 5-13 OCI—Loss of Clock   | 5-44 | Equipment                                       |
| 5-14 OCI—Loss of Frame (optical receiver)                                    | 5-48 | Facility  |
| 5-15 OCI—Loss of Frame (Tx backplane)  | 5-52 | Facility  |
| 5-16 OCI—Loss of Frame (Tx optical port)                                     | 5-56 | Facility  |
| 5-17 OCI—Loss of Lock  | 5-59 | Facility  |
| 5-18 OCI—Loss of Signal  | 5-63 | Facility  |
| 5-19 OCI—Low Optical Power Warning   | 5-67 | Facility  |
| 5-20 OCI—Manual Switch to (West) or (East) path active                       | 5-70 | Not applicable                                  |
| 5-21 OCI—Path Lockout Active   | 5-71 | Not applicable                                  |
| 5-22 OCI—Performance Monitoring Timer Failed                                 | 5-72 | Equipment                                       |

**Table 5-4 (continued)**  
**Procedures for clearing OCI and OCI SRM alarms**

| <b>Procedure</b>                                    | <b>Page</b> | <b>Alarm is masked if equipment or facility is OOS</b> |
|---|-------------|--|
| 5-23 OCI—SRM Loss of Pointer                        | 5-75        | Facility   |
| 5-24 OCI—SRM Loss of Primary Clock Source warning   | 5-77        | Equipment  |
| 5-25 OCI—SRM Loss of Secondary Clock Source warning | 5-82        | Equipment  |
| 5-26 OCI—SRM Path Alarm Indication Signal           | 5-87        | Facility   |
| 5-27 OCI—SRM Port Alarm Indication Signal           | 5-91        | Facility   |
| 5-28 OCI—SRM Port Failure                           | 5-95        | Facility   |
| 5-29 OCI—SRM Port Mapping Fault                     | 5-97        | Facility   |
| 5-30 OCI—SRM—Remote Defect Indication               | 5-99        | Facility   |
| 5-31 OCI—SRM Rx Signal Degrade                      | 5-101       | Facility   |
| 5-32 OCI—SRM Rx Signal Failure                      | 5-105       | Facility   |
| 5-33 OCI—TCA - Optical Power Rx High                | 5-109       | Facility   |
| 5-34 OCI—TCA - Optical Power Rx Low                 | 5-112       | Facility   |
| 5-35 OCI—TCA - Optical Power Tx High                | 5-116       | Facility   |
| 5-36 OCI—TCA - Optical Power Tx Low                 | 5-118       | Facility   |
| 5-37 OCI—Transceiver Degrade                        | 5-121       | Equipment  |
| 5-38 OCI—Unequipped or OOS Remote SRM Port          | 5-123       | Facility   |
| 5-39 OCI—Unknown Circuit Pack                       | 5-125       | Equipment  |

## Procedure 5-1

# OCI—Autoprovisioning Mismatch, Circuit Pack Mismatch

### Probable cause

The Autoprovisioning Mismatch alarm becomes active if an identifiable circuit pack fails to autoprovision when inserted into a shelf due to a violation of Optical Metro 5100/5200 provisioning rules. For example:

- an OCI is seated in an OFA shelf (OCI circuit packs are supported in WDM shelves only)
- the wrong type of OCI, or a non-OCI circuit pack, is installed in a provisioned OCI slot
- a double-slot circuit pack is inserted in a shelf where the second slot has another one-slot circuit pack pre-provisioned
- if the maximum number of supported client circuit packs are already provisioned on the shelf (two for Optical Metro 5100 shelves, and eight for Optical Metro 5200 shelves)

### Impact

[Table 5-5](#) lists the impact that these alarms have under different conditions.

**Table 5-5**  
**OCI Autoprovisioning Mismatch and Circuit Pack Mismatch alarm impact**

| Alarm                     | Conditions  | Severity | Impact                |
|---------------------------|---|----------|-----------------------|
| Autoprovisioning Mismatch | See <a href="#">“Probable cause”</a>  | Major    | Non-service-affecting |
| Circuit Pack Mismatch     | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|                           | If there are no channel assignments on the circuit pack.                                  | Major    | Non-service-affecting |

—continued—

Procedure 5-1 (continued)

**OCI—Autoprovisioning Mismatch, Circuit Pack Mismatch****Precautions****ATTENTION**

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.

**CAUTION****Risk of recovery procedures affecting traffic**

This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**Action**

| Step   | Action   |                             |             |   |   |  |  |   |                              |
|--|--|-----------------------------|-------------|---|---|--|--|---|------------------------------|
| 1  | Determine the shelf type: OADM, Terminal, or OFA. On the Configuration-Communications screen of the System Manager, look in the “Shelf Type” column.   |                             |             |   |   |  |  |   |                              |
| 2  | <table border="0"> <tr> <td><b>If</b> the shelf type is</td> <td><b>Then</b></td> </tr> <tr> <td>an OFA shelf and should be an OFA shelf</td> <td>remove any circuit packs other than OFAs or APBEs that are seated in slots 1-8 or 11-18. Go to <a href="#">step 3</a>.</td> </tr> <tr> <td>an OFA shelf but should be an OADM or terminal shelf</td> <td>follow <a href="#">Procedure 4-1 “Decommissioning a shelf”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310, and <a href="#">Chapter 3 “Commissioning a shelf”</a> in <i>Commissioning Procedures</i>, 323-1701-220. Go to <a href="#">step 4</a>.</td> </tr> <tr> <td>the shelf type is an OADM or terminal shelf</td> <td>go to <a href="#">step 4</a></td> </tr> </table> | <b>If</b> the shelf type is | <b>Then</b> | an OFA shelf and should be an OFA shelf | remove any circuit packs other than OFAs or APBEs that are seated in slots 1-8 or 11-18. Go to <a href="#">step 3</a> . | an OFA shelf but should be an OADM or terminal shelf | follow <a href="#">Procedure 4-1 “Decommissioning a shelf”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310, and <a href="#">Chapter 3 “Commissioning a shelf”</a> in <i>Commissioning Procedures</i> , 323-1701-220. Go to <a href="#">step 4</a> . | the shelf type is an OADM or terminal shelf | go to <a href="#">step 4</a> |
| <b>If</b> the shelf type is                          | <b>Then</b>  |                             |             |   |   |  |  |   |                              |
| an OFA shelf and should be an OFA shelf              | remove any circuit packs other than OFAs or APBEs that are seated in slots 1-8 or 11-18. Go to <a href="#">step 3</a> .  |                             |             |   |   |  |  |   |                              |
| an OFA shelf but should be an OADM or terminal shelf | follow <a href="#">Procedure 4-1 “Decommissioning a shelf”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310, and <a href="#">Chapter 3 “Commissioning a shelf”</a> in <i>Commissioning Procedures</i> , 323-1701-220. Go to <a href="#">step 4</a> .   |                             |             |   |   |  |  |   |                              |
| the shelf type is an OADM or terminal shelf          | go to <a href="#">step 4</a>   |                             |             |   |   |  |  |   |                              |

—continued—

## 5-10 Clearing OCI and OCI SRM alarms

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Procedure 5-1 (continued)

### OCI—Autoprovisioning Mismatch, Circuit Pack Mismatch

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| Step | Action   |                                    |
|------|--|------------------------------------|
| 3    | <b>If</b>  | <b>Then</b>                        |
|      | the alarm clears   | you have completed this procedure  |
|      | the alarm remains  | contact your next level of support |
| 4    | Make sure the circuit pack in the slot is a circuit pack of  |                                    |
|      | <ul style="list-style-type: none"><li>• the correct type</li><li>• the correct bit rate</li><li>• the correct wavelength</li></ul>   |                                    |
| 5    | Make sure the connection type and bit rate for the OCI are provisioned correctly and are consistent with the subtending equipment. Double-click on the OCI in the Equipment-Inventory list. Under “Provisioning Data” check to see that the “Circuit Pack Type” and “Max Bit Rate” correctly correspond to the actual circuit pack seated in the slot. |                                    |
| 6    | <b>If</b> the slot is  | <b>Then</b> go to                  |
|      | incorrectly provisioned  | the next step                      |
|      | correctly provisioned  | step 12                            |
| 7    | Take the OCI OOS. Follow <a href="#">Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”</a> (if applicable), and then <a href="#">Procedure 3-8 “Taking a circuit pack or SFP out-of-service”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |                                    |
| 8    | If there are facilities associated with the OCI, delete them. Follow <a href="#">Procedure 3-14 “Deleting a circuit pack or SFP facility”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |                                    |
| 9    | Delete the OCI equipment. Follow <a href="#">Procedure 3-9 “Deleting a circuit pack or SFP from the inventory”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |                                    |

—continued—

Procedure 5-1 (continued)

**OCI—Autoprovisioning Mismatch, Circuit Pack Mismatch**

| Step      | Action  |   |  |  |  |           |  |             |  |
|-----------|---|---|--|--|--|-----------|--|-------------|--|
| 10        | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">you need to manually pre-provision the slot</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> procedures in <i>Provisioning and Operating Procedures</i>, 323-1701-310. Go to the next step.</td> </tr> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">you do not need to manually pre-provision the slot</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">insert the correct OCI and it auto-provisions. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201, or <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i>, 323-1701-210. Go to the next step.</td> </tr> </table> | <b>If</b>                                   | you need to manually pre-provision the slot  | <b>Then</b>  | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> procedures in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. | <b>If</b> | you do not need to manually pre-provision the slot | <b>Then</b> | insert the correct OCI and it auto-provisions. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201, or <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i> , 323-1701-210. Go to the next step. |
|           | <b>If</b>   | you need to manually pre-provision the slot | <b>Then</b>  | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> procedures in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. |  |           |  |             |  |
| <b>If</b> | you do not need to manually pre-provision the slot  | <b>Then</b>                                 | insert the correct OCI and it auto-provisions. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201, or <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i> , 323-1701-210. Go to the next step. |  |  |           |  |             |  |
| 11        | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the alarm clears</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">you have completed this procedure</td> </tr> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the alarm remains</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">go to the next step</td> </tr> </table>  | <b>If</b>                                   | the alarm clears   | <b>Then</b>  | you have completed this procedure  | <b>If</b> | the alarm remains                                  | <b>Then</b> | go to the next step  |
|           | <b>If</b>   | the alarm clears                            | <b>Then</b>  | you have completed this procedure  |  |           |  |             |  |
| <b>If</b> | the alarm remains   | <b>Then</b>                                 | go to the next step  |  |  |           |  |             |  |
| 12        | <div style="border: 1px solid black; padding: 5px;">  <p><b>CAUTION</b><br/> <b>Risk of traffic loss</b><br/>                     Reseating the OCI circuit pack causes a loss of traffic. If possible, reroute the traffic to another system.</p> </div> <p>Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p> <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the alarm clears</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">you have completed this procedure</td> </tr> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the alarm remains</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">go to the next step</td> </tr> </table>  | <b>If</b>                                   | the alarm clears   | <b>Then</b>  | you have completed this procedure  | <b>If</b> | the alarm remains                                  | <b>Then</b> | go to the next step  |
| <b>If</b> | the alarm clears  | <b>Then</b>                                 | you have completed this procedure  |  |  |           |  |             |  |
| <b>If</b> | the alarm remains   | <b>Then</b>                                 | go to the next step  |  |  |           |  |             |  |
| 13        | <p>Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p> <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the alarm clears</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the alarm remains</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </table>  | <b>If</b>                                   | the alarm clears   | <b>Then</b>  | the removed circuit pack has faults. You have completed this procedure.  | <b>If</b> | the alarm remains                                  | <b>Then</b> | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |
|           | <b>If</b>   | the alarm clears                            | <b>Then</b>  | the removed circuit pack has faults. You have completed this procedure.  |  |           |  |             |  |
| <b>If</b> | the alarm remains   | <b>Then</b>                                 | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |  |  |           |  |             |  |

—end—

## Procedure 5-2 OCI—Automatic Switch to Protection Path active

---

### Probable cause

This alarm becomes active when a fault occurs on the working path of a protected, revertive connection, and traffic is automatically switched from the working path to the protection path.

This alarm is available only if the Revertive mode is enabled for the given connection.

### Impact

Minor, non-service-affecting.

*Note:* The channel is running unprotected until the fault on the working path is corrected.

### Action

---

| Step                                   | Action  |
|--|---|
| 1                                      | Using the Connections—Channel Assignments—Protection screen in System Manager, verify the Rx Reversion WTR time settings.   |
| 2                                      | Using the Fault—Active Alarms window in System Manger, check the working path for alarms.   |
| 3                                      | Follow the appropriate procedures to clear the alarms on the working path.<br><i>Note:</i> The “Automatic Switch to Protection Path Active” alarm will not clear until the Wait-to-Restore (WTR) period has expired. Look under Fault-Event Console to find out when the WTR timer started. |
| <b>If</b>                              | <b>Then</b>   |
| the alarm clears after the WTR period  | you have completed this procedure   |
| the alarm remains after the WTR period | contact your next level of support  |

—end—

---

## Procedure 5-3

# OCI—Backplane Loss of Activity

---

To clear the alarm on an Optical Metro 5200 shelf, perform steps [1](#) to [5](#) only.

To clear the alarm on an Optical Metro 5100 shelf, perform steps [6](#) to [11](#) only.

### Probable cause

#### Optical Metro 5200

This alarm becomes active when the OCI circuit pack does not detect activity from the OCM in slot 9, or slot 10.

#### Optical Metro 5100

This alarm becomes active when the OCI circuit pack does not detect activity from the OCLD in slot 2, or slot 4.

### Impact

Critical, service-affecting if there are channel assignments on the circuit pack, and the circuit pack is in-service.

### Precautions



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-3 (continued)  
**OCI—Backplane Loss of Activity**

**Action**

| Step | Action |
|------|--------|
|------|--------|

**Clearing the alarm on an Optical Metro 5200 shelf**

|   |  |   |
|---|--|---|
| <b>1</b>  | <b>If</b>  | <b>Then</b>   |
|   | the OCI raises the alarm against both OCMs   | complete steps <b>2</b> to <b>3</b> only. If the alarm does not clear, contact your next level of support.  |
|   | the OCI raises the alarm against one OCM   | go to the next step and complete all the steps in this procedure  |
| <b>Note:</b> New alarms may be raised when you reseat or replace an OCM. Ignore any new alarms until you have completed this procedure. |  |   |
| <b>2</b>  | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |   |
|   | <b>If</b>  | <b>Then</b>   |
|   | the alarm clears   | you have completed this procedure   |
|   | the alarm remains  | go to the next step   |
| <b>3</b>  | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |   |
|   | <b>If</b>  | <b>Then</b>   |
|   | the alarm clears   | the removed circuit pack has faults. You have completed this procedure.   |
|   | the alarm remains  | the circuit pack is not the problem. Reseat the original circuit pack.<br><br>If the OCI raised the alarm against both OCMs, contact your next level of support.<br><br>If the OCI raised the alarm against one OCM, go to the next step. |

—continued—

Procedure 5-3 (continued)  
**OCI—Backplane Loss of Activity**

| Step              | Action   |    |      |                  |   |                   |
|-------------------|--|----|------|------------------|---|-------------------|
| 4                 | Reseat the OCM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                  |   |                   |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains |
| If                | Then   |    |      |                  |   |                   |
| the alarm clears  | you have completed this procedure  |    |      |                  |   |                   |
| the alarm remains | go to the next step  |    |      |                  |   |                   |
| 5                 | Replace the specified OCM. Follow <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. .   |    |      |                  |   |                   |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains |
| If                | Then   |    |      |                  |   |                   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |    |      |                  |   |                   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |    |      |                  |   |                   |

**Clearing the alarm on an Optical Metro 5100 shelf**

|  |   |
|--|---|
|  | <p><b>CAUTION</b><br/> <b>Risk of traffic loss</b><br/>                     Reseating the OCI circuit pack causes a loss of traffic.<br/>                     If possible, reroute the traffic to another system.</p> |
|--|---|

| 6                 | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |               |             |                  |   |                   |
|-------------------|---|---------------|-------------|------------------|---|-------------------|
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | If            | Then        | the alarm clears | you have completed this procedure                                       | the alarm remains |
| If                | Then  |               |             |                  |   |                   |
| the alarm clears  | you have completed this procedure   |               |             |                  |   |                   |
| the alarm remains | go to the next step   |               |             |                  |   |                   |
| 7                 | <b>If</b> this alarm is reported  |               |             |                  |   |                   |
|                   | <table border="1"> <thead> <tr> <th>by both OCLDs</th> <th>by one OCLD</th> </tr> </thead> <tbody> <tr> <td>the next step</td> <td>step <a href="#">9</a></td> </tr> </tbody> </table>  | by both OCLDs | by one OCLD | the next step    | step <a href="#">9</a>  |                   |
| by both OCLDs     | by one OCLD   |               |             |                  |   |                   |
| the next step     | step <a href="#">9</a>  |               |             |                  |   |                   |
| 8                 | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |               |             |                  |   |                   |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.</td> </tr> </tbody> </table> | If            | Then        | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains |
| If                | Then  |               |             |                  |   |                   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |               |             |                  |   |                   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.   |               |             |                  |   |                   |

—continued—

## 5-16 Clearing OCI and OCI SRM alarms

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Procedure 5-3 (continued)

### OCI—Backplane Loss of Activity

---

| Step | Action   |  |
|------|--|--|
| 9    | <b>If</b><br>the path is protected   | <b>Then</b><br>switch traffic off of the OCLD. Follow <a href="#">Procedure 3-48 “Forcing traffic to one path on a protected channel”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. |
|      | the path is unprotected  | go to the next step. Performing the next step will affect traffic.   |
| 10   | Reseat the OCLD. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.        |  |
|      | <b>If</b><br>the alarm clears<br>the alarm remains   | <b>Then</b><br>you have completed this procedure<br>go to the next step  |
| 11   | Replace the OCLD. Follow <a href="#">Procedure 3-2 “Replacing an OCLD circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |  |
|      | <b>If</b><br>the alarm clears<br>the alarm remains   | <b>Then</b><br>the removed circuit pack has faults. You have completed this procedure.<br>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.                           |

#### ATTENTION

If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow [Procedure 3-49 “Removing a manual, force, or lockout switch from a protection path”](#) in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

## Procedure 5-4 OCI—Circuit Pack Failed

### Probable cause

This alarm becomes active when the circuit pack detects an equipment failure.

### Impact

Table 5-6 lists the impact that this alarm has under different conditions.

**Table 5-6**  
**OCI Circuit Pack Failed alarm impact**

| Alarm               | Conditions  | Severity | Impact                |
|---------------------|---|----------|-----------------------|
| Circuit Pack Failed | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|                     | If there are no channel assignments on the circuit pack.                                  | Major    | Non-service-affecting |

### Precautions

#### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



#### CAUTION

##### Risk of equipment damage

Make sure you know how to handle electronic components correctly before you begin this procedure. Incorrect handling can cause damage to static-sensitive components. Always wear grounded antistatic wrist and shoe straps when handling circuit packs.



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

## 5-18 Clearing OCI and OCI SRM alarms

---

Procedure 5-4 (continued)

### OCI—Circuit Pack Failed

---

## Action

---

| Step              | Action   |
|-------------------|--|
| 1                 | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| 2                 | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

## Procedure 5-5 OCI—Circuit Pack Missing

### Probable cause

This alarm becomes active when the provisioned slot does not contain an OCI circuit pack or the OCI is not correctly seated in the slot.

### Impact

Table 5-7 lists the impact that this alarm has under different conditions.

**Table 5-7**  
**OCI Circuit Pack Missing alarm impact**

| Alarm                | Conditions  | Severity | Impact                |
|----------------------|---|----------|-----------------------|
| Circuit Pack Missing | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|                      | If there are no channel assignments on the circuit pack.                                  | Major    | Non-service-affecting |

### Precautions



#### CAUTION

##### Risk of recovery procedures affecting traffic

This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

#### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.

—continued—

Procedure 5-5 (continued)  
**OCI—Circuit Pack Missing**

**Action**

| Step                                 | Action   |           |             |                                |   |                                      |                                    |                          |              |
|--------------------------------------|--|-----------|-------------|--------------------------------|---|--------------------------------------|------------------------------------|--------------------------|--------------|
| 1                                    | Use System Manager to locate the slot that is indicating the missing circuit pack.   |           |             |                                |   |                                      |                                    |                          |              |
| 2                                    | <p>Make sure that the slot contains an OCI circuit pack.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"><b>If</b></td> <td style="width: 50%; vertical-align: top;"><b>Then</b></td> </tr> <tr> <td style="border-top: 1px solid black;">the slot should contain an OCI</td> <td style="border-top: 1px solid black;">insert and seat an OCI in the slot.<br/>Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> 323-1701-201 OR <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i> 323-1701-210.<br/>Go to step 3.</td> </tr> <tr> <td style="border-top: 1px solid black;">the slot is intentionally left empty</td> <td style="border-top: 1px solid black;">go to step 4</td> </tr> <tr> <td style="border-top: 1px solid black;">the slot contains an OCI</td> <td style="border-top: 1px solid black;">go to step 5</td> </tr> </table>   | <b>If</b> | <b>Then</b> | the slot should contain an OCI | insert and seat an OCI in the slot.<br>Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> 323-1701-201 OR <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i> 323-1701-210.<br>Go to step 3. | the slot is intentionally left empty | go to step 4                       | the slot contains an OCI | go to step 5 |
| <b>If</b>                            | <b>Then</b>  |           |             |                                |   |                                      |                                    |                          |              |
| the slot should contain an OCI       | insert and seat an OCI in the slot.<br>Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> 323-1701-201 OR <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i> 323-1701-210.<br>Go to step 3.  |           |             |                                |   |                                      |                                    |                          |              |
| the slot is intentionally left empty | go to step 4   |           |             |                                |   |                                      |                                    |                          |              |
| the slot contains an OCI             | go to step 5   |           |             |                                |   |                                      |                                    |                          |              |
| 3                                    | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"><b>If</b></td> <td style="width: 50%; vertical-align: top;"><b>Then</b></td> </tr> <tr> <td style="border-top: 1px solid black;">the alarm clears</td> <td style="border-top: 1px solid black;">you have completed this procedure</td> </tr> <tr> <td style="border-top: 1px solid black;">the alarm remains</td> <td style="border-top: 1px solid black;">go to step 5</td> </tr> </table>  | <b>If</b> | <b>Then</b> | the alarm clears               | you have completed this procedure   | the alarm remains                    | go to step 5                       |                          |              |
| <b>If</b>                            | <b>Then</b>  |           |             |                                |   |                                      |                                    |                          |              |
| the alarm clears                     | you have completed this procedure  |           |             |                                |   |                                      |                                    |                          |              |
| the alarm remains                    | go to step 5   |           |             |                                |   |                                      |                                    |                          |              |
| 4                                    | <p>To clear the alarm if the slot is not used, follow these steps:</p> <ol style="list-style-type: none"> <li>a. Take the OCI OOS. Follow <a href="#">Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”</a> (if applicable), and then <a href="#">Procedure 3-8 “Taking a circuit pack or SFP out-of-service”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</li> <li>b. If there are facilities associated with the OCI, delete them. Follow <a href="#">Procedure 3-14 “Deleting a circuit pack or SFP facility”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.<br/><b>Note:</b> If this OCI is a part of a connection, you will have to delete the connection first. Follow <a href="#">Procedure 3-4 “Deleting channel assignments”</a>.</li> <li>c. Delete the OCI equipment. Follow <a href="#">Procedure 3-9 “Deleting a circuit pack or SFP from the inventory”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</li> </ol> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"><b>If</b></td> <td style="width: 50%; vertical-align: top;"><b>Then</b></td> </tr> <tr> <td style="border-top: 1px solid black;">the alarm clears</td> <td style="border-top: 1px solid black;">you have completed this procedure</td> </tr> <tr> <td style="border-top: 1px solid black;">the alarm remains</td> <td style="border-top: 1px solid black;">contact your next level of support</td> </tr> </table> | <b>If</b> | <b>Then</b> | the alarm clears               | you have completed this procedure   | the alarm remains                    | contact your next level of support |                          |              |
| <b>If</b>                            | <b>Then</b>  |           |             |                                |   |                                      |                                    |                          |              |
| the alarm clears                     | you have completed this procedure  |           |             |                                |   |                                      |                                    |                          |              |
| the alarm remains                    | contact your next level of support   |           |             |                                |   |                                      |                                    |                          |              |

—continued—

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 Procedure 5-5 (continued)  
**OCI—Circuit Pack Missing**


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| Step              | Action   |    |      |                  |   |                   |  |
|-------------------|--|----|------|------------------|---|-------------------|--|
| 5                 | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | you have completed this procedure  |    |      |                  |   |                   |  |
| the alarm remains | go to the next step  |    |      |                  |   |                   |  |
| 6                 | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.<br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |    |      |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |    |      |                  |   |                   |  |

—end—

## Procedure 5-6 OCI—Facility Loopback, Terminal Loopback

---

A Facility Loopback alarm means the optical signal received at the OCI Rx input is being looped back to the Tx output without continuing through the circuit pack.

A Terminal Loopback alarm means the signal received at the backplane is looped back to the backplane transmitter without continuing through the circuit pack.

This is a normal indication when the loopback is on for testing or maintenance purposes. A loopback is only allowed when the facility is out-of-service.

### Probable cause

This alarm becomes active when you perform a loopback and the loopback is active.

### Impact

Minor, non-service-affecting.

### Precautions

|   |   |
|---|---|
|  | <p><b>CAUTION</b><br/><b>Risk of affecting network reliability</b><br/>Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “<a href="#">Cleaning connectors</a>” in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> |
|---|---|

### Action

---

| Step  | Action  |   |   |               |                     |
|---|---|---|---|---------------|---------------------|
| 1   | Determine if a facility or terminal loopback is active for testing or maintenance purposes.   |   |   |               |                     |
| 2   | <table><tr><td><b>If</b> the loopback is necessary for testing or maintenance activities</td><td><b>Then</b> you have completed this procedure</td></tr><tr><td>not necessary</td><td>go to the next step</td></tr></table> | <b>If</b> the loopback is necessary for testing or maintenance activities | <b>Then</b> you have completed this procedure | not necessary | go to the next step |
| <b>If</b> the loopback is necessary for testing or maintenance activities | <b>Then</b> you have completed this procedure   |   |   |               |                     |
| not necessary   | go to the next step   |   |   |               |                     |

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—continued—

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 Procedure 5-6 (continued)

**OCI—Facility Loopback, Terminal Loopback**


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| <b>Step</b> | <b>Action</b>   |                                    |
|-------------|---|------------------------------------|
| <b>3</b>    | Release the loopback if it is not necessary.  |                                    |
|             | <ul style="list-style-type: none"> <li>a. use the Equipment-Facilities window of the System Manager to select the facility associated with this slot</li> <li>b. double-click the selected slot</li> <li>c. choose None under Loop Back and click <b>Apply</b></li> <li>d. click <b>OK</b></li> </ul> |                                    |
| <b>4</b>    | <b>If</b>   | <b>Then</b>                        |
|             | the alarm clears  | you have completed this procedure  |
|             | the alarm remains   | contact your next level of support |

—end—

## Procedure 5-7

# OCI—Forced Switch to East Path Active, Forced Switch to West Path Active

---

### Probable cause

This alarm becomes active when you perform a force switch on the specified path and the force switch is active.

This is a normal indication when a forced switch is used for testing or maintenance activities.

### Impact

Minor, non-service-affecting.

### Action

---

| Step  | Action  |                         |      |   |                                   |                   |                                    |
|---|---|-------------------------|------|---|-----------------------------------|-------------------|------------------------------------|
| 1   | Determine if a Force Switch is active for testing or maintenance purposes.  |                         |      |   |                                   |                   |                                    |
| 2   | <table><thead><tr><th>If the forced switch is</th><th>Then</th></tr></thead><tbody><tr><td>necessary for testing or maintenance activities</td><td>you have completed this procedure</td></tr><tr><td>not necessary</td><td>go to the next step</td></tr></tbody></table> | If the forced switch is | Then | necessary for testing or maintenance activities | you have completed this procedure | not necessary     | go to the next step                |
| If the forced switch is                         | Then  |                         |      |   |                                   |                   |                                    |
| necessary for testing or maintenance activities | you have completed this procedure   |                         |      |   |                                   |                   |                                    |
| not necessary                                   | go to the next step   |                         |      |   |                                   |                   |                                    |
| 3   | Release the force switch if it is not necessary. Follow <a href="#">Procedure 3-49 “Removing a manual, force, or lockout switch from a protection path”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |                         |      |   |                                   |                   |                                    |
|   | <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>contact your next level of support</td></tr></tbody></table>                                  | If                      | Then | the alarm clears                                | you have completed this procedure | the alarm remains | contact your next level of support |
| If  | Then  |                         |      |   |                                   |                   |                                    |
| the alarm clears                                | you have completed this procedure   |                         |      |   |                                   |                   |                                    |
| the alarm remains                               | contact your next level of support  |                         |      |   |                                   |                   |                                    |

---

—end—

## Procedure 5-8

# OCI—High Optical Power

### Probable cause

This alarm becomes active when the optical power level at the optical receiver has exceeded the Rx Fail Threshold of the Rx Power High parameter. One of the following conditions exists:

- the power of the signal being transmitted by the subtending equipment is too high
- the receiving OCI circuit pack is defective
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly

### Impact

Table 5-8 lists the impact that this alarm has under different conditions.

**Table 5-8**  
**OCI Rx High Optical Power alarm impact**

| Alarm                 | Conditions  | Severity | Impact                |
|-----------------------|---|----------|-----------------------|
| Rx High Optical Power | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|                       | If there are no channel assignments on the circuit pack.                                  | Major    | Non-service-affecting |

### Precautions

#### **ATTENTION**

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.

—continued—

Procedure 5-8 (continued)  
**OCI—High Optical Power**

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**CAUTION**

**Risk of recovery procedures affecting traffic**

This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.



**CAUTION**

**Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**Action**

---

**Step    Action**

---

- 1      Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the Rx power level is within the operational threshold. Write down the value. Refer to [Table 2-1](#) or [Table 2-2](#) in *Technical Specifications*, 323-1701-180 for the correct values.



**CAUTION**

**Risk of recovery procedures affecting traffic**

Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).

Dropping traffic can be avoided if the OCI supports power monitoring on the client-side. Use the System Manager by selecting the “Equipment” tab then “Facilities”. This avoids having to disconnect the Rx fiber of the OCI.

—continued—

Procedure 5-8 (continued)  
**OCI—High Optical Power**

| Step | Action  |  |
|------|---|--|
| 2    | <b>If</b>   | <b>Then</b>  |
|      | there is a VOA attached to the fiber between the OCI and the subtending equipment   | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br><br>Go to the next step. |
|      | there is no VOA attached to the fiber between the OCI and the subtending equipment  | go to <a href="#">step 4</a>   |
| 3    | <b>If</b>   | <b>Then</b>  |
|      | the alarm clears  | you have completed this procedure  |
|      | the alarm remains   | go to the next step  |
| 4    | Use an optical power meter to measure the transmitting power on the subtending equipment. Make sure it is working correctly and that the power of the transmitted signal is an appropriate power level.   |  |
| 5    | <b>If</b>   | <b>Then</b>  |
|      | the power level measured on the fiber going into the OCI Rx port is too high  | go to the next step  |
|      | the power level measured on the fiber going into the OCI Rx port is not too high  | go to <a href="#">step 7</a>   |
| 6    | Add an optical attenuator (fixed pad or VOA) somewhere in the path between the subtending equipment Tx port and the OCI Rx port. The optical attenuator value should be sufficient to reduce the power you measured in <a href="#">step 1</a> to an acceptable power level at the OCI Rx port. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the OCI receive sensitivity. |  |
|      | <b>If</b>   | <b>Then</b>  |
|      | the alarm clears  | you have completed the procedure   |
|      | the alarm remains   | go to the next step  |

—continued—

5-28 Clearing OCI and OCI SRM alarms

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Procedure 5-8 (continued)  
**OCI—High Optical Power**

---

| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>7</b>          | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>8</b>          | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

---

## Procedure 5-9

# OCI—High Optical Power Warning

---

### Probable cause

This alarm becomes active when the optical power level at the optical receiver has exceeded the Rx Degrade Threshold of the Rx Power High parameter. One of the following conditions exists:

- the power of the signal being transmitted by the subtending equipment is too high
- the receiving OCI circuit pack is defective
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly

### Impact

Major, non-service-affecting.

### Precautions

**CAUTION****Risk of recovery procedures affecting traffic**

This alarm is not service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-9 (continued)  
**OCI—High Optical Power Warning**

**Action**

| Step   | Action   |    |      |   |   |  |                              |
|--|--|----|------|---|---|--|------------------------------|
| 1  | <p>Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i>, 323-1701-180 for the correct values.</p> <p><b>Note:</b> Dropping traffic can be avoided if the OCI supports power monitoring on the client-side. Use the System Manager by selecting the “Equipment” tab, then “Facilities”. This avoids having to disconnect the Rx fiber of the OCI.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <p><b>CAUTION</b><br/> <b>Risk of recovery procedures affecting traffic</b><br/>                     Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).</p> </div> |    |      |   |   |  |                              |
| 2  | <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 50%; border-bottom: 1px solid black;">If</th> <th style="text-align: left; width: 50%; border-bottom: 1px solid black;">Then</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">there is a VOA attached to a fiber in the signal path</td> <td style="vertical-align: top;">re-adjust, check for proper functioning, and, if necessary, replace the VOA.<br/><br/><b>Note:</b> Adjusting the VOA may drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).<br/><br/>Go to the next step.</td> </tr> <tr> <td style="vertical-align: top;">there is no VOA attached to a fiber in the signal path</td> <td style="vertical-align: top;">go to <a href="#">step 4</a></td> </tr> </tbody> </table>   | If | Then | there is a VOA attached to a fiber in the signal path | re-adjust, check for proper functioning, and, if necessary, replace the VOA.<br><br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).<br><br>Go to the next step. | there is no VOA attached to a fiber in the signal path | go to <a href="#">step 4</a> |
| If   | Then   |    |      |   |   |  |                              |
| there is a VOA attached to a fiber in the signal path  | re-adjust, check for proper functioning, and, if necessary, replace the VOA.<br><br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).<br><br>Go to the next step.  |    |      |   |   |  |                              |
| there is no VOA attached to a fiber in the signal path | go to <a href="#">step 4</a>   |    |      |   |   |  |                              |
| 3  | <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 50%; border-bottom: 1px solid black;">If</th> <th style="text-align: left; width: 50%; border-bottom: 1px solid black;">Then</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">the alarm clears</td> <td style="vertical-align: top;">you have completed this procedure</td> </tr> <tr> <td style="vertical-align: top;">the alarm remains</td> <td style="vertical-align: top;">go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears                                      | you have completed this procedure   | the alarm remains                                      | go to the next step          |
| If   | Then   |    |      |   |   |  |                              |
| the alarm clears                                       | you have completed this procedure  |    |      |   |   |  |                              |
| the alarm remains                                      | go to the next step  |    |      |   |   |  |                              |

—continued—

Procedure 5-9 (continued)

**OCI—High Optical Power Warning**

| <b>Step</b>  | <b>Action</b>   |           |                   |  |   |  |  |
|--|---|-----------|-------------------|--|---|--|--|
| <b>4</b>   | Use an optical power meter to measure the transmitting power on the subtending equipment. Make sure it is working correctly and that the power of the transmitted signal is at the correct power level according to the manufacturer's specifications.  |           |                   |  |   |  |  |
|  | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then go to</b></th> </tr> </thead> <tbody> <tr> <td>the power level measured on the fiber going into the OCI Rx port is too high</td> <td>the next step</td> </tr> <tr> <td>the power level measured on the fiber going into the OCI Rx port is not too high</td> <td>step 6</td> </tr> </tbody> </table>   | <b>If</b> | <b>Then go to</b> | the power level measured on the fiber going into the OCI Rx port is too high | the next step   | the power level measured on the fiber going into the OCI Rx port is not too high | step 6   |
| <b>If</b>  | <b>Then go to</b>   |           |                   |  |   |  |  |
| the power level measured on the fiber going into the OCI Rx port is too high     | the next step   |           |                   |  |   |  |  |
| the power level measured on the fiber going into the OCI Rx port is not too high | step 6  |           |                   |  |   |  |  |
| <b>5</b>   | Add an optical attenuator (fixed pad or VOA) somewhere in the path between the subtending equipment Tx port and the OCI Rx port. The optical attenuator value should be sufficient to reduce the power you measured in step 1 to an acceptable power level at the OCI Rx port. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the OCI receive sensitivity. |           |                   |  |   |  |  |
|  | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed the procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | <b>If</b> | <b>Then</b>       | the alarm clears   | you have completed the procedure  | the alarm remains  | go to the next step  |
| <b>If</b>  | <b>Then</b>   |           |                   |  |   |  |  |
| the alarm clears   | you have completed the procedure  |           |                   |  |   |  |  |
| the alarm remains  | go to the next step   |           |                   |  |   |  |  |
| <b>6</b>   | Reseat the OCI. Follow <a href="#">Procedure 3-68 "Reseating a circuit pack"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |           |                   |  |   |  |  |
|  | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | <b>If</b> | <b>Then</b>       | the alarm clears   | you have completed this procedure                                       | the alarm remains  | go to the next step  |
| <b>If</b>  | <b>Then</b>   |           |                   |  |   |  |  |
| the alarm clears   | you have completed this procedure   |           |                   |  |   |  |  |
| the alarm remains  | go to the next step   |           |                   |  |   |  |  |
| <b>7</b>   | Replace the OCI. Follow <a href="#">Procedure 3-1 "Replacing an OCI circuit pack"</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |           |                   |  |   |  |  |
|  | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table>                                  | <b>If</b> | <b>Then</b>       | the alarm clears   | the removed circuit pack has faults. You have completed this procedure. | the alarm remains  | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| <b>If</b>  | <b>Then</b>   |           |                   |  |   |  |  |
| the alarm clears   | the removed circuit pack has faults. You have completed this procedure.   |           |                   |  |   |  |  |
| the alarm remains  | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |           |                   |  |   |  |  |

—end—

## Procedure 5-10 OCI—Inter-card Communication Failure

---

### Probable cause

This alarm becomes active when the SP circuit pack cannot communicate with the specified OCI circuit pack.

### Impact

Major, non-service-affecting.

### Precautions

#### ATTENTION

When clearing this alarm on Optical Metro 5100 shelves, make sure that the SP, and at least one non-SP circuit pack that is carrying the database is seated in the shelf, and the software is in a committed state. The System Manager shows database-carrying circuit packs in bold text. You can also use the Optical Metro Inventory dialog box to locate the standby database.



#### CAUTION

##### **Risk of recovery procedures affecting traffic**

This alarm is not service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.



#### CAUTION

##### **Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-10 (continued)

**OCI—Inter-card Communication Failure****Action**

| <b>Step</b> | <b>Action</b>  |
|-------------|--|
| <b>1</b>    | Using the Fault—Active Alarms window in System Manger, check to see if the Inter-card Communication Failure alarm is raised by more than one circuit pack in the shelf.<br><br><b>If</b> the alarm is raised by only this circuit pack<br><b>Then</b> got to the next step<br><br><b>If</b> the alarm is raised on multiple circuit packs<br><b>Then</b> step 5.   |
| <b>2</b>    | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><br><b>If</b> the alarm clears<br><b>Then</b> you have completed this procedure<br><br><b>If</b> the alarm remains<br><b>Then</b> go to the next step  |
| <b>3</b>    | Reseat the SP. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><br><b>If</b> the alarm clears<br><b>Then</b> you have completed this procedure<br><br><b>If</b> the alarm remains<br><b>Then</b> go to the next step   |
| <b>4</b>    | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.<br><br><b>If</b> the alarm clears<br><b>Then</b> the removed circuit pack has faults. You have completed this procedure.<br><br><b>If</b> the alarm remains<br><b>Then</b> the circuit pack is not the problem. Reseat the original circuit pack. Go to step 6. |

—continued—

5-34 Clearing OCI and OCI SRM alarms

---

Procedure 5-10 (continued)

**OCI—Inter-card Communication Failure**

---

| <b>Step</b>       | <b>Action</b>   |
|-------------------|---|
| <b>5</b>          | Reseat the SP. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | you have completed this procedure   |
| the alarm remains | go to the next step   |
| <b>6</b>          | Replace the SP. Follow <a href="#">Procedure 3-13 “Replacing an SP circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |

—end—

---

## Procedure 5-11

### OCI—Invalid Signal (backplane)

---

To clear the alarm on an Optical Metro 5200 shelf, perform steps 1 through 9 only.

To clear the alarm on an Optical Metro 5100 shelf, perform steps 10 through 14 only.

#### Probable cause

This alarm becomes active because of an equipment failure. Locate and replace the faulty equipment.

*Note:* The slot number of the affected OCM is shown in the Port column on the Active Alarms window in System Manager.

#### Optical Metro 5200

This alarm becomes active when the OCI receives an invalid signal from the OCM in slot 9 or slot 10.

#### Optical Metro 5100

This alarm becomes active when the OCI receives an invalid signal from the OCLD in slot 2 or slot 4.

When the alarm is raised by the OCI in slot 1, (9) indicates that the OCI is receiving an invalid signal from the OCLD in slot 2, and (10) indicates that the OCI is receiving an invalid signal from the OCLD in slot 4.

When the alarm is raised by the OCI in slot 3, (9) indicates that the OCI is receiving an invalid signal from the OCLD in slot 4, and (10) indicates that the OCI is receiving an invalid signal from the OCLD in slot 2.

#### Impact

Critical, service-affecting.

—continued—

Procedure 5-11 (continued)  
**OCI—Invalid Signal (backplane)**

---

## Precautions

### **ATTENTION**

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



### **CAUTION**

#### **Risk of recovery procedures affecting traffic**

The recovery actions may momentarily impact all traffic on the shelf.



### **CAUTION**

#### **Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-11 (continued)  
**OCI—Invalid Signal (backplane)**

## Action

| Step | Action |
|------|--------|
|------|--------|

### Clearing the alarm on an Optical Metro 5200 shelf



#### CAUTION

##### Risk of traffic loss

Reseating the OCI circuit pack causes a loss of traffic. If possible, reroute the traffic to another system.

- |   |   |   |
|---|---|---|
| 1 | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.                                  |   |
|   | <b>If</b>   | <b>Then</b>   |
|   | the alarm clears  | you have completed this procedure   |
|   | the alarm remains   | go to the next step   |
| 2 | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.                            |   |
|   | <b>If</b>   | <b>Then</b>   |
|   | the alarm clears  | the removed circuit pack has faults. You have completed this procedure.                     |
|   | the alarm remains   | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step. |
| 3 | Reseat the indicated OCM (slot 9 or slot 10). Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.    |   |
| 4 | Switch traffic to the reseated OCM. Follow <a href="#">Procedure 3-57 “Manual switching on OCM circuit packs”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |   |
|   | <b>If</b>   | <b>Then</b>   |
|   | the alarm clears  | you have completed this procedure   |
|   | the alarm remains   | go to the next step   |

—continued—

## 5-38 Clearing OCI and OCI SRM alarms

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Procedure 5-11 (continued)

### OCI—Invalid Signal (backplane)

---

| Step                    | Action  |    |      |                       |   |                         |   |
|-------------------------|---|----|------|-----------------------|---|-------------------------|---|
| 5                       | Replace the indicated OCM (slot 9 or slot 10). Follow <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |    |      |                       |   |                         |   |
|                         | <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>the alarm clears</td><td>the removed circuit pack has faults. You have completed this procedure.</td></tr><tr><td>the alarm remains</td><td>the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.</td></tr></tbody></table>   | If | Then | the alarm clears      | the removed circuit pack has faults. You have completed this procedure.   | the alarm remains       | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step. |
| If                      | Then  |    |      |                       |   |                         |   |
| the alarm clears        | the removed circuit pack has faults. You have completed this procedure.   |    |      |                       |   |                         |   |
| the alarm remains       | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.   |    |      |                       |   |                         |   |
| 6                       | Using the System Manager, select the Connections-Channel Assignment tabs and identify the active OCLD.<br><b>Note 1:</b> In a protected connection, the active OCLD will list “Active” under the “Mode” Column.<br><b>Note 2:</b> In an unprotected connection, there is only one OCLD, and so by default, this one is the active OCLD.   |    |      |                       |   |                         |   |
| 7                       | <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>the path is protected</td><td>switch traffic off of the active OCLD. Follow <a href="#">Procedure 3-48 “Forcing traffic to one path on a protected channel”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</td></tr><tr><td>the path is unprotected</td><td>go to the next step. Performing the next step may affect traffic.</td></tr></tbody></table> | If | Then | the path is protected | switch traffic off of the active OCLD. Follow <a href="#">Procedure 3-48 “Forcing traffic to one path on a protected channel”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. | the path is unprotected | go to the next step. Performing the next step may affect traffic.                           |
| If                      | Then  |    |      |                       |   |                         |   |
| the path is protected   | switch traffic off of the active OCLD. Follow <a href="#">Procedure 3-48 “Forcing traffic to one path on a protected channel”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                       |   |                         |   |
| the path is unprotected | go to the next step. Performing the next step may affect traffic.   |    |      |                       |   |                         |   |
| 8                       | Reseat the active OCLD. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><b>Note:</b> This step may momentarily impact traffic on all channels.  |    |      |                       |   |                         |   |
|                         | <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>go to the next step</td></tr></tbody></table>   | If | Then | the alarm clears      | you have completed this procedure   | the alarm remains       | go to the next step   |
| If                      | Then  |    |      |                       |   |                         |   |
| the alarm clears        | you have completed this procedure   |    |      |                       |   |                         |   |
| the alarm remains       | go to the next step   |    |      |                       |   |                         |   |

—continued—

Procedure 5-11 (continued)  
**OCI—Invalid Signal (backplane)**

| Step              | Action  |    |      |                  |   |                   |   |
|-------------------|---|----|------|------------------|---|-------------------|---|
| 9                 | Replace the active OCLD. Follow <a href="#">Procedure 3-2 “Replacing an OCLD circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |    |      |                  |   |                   |   |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support |
| If                | Then  |    |      |                  |   |                   |   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |    |      |                  |   |                   |   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support   |    |      |                  |   |                   |   |

**ATTENTION**

If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow [Procedure 3-49 “Removing a manual, force, or lockout switch from a protection path”](#) in *Provisioning and Operating Procedures*, 323-1701-310.

**Clearing the alarm on an Optical Metro 5100 shelf**

When the alarm is raised by the OCI in slot 1, (9) indicates that the OCI is receiving an invalid signal from the OCLD in slot 2, and (10) indicates that the OCI is receiving an invalid signal from the OCLD in slot 4.

When the alarm is raised by the OCI in slot 3, (9) indicates that the OCI is receiving an invalid signal from the OCLD in slot 4, and (10) indicates that the OCI is receiving an invalid signal from the OCLD in slot 2.

| 10                                     | <table border="1"> <thead> <tr> <th>If</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>the alarm is raised against both OCLDs</td> <td>the next step</td> </tr> <tr> <td>the alarm is raised against one OCLD</td> <td>step <a href="#">13</a></td> </tr> </tbody> </table> | If | Then go to | the alarm is raised against both OCLDs | the next step | the alarm is raised against one OCLD | step <a href="#">13</a> |
|--|--|----|------------|--|---------------|--------------------------------------|-------------------------|
| If                                     | Then go to   |    |            |  |               |                                      |                         |
| the alarm is raised against both OCLDs | the next step  |    |            |  |               |                                      |                         |
| the alarm is raised against one OCLD   | step <a href="#">13</a>  |    |            |  |               |                                      |                         |



**CAUTION**  
**Risk of traffic loss**  
 Reseating the OCI circuit pack causes a loss of traffic. If possible, reroute the traffic to another system.

| 11                | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                  |                                   |                   |                     |
|-------------------|---|----|------|------------------|-----------------------------------|-------------------|---------------------|
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table> | If | Then | the alarm clears | you have completed this procedure | the alarm remains | go to the next step |
| If                | Then  |    |      |                  |                                   |                   |                     |
| the alarm clears  | you have completed this procedure   |    |      |                  |                                   |                   |                     |
| the alarm remains | go to the next step   |    |      |                  |                                   |                   |                     |

—continued—

5-40 Clearing OCI and OCI SRM alarms

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Procedure 5-11 (continued)

**OCI—Invalid Signal (backplane)**

---

| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>12</b>         | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.                   |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.  |
| <b>13</b>         | Reseat the OCLD indicated in the alarm. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>14</b>         | Replace the OCLD. Follow <a href="#">Procedure 3-2 “Replacing an OCLD circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.                 |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

---

## Procedure 5-12

### OCI—Invalid Signal (SRM port)

---

#### Probable cause

This alarm is raised on an OCI SRM port or ports when the signal received from the subtending equipment has faults or is invalid. One of the following conditions exists:

- the Rx port on the OCI SRM is connected to the wrong subtending equipment
- the connector is dirty on the receiving OCI SRM port or on the corresponding subtending equipment
- the receiving OCI SRM is defective
- the transmitting subtending equipment is defective

#### Impact

Critical, service-affecting.

#### Precautions

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-12 (continued)  
**OCI—Invalid Signal (SRM port)**

**Action**

| Step   | Action  |           |             |                               |  |  |                     |
|--|---|-----------|-------------|-------------------------------|--|--|---------------------|
| 1  | <p>Make sure the protocol and bit rate for the near-end and far-end OCI SRM are provisioned correctly, and that there is no mismatch.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the provisioning is incorrect</td> <td>follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310, and go to step 2.</td> </tr> <tr> <td>the provisioning is correct and there is no mismatch</td> <td>go to step 3</td> </tr> </table> | <b>If</b> | <b>Then</b> | the provisioning is incorrect | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310, and go to step 2. | the provisioning is correct and there is no mismatch | go to step 3        |
| <b>If</b>  | <b>Then</b>   |           |             |                               |  |  |                     |
| the provisioning is incorrect                        | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310, and go to step 2.  |           |             |                               |  |  |                     |
| the provisioning is correct and there is no mismatch | go to step 3  |           |             |                               |  |  |                     |
| 2  | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>  | <b>If</b> | <b>Then</b> | the alarm clears              | you have completed this procedure  | the alarm remains                                    | go to the next step |
| <b>If</b>  | <b>Then</b>   |           |             |                               |  |  |                     |
| the alarm clears                                     | you have completed this procedure   |           |             |                               |  |  |                     |
| the alarm remains                                    | go to the next step   |           |             |                               |  |  |                     |
| 3  | <p>Make sure the optical fibers from the subtending equipment are correctly connected to the OCI SRM port. If necessary, reconnect the fibers.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>   | <b>If</b> | <b>Then</b> | the alarm clears              | you have completed this procedure  | the alarm remains                                    | go to the next step |
| <b>If</b>  | <b>Then</b>   |           |             |                               |  |  |                     |
| the alarm clears                                     | you have completed this procedure   |           |             |                               |  |  |                     |
| the alarm remains                                    | go to the next step   |           |             |                               |  |  |                     |
| 4  | Use an optical power meter to measure the received power level at the port. Make sure that the received power level is within the operational threshold.  |           |             |                               |  |  |                     |
| 5  | Use an optical power meter to measure the transmitted power level from the corresponding subtending equipment. Make sure that the transmitted power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values.  |           |             |                               |  |  |                     |

—continued—

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 Procedure 5-12 (continued)  
**OCI—Invalid Signal (SRM port)**


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| Step              | Action  |    |      |                  |   |                   |  |
|-------------------|---|----|------|------------------|---|-------------------|--|
| 6                 | Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201. <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down, this will allow you to see if there is any improvement to the Rx power.</li> </ul> |    |      |                  |   |                   |  |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table> <p><b>Note:</b> You can record the power level from the Equipment—Facility window in the System Manager.</p>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| If                | Then  |    |      |                  |   |                   |  |
| the alarm clears  | you have completed this procedure   |    |      |                  |   |                   |  |
| the alarm remains | go to the next step   |    |      |                  |   |                   |  |
| 7                 | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                  |   |                   |  |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| If                | Then  |    |      |                  |   |                   |  |
| the alarm clears  | you have completed this procedure   |    |      |                  |   |                   |  |
| the alarm remains | go to the next step   |    |      |                  |   |                   |  |
| 8                 | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |    |      |                  |   |                   |  |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table>  | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| If                | Then  |    |      |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |    |      |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |    |      |                  |   |                   |  |

—end—

## Procedure 5-13 OCI—Loss of Clock

### Probable cause

This alarm becomes active against the OCI SRM SONET/SDH when both the primary and the secondary timing references fail.

### Impact

Table 5-9 lists the impact that this alarm has under different conditions.

**Table 5-9**  
**OCI Loss of Clock alarm impact**

| Alarm         | Conditions  | Severity | Impact                |
|---------------|---|----------|-----------------------|
| Loss of Clock | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|               | If there are no channel assignments on the circuit pack.                                  | Minor    | Non-service-affecting |

### Precautions

|   |   |
|---|---|
|  | <p><b>CAUTION</b><br/> <b>Risk of affecting network reliability</b><br/>                     Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “<a href="#">Cleaning connectors</a>” in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> |
|---|---|

### Action

| Step | Action   |
|------|--|
| 1    | Make sure the provisioning of the primary and secondary clock sources is consistent with the subtending equipment. |

—continued—

Procedure 5-13 (continued)  
**OCI—Loss of Clock**

| Step | Action  |  |
|------|---|--|
| 2    | <b>If</b> provisioning is correct   | <b>Then</b> go to <a href="#">step 4</a>   |
|      | is incorrect  | follow the procedure for setting the clock source settings. See <a href="#">Procedure 1-38 “Changing clock reference settings for the OCI SRM SONET/SDH 1310 nm”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br>Go to the next step. |
| 3    | <b>If</b> the alarm clears  | <b>Then</b> you have completed this procedure  |
|      | the alarm remains   | go to the next step  |
| 4    | Make sure the subtending equipment is working properly and providing an error-free signal.  |  |
| 5    | Make sure that all of the optical fibers between the subtending equipment Tx port and at the OCI Rx port are correctly connected.   |  |
| 6    | Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values. |  |

**CAUTION****Risk of recovery procedures affecting traffic**

Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).

Dropping traffic can be avoided if the OCI supports power monitoring on the client-side. Use the System Manager by selecting the “Equipment” tab then “Facilities”. This avoids having to disconnect the Rx fiber of the OCI.

—continued—

5-46 Clearing OCI and OCI SRM alarms

Procedure 5-13 (continued)

**OCI—Loss of Clock**

| Step | Action   |   |
|------|--|---|
| 7    | <b>If</b><br>there is a VOA attached to the fiber between the OCI and the subtending equipment   | <b>Then</b><br>re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br>Go to the next step. |
|      | there is no VOA attached to the fiber between the OCI and the subtending equipment   | go to step 9  |
| 8    | <b>If</b><br>the alarm clears  | <b>Then</b><br>you have completed this procedure  |
|      | the alarm remains  | go to the next step   |
| 9    | Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI Rx port. For information on cleaning, see <a href="#">"Cleaning connectors"</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201. <ul style="list-style-type: none"><li>— Clean each connector separately.</li><li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 6, this will allow you to see if there is any improvement to the Rx power.</li></ul> |   |
|      | <b>If</b><br>the alarm clears  | <b>Then</b><br>you have completed this procedure  |
|      | the alarm remains  | go to the next step   |
| 10   | Make sure there is no problem with the optical fiber plant between the OCI and the subtending equipment. This includes any fixed-pad optical attenuators that may be faulty.   |   |
| 11   | Reseat the OCI. Follow <a href="#">Procedure 3-68 "Reseating a circuit pack"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |   |
|      | <b>If</b><br>the alarm clears  | <b>Then</b><br>you have completed this procedure  |
|      | the alarm remains  | go to the next step   |

—continued—

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Procedure 5-13 (continued)

**OCI—Loss of Clock**

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| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>12</b>         | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

---

## Procedure 5-14

### OCI—Loss of Frame (optical receiver)

---

#### Probable cause

This alarm becomes active when either an OCI SONET/SDH circuit pack or a port on an OCI SRM SONET/SDH is unable to detect the SONET frame in the signal from the subtending customer equipment.

This alarm becomes active when a port on an OCI SRM ESCON circuit pack is unable to detect the ESCON frame in the signal from the subtending customer equipment.

This alarm can also become active if performance monitoring detects a severely errored frame (SEF) defect that persists beyond 3 ms.

#### Impact

[Table 5-10](#) lists the impact that this alarm has under different conditions.

**Table 5-10**  
**Loss of Frame alarm impact**

| Alarm         | Conditions  | Severity | Impact                |
|---------------|---|----------|-----------------------|
| Loss of Frame | If there are channel assignments on the circuit pack (or OCI SRM port specified), and the circuit pack (or port) is in-service. | Critical | Service-affecting     |
|               | If there are no channel assignments on the circuit pack (or specified OCI SRM port).  | Minor    | Non-service-affecting |

—continued—

Procedure 5-14 (continued)

**OCI—Loss of Frame (optical receiver)****Precautions****ATTENTION**

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**Action**

| Step                    | Action   |                       |                   |                         |               |                       |        |
|-------------------------|--|-----------------------|-------------------|-------------------------|---------------|-----------------------|--------|
| 1                       | Make sure the connection type and bit rate for the OCI are provisioned correctly and are consistent with the subtending equipment. Double-click on the OCI in the Equipment-Inventory list. Under “Provisioning Data” check to see that the “Circuit Pack Type” and “Max Bit Rate” correctly correspond to the actual circuit pack seated in the slot. |                       |                   |                         |               |                       |        |
| 2                       | <table border="0"> <tr> <td><b>If</b> the slot is</td> <td><b>Then</b> go to</td> </tr> <tr> <td>incorrectly provisioned</td> <td>the next step</td> </tr> <tr> <td>correctly provisioned</td> <td>step 8</td> </tr> </table>  | <b>If</b> the slot is | <b>Then</b> go to | incorrectly provisioned | the next step | correctly provisioned | step 8 |
| <b>If</b> the slot is   | <b>Then</b> go to  |                       |                   |                         |               |                       |        |
| incorrectly provisioned | the next step  |                       |                   |                         |               |                       |        |
| correctly provisioned   | step 8   |                       |                   |                         |               |                       |        |
| 3                       | Take the OCI OOS. Follow <a href="#">Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”</a> (if applicable), and then <a href="#">Procedure 3-8 “Taking a circuit pack or SFP out-of-service”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |                       |                   |                         |               |                       |        |
| 4                       | If there are facilities associated with the OCI, delete them. Follow <a href="#">Procedure 3-14 “Deleting a circuit pack or SFP facility”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |                       |                   |                         |               |                       |        |
| 5                       | Delete the OCI equipment. Follow <a href="#">Procedure 3-9 “Deleting a circuit pack or SFP from the inventory”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |                       |                   |                         |               |                       |        |

—continued—

5-50 Clearing OCI and OCI SRM alarms

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Procedure 5-14 (continued)

**OCI—Loss of Frame (optical receiver)**

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| <b>Step</b>  | <b>Action</b>  |           |             |   |  |  |   |
|--|--|-----------|-------------|---|--|--|---|
| <b>6</b>   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>you need to manually pre-provision the slot</td><td>follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> procedures in <i>Provisioning and Operating Procedures</i>, 323-1701-310.<br/>Go to the next step.</td></tr><tr><td>you do not need to manually pre-provision the slot</td><td>insert the correct OCI and it auto-provisions. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201, or <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i>, 323-1701-210.<br/>Go to the next step.</td></tr></tbody></table> | <b>If</b> | <b>Then</b> | you need to manually pre-provision the slot                                       | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> procedures in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br>Go to the next step.  | you do not need to manually pre-provision the slot                                 | insert the correct OCI and it auto-provisions. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201, or <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i> , 323-1701-210.<br>Go to the next step. |
| <b>If</b>  | <b>Then</b>  |           |             |   |  |  |   |
| you need to manually pre-provision the slot  | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> procedures in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br>Go to the next step.  |           |             |   |  |  |   |
| you do not need to manually pre-provision the slot                                 | insert the correct OCI and it auto-provisions. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201, or <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i> , 323-1701-210.<br>Go to the next step.  |           |             |   |  |  |   |
| <b>7</b>   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>go to the next step</td></tr></tbody></table>  | <b>If</b> | <b>Then</b> | the alarm clears  | you have completed this procedure  | the alarm remains  | go to the next step   |
| <b>If</b>  | <b>Then</b>  |           |             |   |  |  |   |
| the alarm clears   | you have completed this procedure  |           |             |   |  |  |   |
| the alarm remains  | go to the next step  |           |             |   |  |  |   |
| <b>8</b>   | Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values.  |           |             |   |  |  |   |
| <b>9</b>   | Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal (correct bit rate and protocol).  |           |             |   |  |  |   |
| <b>10</b>  | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>there is a VOA attached to the fiber between the OCI and the subtending equipment</td><td>re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br/><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br/>Go to the next step.</td></tr><tr><td>there is no VOA attached to the fiber between the OCI and the subtending equipment</td><td>go to <a href="#">step 12</a></td></tr></tbody></table>   | <b>If</b> | <b>Then</b> | there is a VOA attached to the fiber between the OCI and the subtending equipment | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br>Go to the next step. | there is no VOA attached to the fiber between the OCI and the subtending equipment | go to <a href="#">step 12</a>   |
| <b>If</b>  | <b>Then</b>  |           |             |   |  |  |   |
| there is a VOA attached to the fiber between the OCI and the subtending equipment  | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br>Go to the next step.   |           |             |   |  |  |   |
| there is no VOA attached to the fiber between the OCI and the subtending equipment | go to <a href="#">step 12</a>  |           |             |   |  |  |   |

—continued—

Procedure 5-14 (continued)

**OCI—Loss of Frame (optical receiver)**

| Step | Action  |
|------|---|
| 11   | <b>If</b>   |
|      | the alarm clears  |
|      | <b>Then</b>   |
|      | you have completed this procedure   |
|      | the alarm remains   |
|      | go to the next step   |
| 12   | Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.                   |
|      | <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 8, this will allow you to see if there is any improvement to the Rx power.</li> </ul> |
|      | <b>If</b>   |
|      | the alarm clears  |
|      | the alarm remains   |
|      | <b>Then</b>   |
|      | you have completed this procedure   |
|      | go to the next step   |
|      | <b>Note:</b> You can record the power level from the Equipment—Facility window in the System Manager.   |
| 13   | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |
|      | <b>If</b>   |
|      | the alarm clears  |
|      | the alarm remains   |
|      | <b>Then</b>   |
|      | you have completed this procedure   |
|      | go to the next step   |
| 14   | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |
|      | <b>If</b>   |
|      | the alarm clears  |
|      | the alarm remains   |
|      | <b>Then</b>   |
|      | the removed circuit pack has faults. You have completed this procedure.   |
|      | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |

—end—

## Procedure 5-15

### OCI—Loss of Frame (Tx backplane)

---

This alarm is raised by OCI sub-rate multiplex (SRM) circuit packs only.

The framing pattern used by an OCI SRM allows it to map multiple client signals into a single data stream before it sends it to the OCLD. This aggregate signal has a different framing format. The far-end OCLD receives the signal and sends it to the far-end OCI SRM. The receiving OCI SRM uses the framing pattern to separate the signals and transmit each signal to a client.

*Note:* This framing pattern is used only within the Optical Metro 5100/5200 network.

#### Probable cause

##### **Optical Metro 5200**

In an Optical Metro 5200 shelf, this alarm becomes active on an OCI SRM when the aggregate frame is not detected in the backplane signal from either the OCM in slot 9 or the OCM in slot 10.

##### **Optical Metro 5100**

In an Optical Metro 5100 shelf, this alarm becomes active on an OCI SRM when the aggregate frame is not detected in the backplane signal from either the OCLD in slot 2 or the OCLD in slot 4.

- If the OCI SRM is in slot 1, the OCLD in slot 2 is mapped to slot 9 and the OCLD in slot 4 is mapped to slot 10.
- If the OCI SRM is in slot 3, the OCLD in slot 4 is mapped to slot 9 and the OCLD in slot 2 is mapped to slot 10.

One of the following conditions exists:

- the OCI SRM on the near-end is defective
- the OCI SRM on the far-end is defective
- there is a fault in the fiber connection and a real OC-48 signal is being transmitted to the far-end OCI SRM

—continued—

Procedure 5-15 (continued)  
**OCI—Loss of Frame (Tx backplane)**

## Impact

Table 5-11 lists the impact that this alarm has under different conditions.

**Table 5-11**  
**Loss of Frame (Tx backplane) alarm impact**

| Alarm                           | Conditions  | Severity | Impact                |
|---------------------------------|---|----------|-----------------------|
| Loss of Frame<br>(Tx backplane) | If there are channel assignments for the port specified, and the port facility is in-service. | Critical | Service-affecting     |
|                                 | If there are no channel assignments on the specified port.                                    | Minor    | Non-service-affecting |

## Precautions

### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



### CAUTION

#### Risk of recovery procedures affecting traffic

This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.



### CAUTION

#### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-15 (continued)

**OCI—Loss of Frame (Tx backplane)**

**Action**

| Step              | Action   |    |      |                  |  |                   |   |
|-------------------|--|----|------|------------------|--|-------------------|---|
| 1                 | Make sure the provisioning of the OCI SRM port is consistent with the subtending equipment.  |    |      |                  |  |                   |   |
| 2                 | Make sure the subtending equipment is working properly and providing an error-free signal.   |    |      |                  |  |                   |   |
| 3                 | Make sure the OCI SRM is using a known signal source.  |    |      |                  |  |                   |   |
| 4                 | Reseat the near-end OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                  |  |                   |   |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure  | the alarm remains | go to the next step   |
| If                | Then   |    |      |                  |  |                   |   |
| the alarm clears  | you have completed this procedure  |    |      |                  |  |                   |   |
| the alarm remains | go to the next step  |    |      |                  |  |                   |   |
| 5                 | Replace the near-end OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |    |      |                  |  |                   |   |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed OCI SRM does not build the frame correctly. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.</td> </tr> </tbody> </table>   | If | Then | the alarm clears | the removed OCI SRM does not build the frame correctly. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step. |
| If                | Then   |    |      |                  |  |                   |   |
| the alarm clears  | the removed OCI SRM does not build the frame correctly. You have completed this procedure.   |    |      |                  |  |                   |   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.  |    |      |                  |  |                   |   |
| 6                 | <p>Determine which OCM the OCI SRM is using.</p> <ol style="list-style-type: none"> <li>a. In the System Manager, select the Equipment tab.</li> <li>b. Select the Inventory tab.</li> <li>c. Select either OCM by clicking on slot 9 or 10.</li> <li>d. Right-click the highlighted OCM line and select Protection from the menu that appears, or click the <b>Protection</b> button.</li> </ol> <p><i>The Optical Metro OCM Protection dialog box appears.</i></p> <ol style="list-style-type: none"> <li>e. In the list that appears, look for the alarming OCI. To determine which OCM the OCI is receiving traffic from, look in the OCM Selection column. Make note of the active OCM slot number.</li> <li>f. Click <b>Cancel</b>.</li> </ol> |    |      |                  |  |                   |   |
| 7                 | Reseat the active OCM determined in step 6e. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                  |  |                   |   |

—continued—

Procedure 5-15 (continued)

**OCI—Loss of Frame (Tx backplane)**

| Step              | Action   |    |      |                  |   |                   |  |
|-------------------|--|----|------|------------------|---|-------------------|--|
| 8                 | Switch traffic to the reseated OCM. Follow <a href="#">Procedure 3-57 “Manual switching on OCM circuit packs”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                   | the alarm remains | go to the next step  |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | you have completed this procedure  |    |      |                  |   |                   |  |
| the alarm remains | go to the next step  |    |      |                  |   |                   |  |
| 9                 | Replace the OCM determined in 6e. Follow <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |    |      |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed OCM is defective. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.</td> </tr> </tbody> </table>                   | If | Then | the alarm clears | the removed OCM is defective. You have completed this procedure.    | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.                |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | the removed OCM is defective. You have completed this procedure.   |    |      |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.  |    |      |                  |   |                   |  |
| 10                | Using the System Manager, select the Connections-Channel Assignment tabs and identify the active OCLD.<br><b>Note 1:</b> In a protected connection, the active OCLD will list Active under the Mode Column.<br><b>Note 2:</b> In an unprotected connection, there is only one OCLD; by default, this one is the active OCLD.   |    |      |                  |   |                   |  |
| 11                | Reseat the active OCLD. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                   | the alarm remains | go to the next step  |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | you have completed this procedure  |    |      |                  |   |                   |  |
| the alarm remains | go to the next step  |    |      |                  |   |                   |  |
| 12                | Replace the active OCLD. Follow <a href="#">Procedure 3-2 “Replacing an OCLD circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |    |      |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed OCLD is the problem. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed OCLD is the problem. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | the removed OCLD is the problem. You have completed this procedure.  |    |      |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |    |      |                  |   |                   |  |

—end—

## Procedure 5-16

### OCI—Loss of Frame (Tx optical port)

#### Probable cause

This alarm becomes active for a OCI SRM SONET/SDH when the aggregate frame is not detected in the backplane signal from either the OCM in slot 9 or the OCM in slot 10. One of the following conditions exists:

- the OCI SRM SONET/SDH on the near-end is defective
- the OCI SRM SONET/SDH on the far-end is defective
- there is a fault in the fiber connection and a real OC-48 signal is being transmitted to the far-end OCI SRM SONET/SDH

#### Impact

[Table 5-12](#) lists the impact that this alarm has under different conditions.

**Table 5-12**  
**Loss of Frame (optical receiver) alarm impact**

| Alarm                              | Conditions  | Severity | Impact                |
|------------------------------------|---|----------|-----------------------|
| Loss of Frame<br>(Tx optical port) | If there are channel assignments for the port specified, and the port facility is in-service. | Critical | Service-affecting     |
|                                    | If there are no channel assignments on the specified port.                                    | Minor    | Non-service-affecting |

—continued—

Procedure 5-16 (continued)

**OCI—Loss of Frame (Tx optical port)****Precautions****ATTENTION**

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.

**CAUTION****Risk of recovery procedures affecting traffic**

This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**Action**

| Step              | Action  |           |             |                  |                                   |                   |                     |
|-------------------|---|-----------|-------------|------------------|-----------------------------------|-------------------|---------------------|
| 1                 | Make sure the provisioning of the OCI SRM SONET/SDH port is consistent with the subtending equipment.   |           |             |                  |                                   |                   |                     |
| 2                 | Make sure that the subtending equipment is working properly and providing an error-free signal.   |           |             |                  |                                   |                   |                     |
| 3                 | Make sure that the OCI SRM SONET/SDH is using a known signal source.  |           |             |                  |                                   |                   |                     |
| 4                 | Reseat the near-end OCI SRM SONET/SDH. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |           |             |                  |                                   |                   |                     |
|                   | <table border="0"> <tr> <td><b>If</b></td> <td><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table> | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure | the alarm remains | go to the next step |
| <b>If</b>         | <b>Then</b>   |           |             |                  |                                   |                   |                     |
| the alarm clears  | you have completed this procedure   |           |             |                  |                                   |                   |                     |
| the alarm remains | go to the next step   |           |             |                  |                                   |                   |                     |

—continued—

5-58 Clearing OCI and OCI SRM alarms

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Procedure 5-16 (continued)

**OCI—Loss of Frame (Tx optical port)**

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| <b>Step</b>       | <b>Action</b>   |
|-------------------|---|
| <b>5</b>          | Replace the near-end OCI SRM SONET/SDH. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | the removed OCI SRM SONET/SDH does not build the frame correctly. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.   |
| <b>6</b>          | Reseat the far-end OCI SRM SONET/SDH. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.        |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | you have completed this procedure   |
| the alarm remains | go to the next step   |
| <b>7</b>          | Replace the far-end OCI SRM SONET/SDH. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | the removed OCI SRM SONET/SDH cannot extract the frame. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |

—end—

## Procedure 5-17

### OCI—Loss of Lock

#### Probable cause

This alarm becomes active when the OCI circuit pack cannot lock onto the input data stream from its optical input signal. One of the following conditions exists:

- the provisioned bit rate or connection type is incorrect
- an optical fiber connection is degraded
- an optical fiber is bent or coiled too tightly
- the connector is dirty at the receiving OCI circuit pack or at the launching circuit pack
- an optical fiber is damaged
- the receiving OCI circuit pack is defective
- the transmitting subtending equipment is defective
- the optical fiber is the wrong type
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly

#### Impact

Table 5-13 lists the impact that this alarm has under different conditions.

**Table 5-13**  
**Loss of Lock alarm impact**

| Alarm        | Conditions  | Severity | Impact                |
|--------------|---|----------|-----------------------|
| Loss of Lock | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|              | If there are no channel assignments on the circuit pack.                                  | Minor    | Non-service-affecting |

—continued—

## Precautions

### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



### CAUTION

#### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

## Action

| Step | Action |
|------|--------|
|------|--------|

- | 1                       | Make sure the connection type and bit rate for the OCI are provisioned correctly and are consistent with the subtending equipment. Double-click on the OCI in the Equipment-Inventory list. Under “Provisioning Data” check to see that the “Circuit Pack Type” and “Max Bit Rate” correctly correspond to the actual circuit pack seated in the slot. |                |            |                         |               |                       |        |
|-------------------------|--|----------------|------------|-------------------------|---------------|-----------------------|--------|
| 2                       | <table border="1"><thead><tr><th>If the slot is</th><th>Then go to</th></tr></thead><tbody><tr><td>incorrectly provisioned</td><td>the next step</td></tr><tr><td>correctly provisioned</td><td>step 8</td></tr></tbody></table>   | If the slot is | Then go to | incorrectly provisioned | the next step | correctly provisioned | step 8 |
| If the slot is          | Then go to   |                |            |                         |               |                       |        |
| incorrectly provisioned | the next step  |                |            |                         |               |                       |        |
| correctly provisioned   | step 8   |                |            |                         |               |                       |        |
| 3                       | Take the OCI OOS. Follow <a href="#">Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”</a> (if applicable), and then <a href="#">Procedure 3-8 “Taking a circuit pack or SFP out-of-service”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |                |            |                         |               |                       |        |
| 4                       | If there are facilities associated with the OCI, delete them. Follow <a href="#">Procedure 3-14 “Deleting a circuit pack or SFP facility”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |                |            |                         |               |                       |        |
| 5                       | Delete the OCI equipment. Follow <a href="#">Procedure 3-9 “Deleting a circuit pack or SFP from the inventory”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |                |            |                         |               |                       |        |

—continued—

Procedure 5-17 (continued)  
**OCI—Loss of Lock**

| Step | Action  |   |
|------|---|---|
| 6    | <p><b>If</b></p> <p>you need to manually pre-provision the slot</p>   | <p><b>Then</b></p> <p>follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> procedures in <i>Provisioning and Operating Procedures</i>, 323-1701-310. Go to the next step.</p>   |
|      | <p>you do not need to manually pre-provision the slot</p>   | <p>insert the correct OCI and it auto-provisions. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201, or <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i>, 323-1701-210. Go to the next step.</p> |
| 7    | <p><b>If</b></p> <p>the alarm clears</p>  | <p><b>Then</b></p> <p>you have completed this procedure</p>   |
|      | <p>the alarm remains</p>  | <p>go to the next step</p>  |
| 8    | <p>Make sure the optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the OCI and the subtending equipment.</p>  |   |
| 9    | <p>Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i>, 323-1701-180 for the correct values.</p> |   |
| 10   | <p>Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal (correct bit rate and protocol).</p>  |   |
| 11   | <p><b>If</b></p> <p>there is a VOA attached to the fiber between the OCI and the subtending equipment</p>   | <p><b>Then</b></p> <p>re-adjust, check for proper functionality, and, if necessary, replace the VOA.</p> <p><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).</p> <p>Go to the next step.</p>  |
|      | <p>there is no VOA attached to the fiber between the OCI and the subtending equipment</p>   | <p>go to <a href="#">step 13</a></p>  |

—continued—

## 5-62 Clearing OCI and OCI SRM alarms

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Procedure 5-17 (continued)

### OCI—Loss of Lock

---

| Step | Action   |
|------|--|
| 12   | <b>If</b>  |
|      | <b>Then</b>  |
|      | the alarm clears                      you have completed this procedure  |
|      | the alarm remains                    go to the next step   |
| 13   | Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.                |
|      | <ul style="list-style-type: none"><li>— Clean each connector separately.</li><li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 9, this will allow you to see if there is any improvement to the Rx power.</li></ul> |
|      | <b>If</b>  |
|      | <b>Then</b>  |
|      | the alarm clears                      you have completed this procedure  |
|      | the alarm remains                    go to the next step   |
|      | <b>Note:</b> You can record the power level from the Equipment—Facility window in the System Manager.  |
| 14   | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |
|      | <b>If</b>  |
|      | <b>Then</b>  |
|      | the alarm clears                      you have completed this procedure  |
|      | the alarm remains                    go to the next step   |
| 15   | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |
|      | <b>If</b>  |
|      | <b>Then</b>  |
|      | the alarm clears                      the removed circuit pack has faults. You have completed this procedure.  |
|      | the alarm remains                    the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |

—end—

## Procedure 5-18

### OCI—Loss of Signal

#### Probable cause

This alarm becomes active when the OCI circuit pack is not detecting an input signal. One of the following conditions exists:

- an optical fiber is cut
- the received optical power is below the Rx Fail Threshold of the Rx Power Low parameter
- incorrect bit rate
- an optical fiber is bent or coiled too tightly
- no optical signal is present at the OCI circuit pack
- the connector is dirty at the receiving OCI circuit pack or at the launching circuit pack
- an optical patch cord is damaged
- the receiving OCI circuit pack is defective
- the transmitting subtending equipment is defective
- the optical fiber is the wrong type
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly

#### Impact

Table 5-14 lists the impact that this alarm has under different conditions.

**Table 5-14**  
**OCI Rx Loss of Signal alarm impact**

| Alarm          | Conditions  | Severity | Impact                |
|----------------|---|----------|-----------------------|
| Loss of Signal | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|                | If there are no channel assignments on the circuit pack.                                  | Major    | Non-service-affecting |

—continued—

## Precautions



**CAUTION**

**Risk of recovery procedures affecting traffic**

This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.



**CAUTION**

**Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

## Action

| Step | Action |
|------|--------|
|------|--------|

- | 1  | Make sure the optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the OCI and the subtending equipment.  |    |            |  |                        |  |               |
|--|--|----|------------|--|------------------------|--|---------------|
| 2  | Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values. |    |            |  |                        |  |               |
|  | <table border="1"><thead><tr><th>If</th><th>Then go to</th></tr></thead><tbody><tr><td>the Rx power is within the operational threshold</td><td>step <a href="#">7</a></td></tr><tr><td>the Rx power is not within the operational threshold</td><td>the next step</td></tr></tbody></table>                                     | If | Then go to | the Rx power is within the operational threshold | step <a href="#">7</a> | the Rx power is not within the operational threshold | the next step |
| If   | Then go to   |    |            |  |                        |  |               |
| the Rx power is within the operational threshold     | step <a href="#">7</a>   |    |            |  |                        |  |               |
| the Rx power is not within the operational threshold | the next step  |    |            |  |                        |  |               |

—continued—

## Procedure 5-18 (continued)

**OCI—Loss of Signal**

| <b>Step</b>   | <b>Action</b>   |           |             |   |   |   |  |
|---|---|-----------|-------------|---|---|---|--|
| <b>3</b>  | Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal.   |           |             |   |   |   |  |
|   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the transmitting subtending equipment is functioning correctly and transmitting a valid signal.</td> <td>go to the next step</td> </tr> <tr> <td>the transmitting subtending equipment not is functioning correctly and transmitting a valid signal.</td> <td>follow the applicable trouble clearing procedures for the subtending equipment</td> </tr> </tbody> </table>   | <b>If</b> | <b>Then</b> | the transmitting subtending equipment is functioning correctly and transmitting a valid signal. | go to the next step   | the transmitting subtending equipment not is functioning correctly and transmitting a valid signal. | follow the applicable trouble clearing procedures for the subtending equipment |
| <b>If</b>   | <b>Then</b>   |           |             |   |   |   |  |
| the transmitting subtending equipment is functioning correctly and transmitting a valid signal.     | go to the next step   |           |             |   |   |   |  |
| the transmitting subtending equipment not is functioning correctly and transmitting a valid signal. | follow the applicable trouble clearing procedures for the subtending equipment  |           |             |   |   |   |  |
| <b>4</b>  | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | <b>If</b> | <b>Then</b> | the alarm clears  | you have completed this procedure   | the alarm remains   | go to the next step  |
| <b>If</b>   | <b>Then</b>   |           |             |   |   |   |  |
| the alarm clears  | you have completed this procedure   |           |             |   |   |   |  |
| the alarm remains   | go to the next step   |           |             |   |   |   |  |
| <b>5</b>  | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>there is a VOA attached to the fiber between the OCI and the subtending equipment</td> <td>re-adjust, check for proper functionality, and, if necessary, replace the VOA. Go to the next step.</td> </tr> <tr> <td>there is no VOA attached to the fiber between the OCI and the subtending equipment</td> <td>go to step 7</td> </tr> </tbody> </table>  | <b>If</b> | <b>Then</b> | there is a VOA attached to the fiber between the OCI and the subtending equipment               | re-adjust, check for proper functionality, and, if necessary, replace the VOA. Go to the next step. | there is no VOA attached to the fiber between the OCI and the subtending equipment                  | go to step 7   |
| <b>If</b>   | <b>Then</b>   |           |             |   |   |   |  |
| there is a VOA attached to the fiber between the OCI and the subtending equipment                   | re-adjust, check for proper functionality, and, if necessary, replace the VOA. Go to the next step.   |           |             |   |   |   |  |
| there is no VOA attached to the fiber between the OCI and the subtending equipment                  | go to step 7  |           |             |   |   |   |  |
| <b>6</b>  | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | <b>If</b> | <b>Then</b> | the alarm clears  | you have completed this procedure   | the alarm remains   | go to the next step  |
| <b>If</b>   | <b>Then</b>   |           |             |   |   |   |  |
| the alarm clears  | you have completed this procedure   |           |             |   |   |   |  |
| the alarm remains   | go to the next step   |           |             |   |   |   |  |
| <b>7</b>  | <p>Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 2, this will allow you to see if there is any improvement to the Rx power.</li> </ul> <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table> | <b>If</b> | <b>Then</b> | the alarm clears  | you have completed this procedure   | the alarm remains   | go to the next step  |
| <b>If</b>   | <b>Then</b>   |           |             |   |   |   |  |
| the alarm clears  | you have completed this procedure   |           |             |   |   |   |  |
| the alarm remains   | go to the next step   |           |             |   |   |   |  |

—continued—

5-66 Clearing OCI and OCI SRM alarms

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Procedure 5-18 (continued)

**OCI—Loss of Signal**

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| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>8</b>          | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>9</b>          | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

## Procedure 5-19

# OCI—Low Optical Power Warning

### Probable cause

This alarm becomes active when the optical power level at the optical receiver is lower than the Rx Degrade Threshold of the Rx Power Low parameter. One of the following conditions exists:

- an optical fiber connection is degraded
- the connector is dirty at the receiving OCI circuit pack or at the launching subtending equipment
- an optical patch cord is damaged
- the receiving OCI circuit pack is defective
- the transmitting subtending equipment is defective
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly

### Impact

Major, non-service-affecting.

### Precautions

#### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



#### CAUTION

##### Risk of recovery procedures affecting traffic

While this alarm is non-service-affecting, the recovery action can be service-affecting.



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-19 (continued)

**OCI—Low Optical Power Warning**

**Action**

| Step  | Action   |           |             |   |  |  |                              |
|---|--|-----------|-------------|---|--|--|------------------------------|
| 1   | Make sure that all of the optical fibers between the subtending equipment Tx port and at the OCI Rx port are correctly connected.  |           |             |   |  |  |                              |
| 2   | Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values.  |           |             |   |  |  |                              |
| <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <div style="display: flex; align-items: center;">  <div> <p><b>CAUTION</b><br/> <b>Risk of recovery procedures affecting traffic</b><br/>                     Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).</p> <p>Dropping traffic can be avoided if the OCI supports power monitoring on the client-side. Use the System Manager by selecting the “Equipment” tab then “Facilities”. This avoids having to disconnect the Rx fiber of the OCI.</p> </div> </div> </div> |  |           |             |   |  |  |                              |
| 3   | Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal.  |           |             |   |  |  |                              |
| 4   | <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left; width: 50%;"><b>If</b></th> <th style="text-align: left; width: 50%;"><b>Then</b></th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">there is a VOA attached to the fiber between the OCI and the subtending equipment</td> <td style="vertical-align: top;">re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br/><br/><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br/><br/>Go to the next step.</td> </tr> <tr> <td style="vertical-align: top;">there is no VOA attached to the fiber between the OCI and the subtending equipment</td> <td style="vertical-align: top;">go to <a href="#">step 6</a></td> </tr> </tbody> </table> | <b>If</b> | <b>Then</b> | there is a VOA attached to the fiber between the OCI and the subtending equipment | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br><br>Go to the next step. | there is no VOA attached to the fiber between the OCI and the subtending equipment | go to <a href="#">step 6</a> |
| <b>If</b>   | <b>Then</b>  |           |             |   |  |  |                              |
| there is a VOA attached to the fiber between the OCI and the subtending equipment   | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br><br>Go to the next step.   |           |             |   |  |  |                              |
| there is no VOA attached to the fiber between the OCI and the subtending equipment  | go to <a href="#">step 6</a>   |           |             |   |  |  |                              |
| 5   | <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left; width: 50%;"><b>If</b></th> <th style="text-align: left; width: 50%;"><b>Then</b></th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">the alarm clears</td> <td style="vertical-align: top;">you have completed this procedure</td> </tr> <tr> <td style="vertical-align: top;">the alarm remains</td> <td style="vertical-align: top;">go to the next step</td> </tr> </tbody> </table>   | <b>If</b> | <b>Then</b> | the alarm clears  | you have completed this procedure  | the alarm remains  | go to the next step          |
| <b>If</b>   | <b>Then</b>  |           |             |   |  |  |                              |
| the alarm clears  | you have completed this procedure  |           |             |   |  |  |                              |
| the alarm remains   | go to the next step  |           |             |   |  |  |                              |

—continued—

Procedure 5-19 (continued)

**OCI—Low Optical Power Warning**

| <b>Step</b>       | <b>Action</b>   |           |             |                  |   |                   |  |
|-------------------|---|-----------|-------------|------------------|---|-------------------|--|
| <b>6</b>          | <p>Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 2, this will allow you to see if there is any improvement to the Rx power.</li> </ul> <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table> | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| <b>If</b>         | <b>Then</b>   |           |             |                  |   |                   |  |
| the alarm clears  | you have completed this procedure   |           |             |                  |   |                   |  |
| the alarm remains | go to the next step   |           |             |                  |   |                   |  |
| <b>7</b>          | Make sure there is no problem with the optical fiber plant between the OCI and the subtending equipment. This includes any fixed-pad optical attenuators that may be faulty.  |           |             |                  |   |                   |  |
| <b>8</b>          | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |           |             |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| <b>If</b>         | <b>Then</b>   |           |             |                  |   |                   |  |
| the alarm clears  | you have completed this procedure   |           |             |                  |   |                   |  |
| the alarm remains | go to the next step   |           |             |                  |   |                   |  |
| <b>9</b>          | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |           |             |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table>  | <b>If</b> | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| <b>If</b>         | <b>Then</b>   |           |             |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |           |             |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |           |             |                  |   |                   |  |

—end—

## Procedure 5-20 OCI—Manual Switch to (West) or (East) path active

---

### Probable cause

The Manual Switch to West Path alarm becomes active when the user requests that the signal on a protected revertive path be switched from the east path to the west path.

The Manual Switch to East Path alarm becomes active when the user requests that the signal on a protected revertive path be switched from the west path to the east path.

This is a normal indication if a Manual Switch has been requested for testing or maintenance purposes.

### Impact

Minor, non-service-affecting.

### Action

---

| Step  | Action   |    |      |   |                                   |                   |                                    |
|---|--|----|------|---|-----------------------------------|-------------------|------------------------------------|
| 1   | Determine if the manual switch is active for testing or maintenance purposes.  |    |      |   |                                   |                   |                                    |
| 2   | <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>necessary for testing or maintenance activities</td><td>you have completed this procedure</td></tr><tr><td>not necessary</td><td>go to the next step</td></tr></tbody></table> | If | Then | necessary for testing or maintenance activities | you have completed this procedure | not necessary     | go to the next step                |
| If  | Then   |    |      |   |                                   |                   |                                    |
| necessary for testing or maintenance activities | you have completed this procedure  |    |      |   |                                   |                   |                                    |
| not necessary                                   | go to the next step  |    |      |   |                                   |                   |                                    |
| 3   | Release the Manual switch if it is not necessary. Follow <a href="#">Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.                         |    |      |   |                                   |                   |                                    |
|   | <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>contact your next level of support</td></tr></tbody></table>             | If | Then | the alarm clears                                | you have completed this procedure | the alarm remains | contact your next level of support |
| If  | Then   |    |      |   |                                   |                   |                                    |
| the alarm clears                                | you have completed this procedure  |    |      |   |                                   |                   |                                    |
| the alarm remains                               | contact your next level of support   |    |      |   |                                   |                   |                                    |

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—end—

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## Procedure 5-21

# OCI—Path Lockout Active

---

### Probable cause

This alarm becomes active when you perform a lockout on the active path.

This is a normal indication if a path lockout has been set for testing or maintenance purposes.

### Impact

Minor, non-service-affecting.

### Action

---

| Step  | Action   |    |      |   |                                    |                   |                                     |
|---|--|----|------|---|------------------------------------|-------------------|-------------------------------------|
| 1   | Determine if the path lockout is set for testing or maintenance purposes.  |    |      |   |                                    |                   |                                     |
| 2   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>necessary for testing or maintenance activities</td> <td>you have completed this procedure</td> </tr> <tr> <td>not necessary</td> <td>go to the next step</td> </tr> </tbody> </table> | If | Then | necessary for testing or maintenance activities | you have completed this procedure  | not necessary     | go to the next step                 |
| If  | Then   |    |      |   |                                    |                   |                                     |
| necessary for testing or maintenance activities | you have completed this procedure  |    |      |   |                                    |                   |                                     |
| not necessary                                   | go to the next step  |    |      |   |                                    |                   |                                     |
| 3   | Release the path Lockout switch if it is not necessary. Follow <a href="#">Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |   |                                    |                   |                                     |
|   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>contact your next level of support.</td> </tr> </tbody> </table>           | If | Then | the alarm clears                                | you have completed this procedure. | the alarm remains | contact your next level of support. |
| If  | Then   |    |      |   |                                    |                   |                                     |
| the alarm clears                                | you have completed this procedure.   |    |      |   |                                    |                   |                                     |
| the alarm remains                               | contact your next level of support.  |    |      |   |                                    |                   |                                     |

—end—

## Procedure 5-22

# OCI—Performance Monitoring Timer Failed

---

### Probable cause

This alarm becomes active when the OCI circuit pack is not detecting performance monitoring data from the SP circuit pack.

### Impact

Major, non-service-affecting.

### Precautions

#### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf and the software must be in a committed state. The System Manager shows database-carrying circuit packs in bold text. You can also use the Optical Metro Inventory dialog box to locate the standby database.



#### CAUTION

##### Risk of recovery procedures affecting traffic

This condition is not service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-22 (continued)

**OCI—Performance Monitoring Timer Failed****Action**

| Step  | Action   |           |                   |   |   |   |   |
|---|--|-----------|-------------------|---|---|---|---|
| 1   | Using the Fault—Active Alarms window in System Manger, check to see if the Performance Monitoring Timer Failure alarm is raised by more than one circuit pack in the shelf.  |           |                   |   |   |   |   |
|   | <table border="0"> <tr> <td><b>If</b></td> <td><b>Then</b> go to</td> </tr> <tr> <td>the alarm is raised by only this circuit pack</td> <td>the next step</td> </tr> <tr> <td>the alarm is raised on multiple circuit packs</td> <td><a href="#">step 4</a></td> </tr> </table>  | <b>If</b> | <b>Then</b> go to | the alarm is raised by only this circuit pack | the next step   | the alarm is raised on multiple circuit packs | <a href="#">step 4</a>  |
| <b>If</b>                                     | <b>Then</b> go to  |           |                   |   |   |   |   |
| the alarm is raised by only this circuit pack | the next step  |           |                   |   |   |   |   |
| the alarm is raised on multiple circuit packs | <a href="#">step 4</a>   |           |                   |   |   |   |   |
| 2   | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |           |                   |   |   |   |   |
|   | <table border="0"> <tr> <td><b>If</b></td> <td><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>  | <b>If</b> | <b>Then</b>       | the alarm clears                              | you have completed this procedure                                       | the alarm remains                             | go to the next step   |
| <b>If</b>                                     | <b>Then</b>  |           |                   |   |   |   |   |
| the alarm clears                              | you have completed this procedure  |           |                   |   |   |   |   |
| the alarm remains                             | go to the next step  |           |                   |   |   |   |   |
| 3   | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |           |                   |   |   |   |   |
|   | <table border="0"> <tr> <td><b>If</b></td> <td><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Go to <a href="#">step 4</a>.</td> </tr> </table> | <b>If</b> | <b>Then</b>       | the alarm clears                              | the removed circuit pack has faults. You have completed this procedure. | the alarm remains                             | the circuit pack is not the problem. Reseat the original circuit pack. Go to <a href="#">step 4</a> . |
| <b>If</b>                                     | <b>Then</b>  |           |                   |   |   |   |   |
| the alarm clears                              | the removed circuit pack has faults. You have completed this procedure.  |           |                   |   |   |   |   |
| the alarm remains                             | the circuit pack is not the problem. Reseat the original circuit pack. Go to <a href="#">step 4</a> .  |           |                   |   |   |   |   |

—continued—

5-74 Clearing OCI and OCI SRM alarms

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Procedure 5-22 (continued)

**OCI—Performance Monitoring Timer Failed**

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| <b>Step</b>       | <b>Action</b>   |
|-------------------|---|
| <b>4</b>          | Reseat the SP. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | you have completed this procedure   |
| the alarm remains | go to the next step   |
| <b>5</b>          | Replace the SP. Follow <a href="#">Procedure 3-13 “Replacing an SP circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |

—end—

## Procedure 5-23

# OCI—SRM Loss of Pointer

### Probable cause

This alarm becomes active against the OCI SRM SONET/SDH LTE path under the following conditions:

- the near-end and far-end NEs are provisioned differently
- the pointer value in the SONET overhead is out of a valid range
- the pointer value in the SONET overhead is not stable because of network synchronization
- the subtending equipment is defective

### Impact

Critical, service-affecting.

### Action

| Step   | Action  |    |      |                               |  |  |                              |
|--|---|----|------|-------------------------------|--|--|------------------------------|
| 1  | <p>Make sure the protocol and bit rate for the near-end and far-end OCI SRM SONET/SDH LTE are provisioned correctly, and that there is no mismatch.</p> <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the provisioning is incorrect</td> <td>follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in Provisioning and Operating Procedures, 323-1701-310, and go to step 2.</td> </tr> <tr> <td>the provisioning is correct and there is no mismatch</td> <td>go to <a href="#">step 3</a></td> </tr> </tbody> </table> | If | Then | the provisioning is incorrect | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in Provisioning and Operating Procedures, 323-1701-310, and go to step 2. | the provisioning is correct and there is no mismatch | go to <a href="#">step 3</a> |
| If   | Then  |    |      |                               |  |  |                              |
| the provisioning is incorrect                        | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in Provisioning and Operating Procedures, 323-1701-310, and go to step 2.  |    |      |                               |  |  |                              |
| the provisioning is correct and there is no mismatch | go to <a href="#">step 3</a>  |    |      |                               |  |  |                              |
| 2  | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | If | Then | the alarm clears              | you have completed this procedure  | the alarm remains                                    | go to the next step          |
| If   | Then  |    |      |                               |  |  |                              |
| the alarm clears                                     | you have completed this procedure   |    |      |                               |  |  |                              |
| the alarm remains                                    | go to the next step   |    |      |                               |  |  |                              |

—continued—

## 5-76 Clearing OCI and OCI SRM alarms

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Procedure 5-23 (continued)

### OCI—SRM Loss of Pointer

---

| <b>Step</b>   | <b>Action</b>  |           |             |   |  |   |                              |
|---|--|-----------|-------------|---|--|---|------------------------------|
| <b>3</b>  | Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal (correct bit rate and protocol).  |           |             |   |  |   |                              |
| <b>4</b>  | Use the an optical power meter to measure the transmit power on the subtending equipment. Make sure it is working correctly and that the power of the transmitted signal is at the correct power level according to the manufacturer's specifications.   |           |             |   |  |   |                              |
|   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the subtending equipment Tx laser is out of specification</td><td>repair or replace the subtending equipment. Go to the next step.</td></tr><tr><td>the subtending equipment Tx laser is within specification</td><td>go to <a href="#">step 6</a></td></tr></tbody></table> | <b>If</b> | <b>Then</b> | the subtending equipment Tx laser is out of specification | repair or replace the subtending equipment. Go to the next step. | the subtending equipment Tx laser is within specification | go to <a href="#">step 6</a> |
| <b>If</b>   | <b>Then</b>  |           |             |   |  |   |                              |
| the subtending equipment Tx laser is out of specification | repair or replace the subtending equipment. Go to the next step.   |           |             |   |  |   |                              |
| the subtending equipment Tx laser is within specification | go to <a href="#">step 6</a>   |           |             |   |  |   |                              |
| <b>5</b>  | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>go to the next step</td></tr></tbody></table>  | <b>If</b> | <b>Then</b> | the alarm clears  | you have completed this procedure                                | the alarm remains   | go to the next step          |
| <b>If</b>   | <b>Then</b>  |           |             |   |  |   |                              |
| the alarm clears  | you have completed this procedure  |           |             |   |  |   |                              |
| the alarm remains   | go to the next step  |           |             |   |  |   |                              |
| <b>6</b>  | Make sure that there are no alarms related to synchronization.   |           |             |   |  |   |                              |
| <b>7</b>  | If the problem persists, contact your next level of support.   |           |             |   |  |   |                              |

—end—

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## Procedure 5-24

# OCI—SRM Loss of Primary Clock Source warning

---

### Probable cause

This alarm becomes active against the OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE when the primary timing reference has failed (no optical input signal).

This alarm may also become active against a port provisioned with a channel assignment that is intentionally not being used.

### Impact

Major, non-service-affecting.

### Precautions

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

## 5-78 Clearing OCI and OCI SRM alarms

Procedure 5-24 (continued)

### OCI—SRM Loss of Primary Clock Source warning

#### Action

| Step | Action  |
|------|---|
| 1    | Make sure that the channel assignment for the port raising the alarm is valid.  |
| 2    | <b>If</b><br>the channel assignment is not valid and not in use<br>the channel assignment is valid and not in use<br>the channel assignment is valid and is in use<br><b>Then</b> go to<br>the next step<br>the next step<br><a href="#">step 5</a> |
| 3    | Delete the unused channel assignment for the port raising the alarm. Follow <a href="#">Procedure 3-4 "Deleting channel assignments"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |
| 4    | <b>If</b><br>the alarm clears<br>the alarm remains<br><b>Then</b><br>you have completed this procedure<br>go to <a href="#">step 5</a>  |
| 5    | Check the type of OCI SRM circuit pack.   |
| 6    | <b>If</b><br>the circuit pack is an OCI SRM SONET/SDH<br>the circuit pack is an OCI SRM SONET/SDH<br>LTE<br><b>Then</b> go to<br><a href="#">step 10</a><br>the next step   |
| 7    | Check if the port is receiving a signal where the SSM is DUS.   |
| 8    | <b>If</b><br>the port is receiving a DUS SSM<br>the port is not receiving a DUS SSM<br><b>Then</b><br>correct the problem at the subtending equipment that is causing the DUS. Go to the next step.<br>go to <a href="#">step 10</a>                |
| 9    | <b>If</b><br>the alarm clears<br>the alarm remains<br><b>Then</b><br>you have completed this procedure<br>contact your next level of support  |

—continued—

Procedure 5-24 (continued)

**OCI—SRM Loss of Primary Clock Source warning**

| <b>Step</b> | <b>Action</b>   |   |
|-------------|---|---|
| <b>10</b>   | Make sure the port facility is in-service (IS).   |   |
| <b>11</b>   | <b>If</b>   | <b>Then</b>   |
|             | the port facility is IS   | go to <a href="#">step 13</a>   |
|             | the port facility is OOS  | change the clock source reference on the port to "None". See <a href="#">Procedure 3-61 "Provisioning primary and secondary clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step.    |
| <b>12</b>   | <b>If</b>   | <b>Then</b>   |
|             | the alarm clears  | you have completed this procedure   |
|             | the alarm remains   | contact your next level of support  |
| <b>13</b>   | Make sure the provisioning of the primary clock source is consistent with the subtending equipment. |   |
| <b>14</b>   | <b>If provisioning</b>  | <b>Then</b>   |
|             | is correct  | go to <a href="#">step 16</a>   |
|             | is incorrect  | follow the procedure for setting the clock source settings. See <a href="#">Procedure 3-61 "Provisioning primary and secondary clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. |
| <b>15</b>   | <b>If</b>   | <b>Then</b>   |
|             | the alarm clears  | you have completed this procedure   |
|             | the alarm remains   | go to the next step   |

—continued—

Procedure 5-24 (continued)

**OCI—SRM Loss of Primary Clock Source warning**

| Step | Action  |
|------|---|
| 16   | Make sure the subtending equipment is working properly and providing an error-free signal.  |
| 17   | Make sure that all of the optical fibers between the subtending equipment Tx port and at the OCI Rx port are correctly connected.   |
| 18   | Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values. |



**CAUTION**

**Risk of recovery procedures affecting traffic**

Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).

Dropping traffic can be avoided if the OCI supports power monitoring on the client-side. Use the System Manager by selecting the “Equipment” tab then “Facilities”. This avoids having to disconnect the Rx fiber of the OCI.

|    |  |  |
|----|--|--|
| 19 | <b>If</b>  | <b>Then</b>  |
|    | there is a VOA attached to the fiber between the OCI and the subtending equipment  | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br><br>Go to the next step. |
|    | there is no VOA attached to the fiber between the OCI and the subtending equipment | go to step <a href="#">21</a>  |
| 20 | <b>If</b>  | <b>Then</b>  |
|    | the alarm clears<br>the alarm remains  | you have completed this procedure<br>go to the next step   |

—continued—

---

 Procedure 5-24 (continued)

**OCI—SRM Loss of Primary Clock Source warning**


---

| Step              | Action   |    |      |                  |                                   |                   |                                    |
|-------------------|--|----|------|------------------|-----------------------------------|-------------------|------------------------------------|
| 21                | Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201. <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 18, this will allow you to see if there is any improvement to the Rx power.</li> </ul> |    |      |                  |                                   |                   |                                    |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure | the alarm remains | go to the next step                |
| If                | Then   |    |      |                  |                                   |                   |                                    |
| the alarm clears  | you have completed this procedure  |    |      |                  |                                   |                   |                                    |
| the alarm remains | go to the next step  |    |      |                  |                                   |                   |                                    |
| 22                | Switch the primary clock reference to another port on the circuit pack. Follow <a href="#">Procedure 3-61 “Provisioning primary and secondary clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                  |                                   |                   |                                    |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>contact your next level of support</td> </tr> </tbody> </table>   | If | Then | the alarm clears | you have completed this procedure | the alarm remains | contact your next level of support |
| If                | Then   |    |      |                  |                                   |                   |                                    |
| the alarm clears  | you have completed this procedure  |    |      |                  |                                   |                   |                                    |
| the alarm remains | contact your next level of support   |    |      |                  |                                   |                   |                                    |

—end—

## Procedure 5-25 OCI—SRM Loss of Secondary Clock Source warning

---

### Probable cause

This alarm becomes active against the OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE when the secondary timing reference has failed (no optical input signal).

This alarm may also become active against a port provisioned with a channel assignment that is intentionally not being used.

### Impact

Major, non-service-affecting.

### Precautions



#### **CAUTION**

##### **Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure.

For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-25 (continued)

**OCI—SRM Loss of Secondary Clock Source warning****Action**

| Step   | Action   |           |                   |  |   |  |                                    |   |                        |
|--|--|-----------|-------------------|--|---|--|------------------------------------|---|------------------------|
| 1  | Make sure that the channel assignment for the port raising the alarm is valid.   |           |                   |  |   |  |                                    |   |                        |
| 2  | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;"><b>Then</b> go to</td> </tr> <tr> <td>the channel assignment is not valid and not in use</td> <td>the next step</td> </tr> <tr> <td>the channel assignment is valid and not in use</td> <td>the next step</td> </tr> <tr> <td>the channel assignment is valid and is in use</td> <td><a href="#">step 5</a></td> </tr> </table> | <b>If</b> | <b>Then</b> go to | the channel assignment is not valid and not in use | the next step   | the channel assignment is valid and not in use | the next step                      | the channel assignment is valid and is in use | <a href="#">step 5</a> |
| <b>If</b>  | <b>Then</b> go to  |           |                   |  |   |  |                                    |   |                        |
| the channel assignment is not valid and not in use | the next step  |           |                   |  |   |  |                                    |   |                        |
| the channel assignment is valid and not in use     | the next step  |           |                   |  |   |  |                                    |   |                        |
| the channel assignment is valid and is in use      | <a href="#">step 5</a>   |           |                   |  |   |  |                                    |   |                        |
| 3  | Delete the unused channel assignment for the port raising the alarm. Follow <a href="#">Procedure 3-4 "Deleting channel assignments"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |           |                   |  |   |  |                                    |   |                        |
| 4  | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to <a href="#">step 5</a></td> </tr> </table>   | <b>If</b> | <b>Then</b>       | the alarm clears                                   | you have completed this procedure   | the alarm remains                              | go to <a href="#">step 5</a>       |   |                        |
| <b>If</b>  | <b>Then</b>  |           |                   |  |   |  |                                    |   |                        |
| the alarm clears                                   | you have completed this procedure  |           |                   |  |   |  |                                    |   |                        |
| the alarm remains                                  | go to <a href="#">step 5</a>   |           |                   |  |   |  |                                    |   |                        |
| 5  | Check the type of OCI SRM circuit pack.  |           |                   |  |   |  |                                    |   |                        |
| 6  | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;"><b>Then</b> go to</td> </tr> <tr> <td>the circuit pack is an OCI SRM SONET/SDH</td> <td><a href="#">step 10</a></td> </tr> <tr> <td>the circuit pack is an OCI SRM SONET/SDH LTE</td> <td>the next step</td> </tr> </table>   | <b>If</b> | <b>Then</b> go to | the circuit pack is an OCI SRM SONET/SDH           | <a href="#">step 10</a>   | the circuit pack is an OCI SRM SONET/SDH LTE   | the next step                      |   |                        |
| <b>If</b>  | <b>Then</b> go to  |           |                   |  |   |  |                                    |   |                        |
| the circuit pack is an OCI SRM SONET/SDH           | <a href="#">step 10</a>  |           |                   |  |   |  |                                    |   |                        |
| the circuit pack is an OCI SRM SONET/SDH LTE       | the next step  |           |                   |  |   |  |                                    |   |                        |
| 7  | Check if the port is receiving a signal where the SSM is DUS.  |           |                   |  |   |  |                                    |   |                        |
| 8  | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;"><b>Then</b></td> </tr> <tr> <td>the port is receiving a DUS SSM</td> <td>correct the problem at the subtending equipment that is causing the DUS. Go to the next step.</td> </tr> <tr> <td>the port is not receiving a DUS SSM</td> <td>go to <a href="#">step 10</a></td> </tr> </table>                                       | <b>If</b> | <b>Then</b>       | the port is receiving a DUS SSM                    | correct the problem at the subtending equipment that is causing the DUS. Go to the next step. | the port is not receiving a DUS SSM            | go to <a href="#">step 10</a>      |   |                        |
| <b>If</b>  | <b>Then</b>  |           |                   |  |   |  |                                    |   |                        |
| the port is receiving a DUS SSM                    | correct the problem at the subtending equipment that is causing the DUS. Go to the next step.  |           |                   |  |   |  |                                    |   |                        |
| the port is not receiving a DUS SSM                | go to <a href="#">step 10</a>  |           |                   |  |   |  |                                    |   |                        |
| 9  | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>contact your next level of support</td> </tr> </table>   | <b>If</b> | <b>Then</b>       | the alarm clears                                   | you have completed this procedure   | the alarm remains                              | contact your next level of support |   |                        |
| <b>If</b>  | <b>Then</b>  |           |                   |  |   |  |                                    |   |                        |
| the alarm clears                                   | you have completed this procedure  |           |                   |  |   |  |                                    |   |                        |
| the alarm remains                                  | contact your next level of support   |           |                   |  |   |  |                                    |   |                        |

—continued—

5-84 Clearing OCI and OCI SRM alarms

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Procedure 5-25 (continued)

**OCI—SRM Loss of Secondary Clock Source warning**

---

| <b>Step</b> | <b>Action</b>   |  |
|-------------|---|--|
| <b>10</b>   | Make sure that the port facility is in-service (IS).  |  |
| <b>11</b>   | <b>If</b>   | <b>Then</b>  |
|             | the port facility is IS   | go to <a href="#">step 13</a>  |
|             | the port facility is OOS  | change the clock source reference on the port to "None". See <a href="#">Procedure 3-61 "Provisioning primary and secondary clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. |
| <b>12</b>   | <b>If</b>   | <b>Then</b>  |
|             | the alarm clears  | you have completed this procedure  |
|             | the alarm remains   | contact your next level of support   |
| <b>13</b>   | Make sure the provisioning of the secondary clock source is consistent with the subtending equipment. |  |
| <b>14</b>   | <b>If provisioning</b>  | <b>Then</b>  |
|             | is correct  | go to <a href="#">step 16</a>  |
|             | is incorrect  | follow the procedure for setting the clock source settings. See <a href="#">Procedure 1-38 "Changing clock reference settings for the OCI SRM SONET/SDH 1310 nm"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br>Go to the next step.                             |
| <b>15</b>   | <b>If</b>   | <b>Then</b>  |
|             | the alarm clears  | you have completed this procedure  |
|             | the alarm remains   | go to the next step  |

—continued—

Procedure 5-25 (continued)

**OCI—SRM Loss of Secondary Clock Source warning**

| Step | Action  |
|------|---|
| 16   | Make sure the subtending equipment is working properly and providing an error-free signal.  |
| 17   | Make sure that all of the optical fibers between the subtending equipment Tx port and at the OCI Rx port are correctly connected.   |
| 18   | Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values. |

**CAUTION****Risk of recovery procedures affecting traffic**

Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).

Dropping traffic can be avoided if the OCI supports power monitoring on the client-side. Use the System Manager by selecting the “Equipment” tab then “Facilities”. This avoids having to disconnect the Rx fiber of the OCI.

|    |  |  |
|----|--|--|
| 19 | <b>If</b>  | <b>Then</b>  |
|    | there is a VOA attached to the fiber between the OCI and the subtending equipment  | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br>Go to the next step. |
|    | there is no VOA attached to the fiber between the OCI and the subtending equipment | go to step <a href="#">21</a>  |
| 20 | <b>If</b>  | <b>Then</b>  |
|    | the alarm clears   | you have completed this procedure  |
|    | the alarm remains  | go to the next step  |

—continued—

Procedure 5-25 (continued)

**OCI—SRM Loss of Secondary Clock Source warning**

---

| <b>Step</b>       | <b>Action</b>   |           |             |                  |                                   |                   |                                    |
|-------------------|---|-----------|-------------|------------------|-----------------------------------|-------------------|------------------------------------|
| <b>21</b>         | Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201. <ul style="list-style-type: none"><li>— Clean each connector separately.</li><li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 18, this will allow you to see if there is any improvement to the Rx power.</li></ul> <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>go to the next step</td></tr></tbody></table> | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure | the alarm remains | go to the next step                |
| <b>If</b>         | <b>Then</b>   |           |             |                  |                                   |                   |                                    |
| the alarm clears  | you have completed this procedure   |           |             |                  |                                   |                   |                                    |
| the alarm remains | go to the next step   |           |             |                  |                                   |                   |                                    |
| <b>22</b>         | Switch the secondary clock reference to another port on the circuit pack. Follow <a href="#">Procedure 3-61 “Provisioning primary and secondary clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>contact your next level of support</td></tr></tbody></table>  | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure | the alarm remains | contact your next level of support |
| <b>If</b>         | <b>Then</b>   |           |             |                  |                                   |                   |                                    |
| the alarm clears  | you have completed this procedure   |           |             |                  |                                   |                   |                                    |
| the alarm remains | contact your next level of support  |           |             |                  |                                   |                   |                                    |

—end—

## Procedure 5-26

# OCI—SRM Path Alarm Indication Signal

---

### Probable cause

This alarm becomes active against the SONET/SDH path of a connection when local equipment is receiving an alarm indication signal from upstream equipment. One of the following conditions exists:

- upstream facility failure or out-of-service
- in interoperable topology, upstream facility failure in SONET/SDH network
- not completely provisioned connection

### Impact

Warning, non-service-affecting.

### Requirements

This alarm is raised when there is a problem with the signal that is transmitted to the port on the SONET/SDH LTE. In order to clear this alarm, the trouble with the transmitting circuit pack must be determined and fixed. Use the System Manager to examine alarms raised on the corresponding OCI SRM SONET/SDH LTE or other equipment in the signal path.

—continued—

Procedure 5-26 (continued)

**OCI—SRM Path Alarm Indication Signal**

**Precautions**

|   |  |
|---|--|
|  | <p><b>CAUTION</b><br/> <b>Recovery procedures can affect traffic</b><br/>                 This alarm is not service-affecting, however a service-affecting condition exists upstream and the recovery action can be service-affecting.</p> |
|---|--|

|   |   |
|---|---|
|  | <p><b>CAUTION</b><br/> <b>Risk of recovery procedures affecting traffic</b><br/>                 Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “<a href="#">Cleaning connectors</a>” in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> |
|---|---|

**Action**

| Step   | Action  |           |             |                               |  |  |                     |
|--|---|-----------|-------------|-------------------------------|--|--|---------------------|
| 1  | <p>Make sure the protocol and bit rate for the near-end and far-end OCI SRM SONET/SDH LTE are provisioned correctly, and that there is no mismatch.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the provisioning is incorrect</td> <td>follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310. Go to step 2.</td> </tr> <tr> <td>the provisioning is correct and there is no mismatch</td> <td>go to step 3</td> </tr> </table> | <b>If</b> | <b>Then</b> | the provisioning is incorrect | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 2. | the provisioning is correct and there is no mismatch | go to step 3        |
| <b>If</b>  | <b>Then</b>   |           |             |                               |  |  |                     |
| the provisioning is incorrect                        | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 2.  |           |             |                               |  |  |                     |
| the provisioning is correct and there is no mismatch | go to step 3  |           |             |                               |  |  |                     |
| 2  | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>  | <b>If</b> | <b>Then</b> | the alarm clears              | you have completed this procedure  | the alarm remains                                    | go to the next step |
| <b>If</b>  | <b>Then</b>   |           |             |                               |  |  |                     |
| the alarm clears                                     | you have completed this procedure   |           |             |                               |  |  |                     |
| the alarm remains                                    | go to the next step   |           |             |                               |  |  |                     |

—continued—

Procedure 5-26 (continued)

**OCI—SRM Path Alarm Indication Signal**

| <b>Step</b> | <b>Action</b>   |  |
|-------------|---|--|
| <b>3</b>    | Make sure that there is a channel assignment configured for the port.   |  |
|             | <b>If</b>   | <b>Then</b>  |
|             | there is no channel assignment  | follow <a href="#">Procedure 3-3 “Making or modifying channel assignments”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 4. |
|             | there is a channel assignment   | go to step 5   |
| <b>4</b>    | <b>If</b>   | <b>Then</b>  |
|             | the alarm clears  | you have completed this procedure  |
|             | the alarm remains   | go to the next step  |
| <b>5</b>    | Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal (correct bit rate and protocol).   |  |
| <b>6</b>    | Use the an optical power meter to measure the transmit power on the subtending equipment. Make sure it is working correctly and that the power of the transmitted signal is at the correct power level according to the manufacturer’s specifications.  |  |
|             | <b>If</b>   | <b>Then</b>  |
|             | the subtending equipment Tx laser is out of specification   | repair or replace the subtending equipment. Go to the next step.   |
|             | the subtending equipment Tx laser is within specification   | go to <a href="#">step 8</a>   |
| <b>7</b>    | <b>If</b>   | <b>Then</b>  |
|             | the alarm clears  | you have completed this procedure  |
|             | the alarm remains   | go to the next step  |
| <b>8</b>    | Use an optical power meter to measure the received power level at the Rx port of the OCI causing the alarm. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values. |  |

—continued—

5-90 Clearing OCI and OCI SRM alarms

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Procedure 5-26 (continued)

**OCI—SRM Path Alarm Indication Signal**

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| <b>Step</b> | <b>Action</b>   |   |
|-------------|---|---|
| <b>9</b>    | <b>If</b><br>there is a VOA attached to the fiber between the OCI and the subtending equipment  | <b>Then</b><br>re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br>Go to the next step. |
|             | there is no VOA attached to the fiber between the OCI and the subtending equipment  | go to <a href="#">step 11</a>   |
| <b>10</b>   | <b>If</b><br>the alarm clears   | <b>Then</b><br>you have completed this procedure  |
|             | the alarm remains   | go to the next step   |
| <b>11</b>   | Examine the upstream and downstream alarms that are raised to help identify the cause of the alarm.   |   |
| <b>12</b>   | Make sure the optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the OCI SRM SONET/SDH LTE and the subtending equipment. |   |
| <b>13</b>   | <b>If</b><br>the alarm clears   | <b>Then</b><br>you have completed this procedure  |
|             | the alarm remains   | contact your next level of support  |

—end—

---

## Procedure 5-27

# OCI—SRM Port Alarm Indication Signal

---

### Probable cause

This alarm becomes active at the near-end when the Rx port on an OCI SRM, OCI SRM SONET/SDH, OCI SRM SONET/SDH LTE, or an OCI SRM ESCON detects a signal loss from the corresponding circuit pack at the far-end.

The port must have channel assignments and be in-service in order for this alarm to be raised.

### Impact

Warning, non-service-affecting.

### Requirements

This alarm is raised when there is a problem with the signal that is transmitted to the port on the OCI SRM, OCI SRM SONET/SDH, OCI SRM SONET/SDH LTE, or OCI SRM ESCON. In order to clear this alarm, the trouble with the transmitting circuit pack must be determined and fixed. Use the System Manager to examine alarms raised on the corresponding OCI SRM, OCI SRM SONET/SDH, OCI SRM SONET/SDH LTE, or OCI SRM ESCON, or other equipment in the signal path.

### Precautions

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-27 (continued)

**OCI—SRM Port Alarm Indication Signal**

**Action**

| Step | Action   |  |
|------|--|--|
| 1    | Make sure the protocol and bit rate for the near-end and far-end OCI SRM are provisioned correctly, and that there is no mismatch.   |  |
|      | <b>If</b>  | <b>Then</b>  |
|      | the provisioning is incorrect  | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 2. |
|      | the provisioning is correct and there is no mismatch   | go to step 3   |
| 2    | <b>If</b>  | <b>Then</b>  |
|      | the alarm clears   | you have completed this procedure  |
|      | the alarm remains  | go to the next step  |
| 3    | Make sure that there is a channel assignment configured for the port.  |  |
|      | <b>If</b>  | <b>Then</b>  |
|      | there is no channel assignment   | follow <a href="#">Procedure 3-3 “Making or modifying channel assignments”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 4.     |
|      | there is a channel assignment  | go to step 5   |
| 4    | <b>If</b>  | <b>Then</b>  |
|      | the alarm clears   | you have completed this procedure  |
|      | the alarm remains  | go to the next step  |
| 5    | At the far-end, use an optical power meter to measure the transmit power on the subtending equipment. Make sure it is working correctly and that the power of the transmitted signal is at the correct power level according to the manufacturer’s specifications. |  |
|      | <b>If</b>  | <b>Then</b>  |
|      | the subtending equipment Tx laser is out of specification  | repair or replace the subtending equipment. Go to the next step.   |
|      | the subtending equipment Tx laser is within specification  | go to <a href="#">step 7</a>   |

—continued—

Procedure 5-27 (continued)

**OCI—SRM Port Alarm Indication Signal**

| Step | Action  |  |
|------|---|--|
| 6    | <b>If</b>   | <b>Then</b>  |
|      | the alarm clears  | you have completed this procedure  |
|      | the alarm remains   | go to the next step  |
| 7    | At the far-end, use an optical power meter to measure the received power level at the Rx port of the OCI causing the alarm. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180, for the correct values. |  |
| 8    | <b>If</b>   | <b>Then</b>  |
|      | there is a VOA attached to the fiber between the OCI and the subtending equipment   | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br>Go to the next step. |
|      | there is no VOA attached to the fiber between the OCI and the subtending equipment  | go to <a href="#">step 10</a>  |
| 9    | <b>If</b>   | <b>Then</b>  |
|      | the alarm clears  | you have completed this procedure  |
|      | the alarm remains   | go to the next step  |
| 10   | Examine the upstream and downstream alarms that are raised to help identify the cause of the alarm.   |  |
| 11   | <b>If</b>   | <b>Then</b>  |
|      | If the OCI SRM ESCON shows Critical, SA SRM port Rx LOS and the Warning, NSA SRM port Tx “SRM Port Alarm Indication Signal” and the corresponding port on the downstream OCI SRM ESCON shows Critical, SA Loss of Frame   | verify the connections from the subtending equipment to the Rx of the OCI SRM ESCON (including patch panel).<br>Go to <a href="#">step 13</a> .  |
|      | otherwise   | go to <a href="#">step 12</a>  |

—continued—

## 5-94 Clearing OCI and OCI SRM alarms

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Procedure 5-27 (continued)

### OCI—SRM Port Alarm Indication Signal

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| <b>Step</b>   | <b>Action</b>  |           |             |   |   |                   |                                    |
|---|--|-----------|-------------|---|---|-------------------|------------------------------------|
| <b>12</b>   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the OCI SRM ESCON port shows Critical, SA Loss of Frame and the corresponding port on the upstream OCI SRM ESCON shows Critical, SA SRM port Rx LOS and the Warning, NSA SRM port Tx "SRM Port Alarm Indication Signal"</td><td>verify the connections from the subtending equipment to the Rx of the upstream OCI SRM ESCON (including patch panel).<br/>Go to the next step.</td></tr><tr><td>otherwise</td><td>contact your next level of support</td></tr></tbody></table> | <b>If</b> | <b>Then</b> | the OCI SRM ESCON port shows Critical, SA Loss of Frame and the corresponding port on the upstream OCI SRM ESCON shows Critical, SA SRM port Rx LOS and the Warning, NSA SRM port Tx "SRM Port Alarm Indication Signal" | verify the connections from the subtending equipment to the Rx of the upstream OCI SRM ESCON (including patch panel).<br>Go to the next step. | otherwise         | contact your next level of support |
| <b>If</b>   | <b>Then</b>  |           |             |   |   |                   |                                    |
| the OCI SRM ESCON port shows Critical, SA Loss of Frame and the corresponding port on the upstream OCI SRM ESCON shows Critical, SA SRM port Rx LOS and the Warning, NSA SRM port Tx "SRM Port Alarm Indication Signal" | verify the connections from the subtending equipment to the Rx of the upstream OCI SRM ESCON (including patch panel).<br>Go to the next step.  |           |             |   |   |                   |                                    |
| otherwise   | contact your next level of support   |           |             |   |   |                   |                                    |
| <b>13</b>   | Make sure that the optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the OCI and the subtending equipment.   |           |             |   |   |                   |                                    |
| <b>14</b>   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>contact your next level of support</td></tr></tbody></table>   | <b>If</b> | <b>Then</b> | the alarm clears  | you have completed this procedure   | the alarm remains | contact your next level of support |
| <b>If</b>   | <b>Then</b>  |           |             |   |   |                   |                                    |
| the alarm clears  | you have completed this procedure  |           |             |   |   |                   |                                    |
| the alarm remains   | contact your next level of support   |           |             |   |   |                   |                                    |

—end—

## Procedure 5-28 OCI—SRM Port Failure

### Probable cause

This alarm becomes active when the OCI SRM SONET/SDH circuit pack is unable to lock onto the signal from the backplane aggregate signal.

### Impact

Critical, service-affecting, if there are channel assignments for the port facility, and the facility is in-service.

### Precautions



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

### Action

| Step   | Action   |    |      |                               |  |  |              |
|--|--|----|------|-------------------------------|--|--|--------------|
| 1  | <p>Make sure the protocol and bit rate for the near-end and far-end OCI SRM SONET/SDH are provisioned correctly, and that there is no mismatch.</p> <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the provisioning is incorrect</td> <td>follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310. Go to step 2.</td> </tr> <tr> <td>the provisioning is correct and there is no mismatch</td> <td>go to step 3</td> </tr> </tbody> </table> | If | Then | the provisioning is incorrect | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 2. | the provisioning is correct and there is no mismatch | go to step 3 |
| If   | Then   |    |      |                               |  |  |              |
| the provisioning is incorrect                        | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 2.   |    |      |                               |  |  |              |
| the provisioning is correct and there is no mismatch | go to step 3   |    |      |                               |  |  |              |

—continued—

5-96 Clearing OCI and OCI SRM alarms

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Procedure 5-28 (continued)

**OCI—SRM Port Failure**

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| <b>Step</b> | <b>Action</b>  |  |
|-------------|--|--|
| <b>2</b>    | <b>If</b>  | <b>Then</b>  |
|             | the alarm clears   | you have completed this procedure  |
|             | the alarm remains  | go to the next step  |
| <b>3</b>    | Make sure that there is a channel assignment configured for the port.  |  |
|             | <b>If</b>  | <b>Then</b>  |
|             | there is no channel assignment   | follow <a href="#">Procedure 3-3 “Making or modifying channel assignments”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 4. |
|             | there is a channel assignment  | contact your next level of support   |
| <b>4</b>    | <b>If</b>  | <b>Then</b>  |
|             | the alarm clears   | you have completed this procedure  |
|             | the alarm remains  | go to the next step  |
| <b>5</b>    | Reseat the OCI SRM SONET/SDH. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |  |
|             | <b>If</b>  | <b>Then</b>  |
|             | the alarm clears   | you have completed this procedure  |
|             | the alarm remains  | go to the next step  |
| <b>6</b>    | Replace the OCI SRM SONET/SDH. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |  |
|             | <b>If</b>  | <b>Then</b>  |
|             | the alarm clears   | the removed circuit pack has faults. You have completed this procedure.  |
|             | the alarm remains  | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

## Procedure 5-29

# OCI—SRM Port Mapping Fault

### Probable cause

This alarm becomes active when an OCI SRM circuit pack is unable to multiplex or demultiplex an aggregate signal (Optical, TX). A common cause is a mismatch in the provisioned bit rates.

### Impact

Critical, service-affecting, if there are channel assignments for the port facility and the facility is in-service.

### Precautions



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

### Action

| Step   | Action   |    |      |                               |  |  |              |
|--|--|----|------|-------------------------------|--|--|--------------|
| 1  | <p>Make sure the protocol and bit rate for the near-end and far-end OCI SRM are provisioned correctly, and that there is no mismatch.</p> <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the provisioning is incorrect</td> <td>follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310. Go to step 2.</td> </tr> <tr> <td>the provisioning is correct and there is no mismatch</td> <td>go to step 3</td> </tr> </tbody> </table> | If | Then | the provisioning is incorrect | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 2. | the provisioning is correct and there is no mismatch | go to step 3 |
| If   | Then   |    |      |                               |  |  |              |
| the provisioning is incorrect                        | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 2.   |    |      |                               |  |  |              |
| the provisioning is correct and there is no mismatch | go to step 3   |    |      |                               |  |  |              |

—continued—

5-98 Clearing OCI and OCI SRM alarms

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Procedure 5-29 (continued)

**OCI—SRM Port Mapping Fault**

---

| <b>Step</b> | <b>Action</b>  |  |
|-------------|--|--|
| <b>2</b>    | <b>If</b>  | <b>Then</b>  |
|             | the alarm clears   | you have completed this procedure  |
|             | the alarm remains  | go to the next step  |
| <b>3</b>    | Make sure that there is a channel assignment configured for the port.  |  |
|             | <b>If</b>  | <b>Then</b>  |
|             | there is no channel assignment   | follow <a href="#">Procedure 3-3 “Making or modifying channel assignments”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 4. |
|             | there is a channel assignment  | contact your next level of support   |
| <b>4</b>    | <b>If</b>  | <b>Then</b>  |
|             | the alarm clears   | you have completed this procedure  |
|             | the alarm remains  | go to the next step  |
| <b>5</b>    | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |  |
|             | <b>If</b>  | <b>Then</b>  |
|             | the alarm clears   | you have completed this procedure  |
|             | the alarm remains  | go to the next step  |
| <b>6</b>    | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |  |
|             | <b>If</b>  | <b>Then</b>  |
|             | the alarm clears   | the removed circuit pack has faults. You have completed this procedure.  |
|             | the alarm remains  | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

---

## Procedure 5-30

# OCI—SRM—Remote Defect Indication

---

This alarm is raised against the OCI SRM GbE/FC or OCI SRM GbE path.

### Probable cause

This alarm becomes active when there is an error at the far-end NE, such as a Path AIS or LOP alarm is received or a failure has occurred.

### Impact

Warning, non-service-affecting.

### Precautions

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-30 (continued)

**OCI—SRM—Remote Defect Indication**

**Action**

| Step   | Action  |  |                   |           |                                    |               |                                    |
|--|---|--|-------------------|-----------|------------------------------------|---------------|------------------------------------|
| 1  | <p>In the Active Alarms window, determine if path Alarm Indication Signal alarms are present on the far-end NEs.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b> this alarms is</td> <td style="width: 50%;"><b>Then</b> go to</td> </tr> <tr> <td>present</td> <td><a href="#">step 2</a></td> </tr> <tr> <td>not present</td> <td><a href="#">step 3</a></td> </tr> </table>   | <b>If</b> this alarms is                     | <b>Then</b> go to | present   | <a href="#">step 2</a>             | not present   | <a href="#">step 3</a>             |
| <b>If</b> this alarms is                     | <b>Then</b> go to   |  |                   |           |                                    |               |                                    |
| present                                      | <a href="#">step 2</a>  |  |                   |           |                                    |               |                                    |
| not present                                  | <a href="#">step 3</a>  |  |                   |           |                                    |               |                                    |
| 2  | <p>Clear the Alarm Indication Signal alarms. Follow <a href="#">Procedure 5-26</a>, “OCI—SRM Path Alarm Indication Signal” in this chapter.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b> the Remote Defect Indication alarm</td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>remains</td> <td>go to the next step</td> </tr> </table> | <b>If</b> the Remote Defect Indication alarm | <b>Then</b>       | clears    | you have completed this procedure  | remains       | go to the next step                |
| <b>If</b> the Remote Defect Indication alarm | <b>Then</b>   |  |                   |           |                                    |               |                                    |
| clears                                       | you have completed this procedure   |  |                   |           |                                    |               |                                    |
| remains                                      | go to the next step   |  |                   |           |                                    |               |                                    |
| 3  | <p>In the Active Alarms window, determine if Loss of Pointer alarms are present on the far-end NEs.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b> this alarms is</td> <td style="width: 50%;"><b>Then</b> go to</td> </tr> <tr> <td>present</td> <td><a href="#">step 4</a></td> </tr> <tr> <td>not present</td> <td><a href="#">step 5</a></td> </tr> </table>  | <b>If</b> this alarms is                     | <b>Then</b> go to | present   | <a href="#">step 4</a>             | not present   | <a href="#">step 5</a>             |
| <b>If</b> this alarms is                     | <b>Then</b> go to   |  |                   |           |                                    |               |                                    |
| present                                      | <a href="#">step 4</a>  |  |                   |           |                                    |               |                                    |
| not present                                  | <a href="#">step 5</a>  |  |                   |           |                                    |               |                                    |
| 4  | <p>Clear the Loss of Pointer alarms. Follow <a href="#">Procedure 5-23</a>, “OCI—SRM Loss of Pointer” in this chapter.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b> the Remote Defect Indication alarm</td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>remains</td> <td>go to the next step</td> </tr> </table>                      | <b>If</b> the Remote Defect Indication alarm | <b>Then</b>       | clears    | you have completed this procedure  | remains       | go to the next step                |
| <b>If</b> the Remote Defect Indication alarm | <b>Then</b>   |  |                   |           |                                    |               |                                    |
| clears                                       | you have completed this procedure   |  |                   |           |                                    |               |                                    |
| remains                                      | go to the next step   |  |                   |           |                                    |               |                                    |
| 5  | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b> the topology used is</td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>bookended</td> <td>contact your next level of support</td> </tr> <tr> <td>interoperable</td> <td>go to the next step</td> </tr> </table>   | <b>If</b> the topology used is               | <b>Then</b>       | bookended | contact your next level of support | interoperable | go to the next step                |
| <b>If</b> the topology used is               | <b>Then</b>   |  |                   |           |                                    |               |                                    |
| bookended                                    | contact your next level of support  |  |                   |           |                                    |               |                                    |
| interoperable                                | go to the next step   |  |                   |           |                                    |               |                                    |
| 6  | <p>Make sure that all path circuits are correctly cross-connected.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b> the alarm</td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>remains</td> <td>contact your next level of support</td> </tr> </table>  | <b>If</b> the alarm                          | <b>Then</b>       | clears    | you have completed this procedure  | remains       | contact your next level of support |
| <b>If</b> the alarm                          | <b>Then</b>   |  |                   |           |                                    |               |                                    |
| clears                                       | you have completed this procedure   |  |                   |           |                                    |               |                                    |
| remains                                      | contact your next level of support  |  |                   |           |                                    |               |                                    |

—end—

---

## Procedure 5-31

# OCI—SRM Rx Signal Degrade

---

### Probably cause

This alarm is raised when the received signal on the OCI SRM SONET/SDH LTE is significantly degraded. One of the following conditions exists:

- excessive attenuation
- dirty optical fiber
- incorrect connector seating
- transmit laser degrade

### Impact

Major, non-service affecting.

### Precautions

**CAUTION****Risk of recovery procedures affecting traffic**

While this alarm is non-service-affecting, the recovery action can be service-affecting.

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**ATTENTION**

The alarm can take three to four minutes to clear depending on the client port protocol rate and the threshold set for the port. This clearance time is within the SONET specification. It is normal for the system to raise a Signal Degrade alarm after clearing a Loss of Signal alarm, and the Signal Degrade alarm clears if the error rate is lower than the threshold.

—continued—

Procedure 5-31 (continued)

**OCI—SRM Rx Signal Degrade**

**Action**

| Step  | Action   |           |                   |   |                                   |   |  |
|---|--|-----------|-------------------|---|-----------------------------------|---|--|
| 1   | Make sure the optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the OCI SRM SONET/SDH LTE and the subtending equipment.  |           |                   |   |                                   |   |  |
| 2   | Use an optical power meter to measure the received power level at the Rx port of the affected OCI SRM SONET/SDH LTE. Check if the power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values.  |           |                   |   |                                   |   |  |
|   | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b> go to</td> </tr> <tr> <td>the Rx power is within the operational threshold</td> <td>step <a href="#">7</a></td> </tr> <tr> <td>the Rx power is not within the operational threshold</td> <td>the next step</td> </tr> </table>   | <b>If</b> | <b>Then</b> go to | the Rx power is within the operational threshold  | step <a href="#">7</a>            | the Rx power is not within the operational threshold  | the next step  |
| <b>If</b>   | <b>Then</b> go to  |           |                   |   |                                   |   |  |
| the Rx power is within the operational threshold  | step <a href="#">7</a>   |           |                   |   |                                   |   |  |
| the Rx power is not within the operational threshold  | the next step  |           |                   |   |                                   |   |  |
| 3   | Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal.  |           |                   |   |                                   |   |  |
|   | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the transmitting subtending equipment is functioning correctly and transmitting a valid signal.</td> <td>go to the next step</td> </tr> <tr> <td>the transmitting subtending equipment not is functioning correctly and transmitting a valid signal.</td> <td>follow the applicable trouble clearing procedures for the subtending equipment</td> </tr> </table> | <b>If</b> | <b>Then</b>       | the transmitting subtending equipment is functioning correctly and transmitting a valid signal. | go to the next step               | the transmitting subtending equipment not is functioning correctly and transmitting a valid signal. | follow the applicable trouble clearing procedures for the subtending equipment |
| <b>If</b>   | <b>Then</b>  |           |                   |   |                                   |   |  |
| the transmitting subtending equipment is functioning correctly and transmitting a valid signal.     | go to the next step  |           |                   |   |                                   |   |  |
| the transmitting subtending equipment not is functioning correctly and transmitting a valid signal. | follow the applicable trouble clearing procedures for the subtending equipment   |           |                   |   |                                   |   |  |
| 4   | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>   | <b>If</b> | <b>Then</b>       | the alarm clears  | you have completed this procedure | the alarm remains   | go to the next step  |
| <b>If</b>   | <b>Then</b>  |           |                   |   |                                   |   |  |
| the alarm clears  | you have completed this procedure  |           |                   |   |                                   |   |  |
| the alarm remains   | go to the next step  |           |                   |   |                                   |   |  |

—continued—

Procedure 5-31 (continued)

**OCI—SRM Rx Signal Degrade**

| <b>Step</b>  | <b>Action</b>   |           |             |   |  |  |                     |
|--|---|-----------|-------------|---|--|--|---------------------|
| <b>5</b>   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>there is a VOA attached to the fiber between the OCI and the subtending equipment</td> <td>re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br/>Go to the next step.</td> </tr> <tr> <td>there is no VOA attached to the fiber between the OCI and the subtending equipment</td> <td>go to step 7</td> </tr> </tbody> </table>  | <b>If</b> | <b>Then</b> | there is a VOA attached to the fiber between the OCI and the subtending equipment | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br>Go to the next step. | there is no VOA attached to the fiber between the OCI and the subtending equipment | go to step 7        |
| <b>If</b>  | <b>Then</b>   |           |             |   |  |  |                     |
| there is a VOA attached to the fiber between the OCI and the subtending equipment  | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br>Go to the next step.  |           |             |   |  |  |                     |
| there is no VOA attached to the fiber between the OCI and the subtending equipment | go to step 7  |           |             |   |  |  |                     |
| <b>6</b>   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | <b>If</b> | <b>Then</b> | the alarm clears  | you have completed this procedure  | the alarm remains  | go to the next step |
| <b>If</b>  | <b>Then</b>   |           |             |   |  |  |                     |
| the alarm clears   | you have completed this procedure   |           |             |   |  |  |                     |
| the alarm remains  | go to the next step   |           |             |   |  |  |                     |
| <b>7</b>   | <p>Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI SRM SONET/SDH LTE Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 2, this will allow you to see if there is any improvement to the Rx power.</li> </ul> <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table> | <b>If</b> | <b>Then</b> | the alarm clears  | you have completed this procedure  | the alarm remains  | go to the next step |
| <b>If</b>  | <b>Then</b>   |           |             |   |  |  |                     |
| the alarm clears   | you have completed this procedure   |           |             |   |  |  |                     |
| the alarm remains  | go to the next step   |           |             |   |  |  |                     |

—continued—

5-104 Clearing OCI and OCI SRM alarms

---

Procedure 5-31 (continued)

**OCI—SRM Rx Signal Degrade**

---

| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>8</b>          | Reseat the OCI SRM SONET/SDH LTE. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>9</b>          | Replace the OCI SRM SONET/SDH LTE. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

---

## Procedure 5-32

# OCI—SRM Rx Signal Failure

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### Probably cause

This alarm is raised when the received optical signal is degraded to the point where it is unusable. One of the following conditions exists:

- excessive attenuation
- dirty optical fiber
- improper connector seating
- transmit laser degrade

### Impact

Critical, service affecting.

### Precautions

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or reconnections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-32 (continued)  
**OCI—SRM Rx Signal Failure**

**Action**

| Step  | Action   |           |                   |   |                                   |   |  |
|---|--|-----------|-------------------|---|-----------------------------------|---|--|
| 1   | Make sure the optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the OCI SRM SONET/SDH LTE and the subtending equipment.  |           |                   |   |                                   |   |  |
| 2   | Use an optical power meter to measure the received power level at the Rx port of the affected OCI SRM SONET/SDH LTE. Check if the power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values.  |           |                   |   |                                   |   |  |
|   | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b> go to</td> </tr> <tr> <td>the Rx power is within the operational threshold</td> <td>step <a href="#">7</a></td> </tr> <tr> <td>the Rx power is not within the operational threshold</td> <td>the next step</td> </tr> </table>   | <b>If</b> | <b>Then</b> go to | the Rx power is within the operational threshold  | step <a href="#">7</a>            | the Rx power is not within the operational threshold  | the next step  |
| <b>If</b>   | <b>Then</b> go to  |           |                   |   |                                   |   |  |
| the Rx power is within the operational threshold  | step <a href="#">7</a>   |           |                   |   |                                   |   |  |
| the Rx power is not within the operational threshold  | the next step  |           |                   |   |                                   |   |  |
| 3   | Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal.  |           |                   |   |                                   |   |  |
|   | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the transmitting subtending equipment is functioning correctly and transmitting a valid signal.</td> <td>go to the next step</td> </tr> <tr> <td>the transmitting subtending equipment not is functioning correctly and transmitting a valid signal.</td> <td>follow the applicable trouble clearing procedures for the subtending equipment</td> </tr> </table> | <b>If</b> | <b>Then</b>       | the transmitting subtending equipment is functioning correctly and transmitting a valid signal. | go to the next step               | the transmitting subtending equipment not is functioning correctly and transmitting a valid signal. | follow the applicable trouble clearing procedures for the subtending equipment |
| <b>If</b>   | <b>Then</b>  |           |                   |   |                                   |   |  |
| the transmitting subtending equipment is functioning correctly and transmitting a valid signal.     | go to the next step  |           |                   |   |                                   |   |  |
| the transmitting subtending equipment not is functioning correctly and transmitting a valid signal. | follow the applicable trouble clearing procedures for the subtending equipment   |           |                   |   |                                   |   |  |
| 4   | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>   | <b>If</b> | <b>Then</b>       | the alarm clears  | you have completed this procedure | the alarm remains   | go to the next step  |
| <b>If</b>   | <b>Then</b>  |           |                   |   |                                   |   |  |
| the alarm clears  | you have completed this procedure  |           |                   |   |                                   |   |  |
| the alarm remains   | go to the next step  |           |                   |   |                                   |   |  |

—continued—

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 Procedure 5-32 (continued)  
**OCI—SRM Rx Signal Failure**


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| Step | Action  |  |
|------|---|--|
| 5    | <b>If</b>   | <b>Then</b>  |
|      | there is a VOA attached to the fiber between the OCI and the subtending equipment   | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br>Go to the next step. |
|      | there is no VOA attached to the fiber between the OCI and the subtending equipment  | go to step 7   |
| 6    | <b>If</b>   | <b>Then</b>  |
|      | the alarm clears  | you have completed this procedure  |
|      | the alarm remains   | go to the next step  |
| 7    | Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI SRM SONET/SDH LTE Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201. <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 2, this will allow you to see if there is any improvement to the Rx power.</li> </ul> |  |
|      | <b>If</b>   | <b>Then</b>  |
|      | the alarm clears  | you have completed this procedure  |
|      | the alarm remains   | go to the next step  |

—continued—

5-108 Clearing OCI and OCI SRM alarms

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Procedure 5-32 (continued)

**OCI—SRM Rx Signal Failure**

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| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>8</b>          | Reseat the OCI SRM SONET/SDH LTE. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>9</b>          | Replace the OCI SRM SONET/SDH LTE. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

## Procedure 5-33

# OCI—TCA - Optical Power Rx High

### Probable cause

This alarm becomes active when the power of the optical signal received is exceeds the user-defined threshold of the Rx Power High parameter. One of the following conditions exists:

- the power of the signal being transmitted by the subtending equipment is too high
- the receiving OCI circuit pack is defective
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly
- the user-defined threshold value is not properly set

### Impact

Minor, non-service-affecting.

### Precautions

#### ATTENTION

##### Power fluctuating around user defined TCAs and alarm toggling

This alarm may toggle on the System Manager if the receive optical power reading fluctuates around the user defined TCA threshold. To clear the behavior of alarm toggling, move the user defined TCA threshold away from the power range around which the optical power reading fluctuates, or adjust the power level to the acceptable range so that the alarm is cleared.



#### CAUTION

##### Risk of recovery procedures affecting traffic

This alarm is not service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-33 (continued)

**OCI—TCA - Optical Power Rx High**

**Action**

| Step   | Action  |    |      |   |   |  |                                     |
|--|---|----|------|---|---|--|-------------------------------------|
| 1  | <p>Make sure that the user threshold value is what you really want. If the value is set too low, adjust it to the desired value.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears  | you have completed this procedure   | the alarm remains  | go to the next step                 |
| If   | Then  |    |      |   |   |  |                                     |
| the alarm clears   | you have completed this procedure   |    |      |   |   |  |                                     |
| the alarm remains  | go to the next step   |    |      |   |   |  |                                     |
| 2  | <p>Make sure that all of the optical fibers between the subtending equipment Tx port and at the OCI Rx port are correctly connected.</p>  |    |      |   |   |  |                                     |
| 3  | <p>Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-1</a> or <a href="#">Table 2-2</a> in <i>Technical Specifications</i>, 323-1701-180 for the correct values.</p>   |    |      |   |   |  |                                     |
| <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <div style="display: flex; align-items: center;">  <div> <p><b>CAUTION</b></p> <p><b>Risk of recovery procedures affecting traffic</b></p> <p>Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).</p> <p>Dropping traffic can be avoided if the OCI supports power monitoring on the client-side. Use the System Manager by selecting the “Equipment” tab then “Facilities”. This avoids having to disconnect the Rx fiber of the OCI.</p> </div> </div> </div> |   |    |      |   |   |  |                                     |
| 4  | <p>Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal.</p>  |    |      |   |   |  |                                     |
| 5  | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>there is a VOA attached to the fiber between the OCI and the subtending equipment</td> <td> <p>re-adjust, check for proper functionality, and, if necessary, replace the VOA.</p> <p><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).</p> <p>Go to the next step.</p> </td> </tr> <tr> <td>there is no VOA attached to the fiber between the OCI and the subtending equipment</td> <td> <p>go to <a href="#">step 7</a></p> </td> </tr> </tbody> </table> | If | Then | there is a VOA attached to the fiber between the OCI and the subtending equipment | <p>re-adjust, check for proper functionality, and, if necessary, replace the VOA.</p> <p><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).</p> <p>Go to the next step.</p> | there is no VOA attached to the fiber between the OCI and the subtending equipment | <p>go to <a href="#">step 7</a></p> |
| If   | Then  |    |      |   |   |  |                                     |
| there is a VOA attached to the fiber between the OCI and the subtending equipment  | <p>re-adjust, check for proper functionality, and, if necessary, replace the VOA.</p> <p><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).</p> <p>Go to the next step.</p>   |    |      |   |   |  |                                     |
| there is no VOA attached to the fiber between the OCI and the subtending equipment   | <p>go to <a href="#">step 7</a></p>   |    |      |   |   |  |                                     |
| 6  | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | If | Then | the alarm clears  | you have completed this procedure   | the alarm remains  | go to the next step                 |
| If   | Then  |    |      |   |   |  |                                     |
| the alarm clears   | you have completed this procedure   |    |      |   |   |  |                                     |
| the alarm remains  | go to the next step   |    |      |   |   |  |                                     |

—continued—

Procedure 5-33 (continued)

**OCI—TCA - Optical Power Rx High**

| <b>Step</b>       | <b>Action</b>   |           |             |                  |   |                   |  |
|-------------------|---|-----------|-------------|------------------|---|-------------------|--|
| <b>7</b>          | <p>Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 3, this will allow you to see if there is any improvement to the Rx power.</li> </ul> <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table> | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| <b>If</b>         | <b>Then</b>   |           |             |                  |   |                   |  |
| the alarm clears  | you have completed this procedure   |           |             |                  |   |                   |  |
| the alarm remains | go to the next step   |           |             |                  |   |                   |  |
| <b>8</b>          | Make sure there is no problem with the optical fiber plant between the OCI and the subtending equipment. This includes any fixed-pad optical attenuators that may be faulty.  |           |             |                  |   |                   |  |
| <b>9</b>          | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |           |             |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| <b>If</b>         | <b>Then</b>   |           |             |                  |   |                   |  |
| the alarm clears  | you have completed this procedure   |           |             |                  |   |                   |  |
| the alarm remains | go to the next step   |           |             |                  |   |                   |  |
| <b>10</b>         | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |           |             |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table>  | <b>If</b> | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| <b>If</b>         | <b>Then</b>   |           |             |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |           |             |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |           |             |                  |   |                   |  |

—end—

## Procedure 5-34 OCI—TCA - Optical Power Rx Low

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### Probable cause

This alarm becomes active when the power of the optical signal received is lower than the user-defined threshold of the Rx Power Low parameter. One of the following conditions exists:

- an optical fiber connection is degraded
- the connector is dirty at the receiving OCI circuit pack or at the launching subtending equipment
- an optical patch cord is damaged
- the receiving OCI circuit pack is defective
- the transmitting subtending equipment is defective
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly
- the user-defined threshold value is not properly set

### Impact

Minor, non-service-affecting.

### Precautions

#### **ATTENTION**

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.

#### **ATTENTION**

##### **Power fluctuating around user defined TCAs and alarm toggling**

This alarm may toggle on the System Manager if the receive optical power reading fluctuates around the user defined TCA threshold. To clear the behavior of alarm toggling, move the user defined TCA threshold away from the power range around which the optical power reading fluctuates, or adjust the power level to the acceptable range so that the alarm is cleared.

—continued—

Procedure 5-34 (continued)  
**OCI—TCA - Optical Power Rx Low**

|   |   |
|---|---|
|  | <p><b>CAUTION</b><br/> <b>Risk of recovery procedures affecting traffic</b><br/>                 While this alarm is non-service-affecting, the recovery action can be service-affecting.</p> |
|---|---|

|   |   |
|---|---|
|  | <p><b>CAUTION</b><br/> <b>Risk of affecting network reliability</b><br/>                 Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “<a href="#">Cleaning connectors</a>” in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> |
|---|---|

**Action**

| Step | Action |
|------|--------|
|------|--------|

1 Make sure that the user threshold value is what you really want. If the value is set too high, adjust it to the desired value.

| If                | Then                              |
|-------------------|-----------------------------------|
| the alarm clears  | you have completed this procedure |
| the alarm remains | go to the next step               |

2 Make sure that all of the optical fibers between the subtending equipment Tx port and at the OCI Rx port are correctly connected.

3 Use an optical power meter to measure the received power level at the Rx port of the affected OCI. Check if the Rx power level is within the operational threshold. Write down the value. Refer to [Table 2-1](#) or [Table 2-2](#) in *Technical Specifications*, 323-1701-180 for the correct values.

|   |  |
|---|--|
|  | <p><b>CAUTION</b><br/> <b>Risk of recovery procedures affecting traffic</b><br/>                 Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI, fiber, or system).<br/><br/>                 Dropping traffic can be avoided if the OCI supports power monitoring on the client side. Use the System Manager by selecting the “Equipment” tab then “Facilities”. This avoids having to disconnect the Rx fiber of the OCI.</p> |
|---|--|

4 Make sure that the transmitting subtending equipment is functioning correctly and transmitting a valid signal.

—continued—

5-114 Clearing OCI and OCI SRM alarms

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Procedure 5-34 (continued)

**OCI—TCA - Optical Power Rx Low**

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| Step | Action   |   |
|------|--|---|
| 5    | <b>If</b><br>there is a VOA attached to the fiber between the OCI and the subtending equipment   | <b>Then</b><br>re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br>Go to the next step. |
|      | there is no VOA attached to the fiber between the OCI and the subtending equipment   | go to <a href="#">step 7</a>  |
| 6    | <b>If</b><br>the alarm clears  | <b>Then</b><br>you have completed this procedure  |
|      | the alarm remains  | go to the next step   |
| 7    | Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI Rx port. For information on cleaning, see " <a href="#">Cleaning connectors</a> " in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201. <ul style="list-style-type: none"><li>— Clean each connector separately.</li><li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in <a href="#">step 3</a>, this will allow you to see if there is any improvement to the Rx power.</li></ul> |   |
|      | <b>If</b><br>the alarm clears  | <b>Then</b><br>you have completed this procedure  |
|      | the alarm remains  | go to the next step   |
| 8    | Make sure there is no problem with the optical fiber plant between the OCI and the subtending equipment, including any fixed-pad optical attenuators that may be faulty.   |   |

—continued—

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 Procedure 5-34 (continued)  
**OCI—TCA - Optical Power Rx Low**


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| Step              | Action   |    |      |                  |   |                   |  |
|-------------------|--|----|------|------------------|---|-------------------|--|
| <b>9</b>          | Reseat the OCI. Follow <a href="#">Procedure 3-68 "Reseating a circuit pack"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                  |   |                   |  |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | you have completed this procedure  |    |      |                  |   |                   |  |
| the alarm remains | go to the next step  |    |      |                  |   |                   |  |
| <b>10</b>         | Replace the OCI. Follow <a href="#">Procedure 3-1 "Replacing an OCI circuit pack"</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |    |      |                  |   |                   |  |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |    |      |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |    |      |                  |   |                   |  |

—end—

## Procedure 5-35 OCI—TCA - Optical Power Tx High

---

### Probable cause

This alarm becomes active when the laser is operating within an acceptable performance range, but output is exceeding the user-defined threshold of the TxPowerHigh parameter. Properties of the laser change as the circuit pack ages. When these properties approach unacceptable levels this alarm may be raised.

This alarm can also be raised if the user threshold value is not properly set.

### Impact

Minor, non-service-affecting.

### Precaution

#### **ATTENTION**

When you clear this alarm on an Optical Metro 5100 shelf, make sure that the SP, and at least one non-SP circuit pack that is carrying the database is seated in the shelf, and the software is in a committed state. The System Manager shows database-carrying circuit packs in bold text. You can also use the Optical Metro Inventory dialog box to locate the standby database.

#### **ATTENTION**

##### **Power fluctuating around user defined TCAs and alarm toggling**

This alarm may toggle on the System Manager if the receive optical power reading fluctuates around the user defined TCA threshold. To clear the behavior of alarm toggling, move the user defined TCA threshold away from the power range around which the optical power reading fluctuates, or adjust the power level to the acceptable range so that the alarm is cleared.

—continued—

Procedure 5-35 (continued)

**OCI—TCA - Optical Power Tx High****CAUTION****Risk of recovery procedures affecting traffic**

This alarm is not service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**Action**

| Step              | Action   |    |      |                  |   |                   |  |
|-------------------|--|----|------|------------------|---|-------------------|--|
| 1                 | Make sure that the user-defined threshold value is correct. If the value is set too high, adjust it to the desired value.  |    |      |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | you have completed this procedure  |    |      |                  |   |                   |  |
| the alarm remains | go to the next step  |    |      |                  |   |                   |  |
| 2                 | Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | you have completed this procedure  |    |      |                  |   |                   |  |
| the alarm remains | go to the next step  |    |      |                  |   |                   |  |
| 3                 | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |    |      |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |    |      |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |    |      |                  |   |                   |  |

—end—

## Procedure 5-36 OCI—TCA - Optical Power Tx Low

---

### Probable cause

This alarm becomes active when the laser is operating within an acceptable performance range, but output is exceeding the user threshold of the TxPowerLow parameter. Properties of the laser change as the circuit pack ages. When these properties approach unacceptable levels this alarm may be raised.

This alarm can also be raised if there is the Tx laser is shut down because of no channel assignment.

### Impact

Minor, non-service-affecting.

### Precautions

#### **ATTENTION**

When clearing this alarm on Optical Metro 5100 shelves, make sure that the SP, and at least one non-SP circuit pack that is carrying the database is seated in the shelf, and the software is in a committed state. The System Manager shows database-carrying circuit packs in bold text. You can also use the Optical Metro Inventory dialog box to locate the standby database.

#### **ATTENTION**

##### **Power fluctuating around user defined TCAs and alarm toggling**

This alarm may toggle on the System Manager if the receive optical power reading fluctuates around the user defined TCA threshold. To clear the behavior of alarm toggling, move the user defined TCA threshold away from the power range around which the optical power reading fluctuates, or adjust the power level to the acceptable range so that the alarm is cleared.

—continued—

Procedure 5-36 (continued)  
**OCI—TCA - Optical Power Tx Low**

**CAUTION****Risk of recovery procedures affecting traffic**

This alarm is not service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

## Action

| Step | Action   |   |
|------|--|---|
| 1    | Check if there is a channel assignment.  |   |
|      | <b>If</b>  | <b>Then</b>   |
|      | there is no channel assignment   | follow <a href="#">Procedure 3-3 “Making or modifying channel assignments”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. |
|      | there is a channel assignment  | go to <a href="#">step 3</a>  |
| 2    | <b>If</b>  | <b>Then</b>   |
|      | the alarm clears   | you have completed this procedure   |
|      | the alarm remains  | go to the next step   |
| 3    | Make sure that the user threshold value is what you really want. If the value is set too high, adjust it to the desired value. |   |
|      | <b>If</b>  | <b>Then</b>   |
|      | the alarm clears   | you have completed this procedure   |
|      | the alarm remains  | go to the next step   |

—continued—

5-120 Clearing OCI and OCI SRM alarms

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Procedure 5-36 (continued)

**OCI—TCA - Optical Power Tx Low**

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| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>4</b>          | Reseat the OCI. Follow <a href="#">Procedure 3-68 "Reseating a circuit pack"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>5</b>          | Replace the OCI. Follow <a href="#">Procedure 3-1 "Replacing an OCI circuit pack"</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

---

## Procedure 5-37

# OCI—Transceiver Degrade

---

### Probable cause

This alarm becomes active when the laser is operating within an acceptable performance range, but output is beginning to degrade. Properties of the laser change as the circuit pack ages. When these properties approach unacceptable levels the Transceiver Degrade alarm is raised.

### Impact

Minor, non-service-affecting.

### Precautions

#### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, make sure that the SP, and at least one non-SP circuit pack that is carrying the database is seated in the shelf, and the software is in a committed state. The System Manager shows database-carrying circuit packs in bold text. You can also use the Optical Metro Inventory dialog box to locate the standby database.



#### CAUTION

##### Recovery procedures can affect traffic

This alarm is not service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.



#### CAUTION

##### Risk of recovery procedures affecting traffic

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-37 (continued)  
**OCI—Transceiver Degrade**

---

**Action**

---

| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>1</b>          | Reseat the OCI, and put the OCI back in-service. Follow <a href="#">Procedure 3-7 “Putting a circuit pack or SFP in-service”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>2</b>          | Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

## Procedure 5-38

# OCI—Unequipped or OOS Remote SRM Port

### Probable cause

This alarm becomes active on the Tx port on an OCI SRM, OCI SRM ESCON, or OCI SRM SONET/SDH when the corresponding far-end OCI SRM, OCI SRM ESCON, or OCI SRM SONET/SDH port is unequipped or out-of-service.

### Impact

Major, non-service-affecting.

### Action

| Step | Action   |  |
|------|--|--|
| 1    | Use the System Manager to verify that there is a channel assignment configured for the corresponding far-end SRM OCI port. |  |
|      | <b>If</b>  | <b>Then</b>  |
|      | there is no channel assignment   | follow <a href="#">Procedure 3-3 “Making or modifying channel assignments”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step.            |
|      | there is a channel assignment  | go to step 3   |
| 2    | <b>If</b>  | <b>Then</b>  |
|      | the alarm clears   | you completed this procedure   |
|      | the alarm remains  | go the next step   |
| 3    | Make sure that all corresponding SRM OCI facilities are in-service.  |  |
|      | <b>If</b>  | <b>Then</b>  |
|      | the facilities are out-of-service  | follow <a href="#">Procedure 3-10 “Putting a circuit pack or SFP facility in-service”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. |
|      | otherwise  | go the next step   |

—continued—

5-124 Clearing OCI and OCI SRM alarms

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Procedure 5-38 (continued)

**OCI—Unequipped or OOS Remote SRM Port**

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| <b>Step</b>       | <b>Action</b>   |           |             |                  |                              |                   |                                    |
|-------------------|---|-----------|-------------|------------------|------------------------------|-------------------|------------------------------------|
| <b>4</b>          | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you completed this procedure</td></tr><tr><td>the alarm remains</td><td>go the next step</td></tr></tbody></table>                   | <b>If</b> | <b>Then</b> | the alarm clears | you completed this procedure | the alarm remains | go the next step                   |
| <b>If</b>         | <b>Then</b>   |           |             |                  |                              |                   |                                    |
| the alarm clears  | you completed this procedure  |           |             |                  |                              |                   |                                    |
| the alarm remains | go the next step  |           |             |                  |                              |                   |                                    |
| <b>5</b>          | Delete and then reprovision the channel assignments. Follow the procedures in the <a href="#">“Provisioning circuit packs and managing traffic”</a> chapter in <i>Provisioning and Operating Procedures</i> , 323-1701-310.                       |           |             |                  |                              |                   |                                    |
|                   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you completed this procedure</td></tr><tr><td>the alarm remains</td><td>contact your next level of support</td></tr></tbody></table> | <b>If</b> | <b>Then</b> | the alarm clears | you completed this procedure | the alarm remains | contact your next level of support |
| <b>If</b>         | <b>Then</b>   |           |             |                  |                              |                   |                                    |
| the alarm clears  | you completed this procedure  |           |             |                  |                              |                   |                                    |
| the alarm remains | contact your next level of support  |           |             |                  |                              |                   |                                    |

—end—

## Procedure 5-39

# OCI—Unknown Circuit Pack

### Probable cause

This alarm becomes active when

- the SP circuit pack fails to retrieve the manufacturing data on the circuit pack (data may be missing or may be incorrect)

or when

- the circuit pack type cannot be recognized by the software (the Release version of the circuit pack is not supported by the Release version of the shelf)

If the slot is provisioned for an OCI, the System Manager displays OCI in the Card column of the Fault–Active Alarms window.

### Impact

Major, non-service-affecting.

### Precautions



#### CAUTION

##### Risk of recovery procedures affecting traffic

This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI is not protected externally.

#### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 5-39 (continued)  
**OCI—Unknown Circuit Pack**

**Action**

| Step                       | Action  |                                   |                            |             |                  |   |                   |   |
|----------------------------|---|-----------------------------------|----------------------------|-------------|------------------|---|-------------------|---|
| 1                          | <p>Read the latest Baseline Report to see if the circuit pack is compatible with the Release version of the shelf.</p> <p><b>Note:</b> Baseline Reports are available through Nortel Networks. Refer to the <a href="#">“Technical assistance service telephone numbers”</a> section in <a href="#">“About this document”</a> at the beginning of this book.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b> the circuit pack</td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>is compatible</td> <td>go to <a href="#">step 3</a></td> </tr> <tr> <td>is incompatible</td> <td>replace it with a compatible circuit pack. Follow procedures in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201 (or <i>Installing Optical Metro 5100 Shelves and Components</i>, 323-1701-210), and <i>Provisioning and Operating Procedures</i>, 323-1701-310. Go to the next step.</td> </tr> </table> |                                   | <b>If</b> the circuit pack | <b>Then</b> | is compatible    | go to <a href="#">step 3</a>  | is incompatible   | replace it with a compatible circuit pack. Follow procedures in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201 (or <i>Installing Optical Metro 5100 Shelves and Components</i> , 323-1701-210), and <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. |
| <b>If</b> the circuit pack | <b>Then</b>   |                                   |                            |             |                  |   |                   |   |
| is compatible              | go to <a href="#">step 3</a>  |                                   |                            |             |                  |   |                   |   |
| is incompatible            | replace it with a compatible circuit pack. Follow procedures in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201 (or <i>Installing Optical Metro 5100 Shelves and Components</i> , 323-1701-210), and <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step.   |                                   |                            |             |                  |   |                   |   |
| 2                          | <b>If</b>   | <b>Then</b>                       |                            |             |                  |   |                   |   |
|                            | the alarm clears  | you have completed this procedure |                            |             |                  |   |                   |   |
|                            | the alarm remains   | go to the next step               |                            |             |                  |   |                   |   |
| 3                          | <p>Reseat the OCI. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>   |                                   | <b>If</b>                  | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step   |
| <b>If</b>                  | <b>Then</b>   |                                   |                            |             |                  |   |                   |   |
| the alarm clears           | you have completed this procedure   |                                   |                            |             |                  |   |                   |   |
| the alarm remains          | go to the next step   |                                   |                            |             |                  |   |                   |   |
| 4                          | <p>Replace the OCI. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </table>  |                                   | <b>If</b>                  | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |
| <b>If</b>                  | <b>Then</b>   |                                   |                            |             |                  |   |                   |   |
| the alarm clears           | the removed circuit pack has faults. You have completed this procedure.   |                                   |                            |             |                  |   |                   |   |
| the alarm remains          | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |                                   |                            |             |                  |   |                   |   |

—end—

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## Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

---

Use the procedures in this chapter to clear OCI SRM GbE/FC and OCI SRM GbE alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, contact your next level of technical support.

For a list of OCI SRM GbE/FC and OCI SRM GbE circuit pack types, see the [“See Table 4-6 for actions during the holdoff period.”](#) section in 323-1701-102, *Hardware Description*.

In the System Manager, alarms raised against OCI SRM GbE/FC and OCI SRM GbE circuit packs are shown as GFSRM alarms.

To troubleshoot GFSRM alarms raised against OCI SRM GbE/FC and OCI SRM GbE circuit packs used in an interoperable topology with a SONET/SDH network, make sure that you have access to the troubleshooting technical publications for the equipment used in the SONET/SDH network.

For more information on OCI SRM GbE/FC and OCI SRM GbE circuit packs in bookended and interoperable topologies, see [Chapter 3, “Supported configurations”](#) in *Network Planning and Link Engineering*, 323-1701-110.

[Table 6-1](#) lists the meaning of the indicator lamps on OCI SRM GbE/FC and OCI SRM GbE circuit packs.

**Table 6-1**  
**OCI SRM GbE/FC and OCI SRM GbE circuit pack indicator lamps**

| Indicator lamp   | Color     | State    | Meaning   |
|--|-----------|----------|---|
| LOS  | yellow    | on       | The circuit pack cannot detect a signal or is experiencing a loss of synchronization.   |
|  |           | off      | The circuit pack is receiving a signal.   |
| ACTIVE   | green     | on       | There is a channel assignment between the circuit pack and an OCLD, and the circuit pack facility is in-service. If the concatenation mode is v-cat, there is at least one path provisioned.  |
|  |           | off      | <ul style="list-style-type: none"> <li>There is a channel assignment between the circuit pack and an OCLD, and the circuit pack facility is out-of-service.</li> <li>There is no channel assignment between the circuit pack and an OCLD (the circuit pack facility is either in-service or out-of-service)</li> <li>If the concatenation mode is v-cat, there are no paths provisioned.</li> </ul> |
| STATUS   | green/red | green    | The circuit pack inventory is in-service. (See <a href="#">Note 1.</a> )  |
|  |           | red      | The circuit pack has failed.  |
|  |           | off      | <ul style="list-style-type: none"> <li>The circuit pack inventory is out-of-service.</li> <li>The circuit pack circuit pack is mismatched, deleted, or an has an Autoprovisioning Mismatch alarm raised against it.</li> </ul>  |
|  |           | flashing | <ul style="list-style-type: none"> <li>The circuit pack is the active database-carrying circuit pack during a database copy operation. (See <a href="#">Note 2.</a>)</li> </ul>   |
| <p><b>Note 1:</b> A green STATUS lamp does not indicate the presence of traffic.</p> <p><b>Note 2:</b> Do not remove the active database-carrying circuit pack during the database copy to the standby circuit pack.</p> |           |          |   |

## Before you begin

Read “[Troubleshooting the Optical Metro 5100/5200](#)” chapter in this book for detailed information on how to respond to alarm indicators (audible alarms and lamps). The “[Alarm description](#)” chapter in this book explains events, warnings, and error messages.

## Requirements



### CAUTION

#### Risk of electrostatic discharge

Observe all antistatic precautions when handling the circuit packs.

Exposed circuit packs can be damaged by electrostatic discharge. When handling circuit packs always wear a wrist strap that is grounded to the shelf maintenance panel, and shoe straps if necessary. For more information, refer to the “Handling circuit packs” section of [“Isolating faults that do not generate alarms”](#) in this book.

### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf, and the software must be in a committed state. The System Manager shows database-carrying circuit packs in bold text. You can also use the Optical Metro Inventory dialog box to locate the standby database.



### CAUTION

#### Risk of laser radiation

The Optical Metro 5100/5200 operates up to a Hazard Level of k x 3A (IEC 60825-2:2000) or 1M (IEC 60825-2:2004). Use only viewing instruments with proper optical attenuation.



### CAUTION

#### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

## Procedure list

The OCI SRM GbE/FC and OCI SRM GbE alarms are listed alphabetically. [Table 6-2](#) lists the procedures in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

**Table 6-2**  
**Procedures for clearing OCI SRM GbE/FC and OCI SRM GbE alarms**

| Procedure   | Page                 | Alarm is masked if equipment or facility is OOS |
|---|----------------------|---|
| <a href="#">6-1 GFSRM—Path Alarm Indication Signal(s)</a>                                       | <a href="#">6-6</a>  | Facility  |
| <a href="#">6-2 GFSRM—Automatic Switch to Protection Path active</a>                            | <a href="#">6-9</a>  | Not applicable                                  |
| <a href="#">6-3 GFSRM—Autoprovisioning Mismatch, Circuit Pack Mismatch</a>                      | <a href="#">6-10</a> | Equipment                                       |
| <a href="#">6-4 GFSRM—Backplane Loss of Activity</a>  | <a href="#">6-15</a> | Equipment                                       |
| <a href="#">6-5 GFSRM—Circuit Pack Failed</a>   | <a href="#">6-20</a> | Equipment                                       |
| <a href="#">6-6 GFSRM—Circuit Pack Missing</a>  | <a href="#">6-22</a> | Equipment                                       |
| <a href="#">6-7 GFSRM—Client Service Mismatch</a>   | <a href="#">6-25</a> | Facility  |
| <a href="#">6-8 GFSRM—Facility Loopback</a>   | <a href="#">6-28</a> | Not applicable                                  |
| <a href="#">6-9 GFSRM—Far End Client Rx Signal Fail</a>   | <a href="#">6-29</a> | Facility  |
| <a href="#">6-10 GFSRM—Forced Switch to East Path Active, Forced Switch to West Path Active</a> | <a href="#">6-30</a> | Not applicable                                  |
| <a href="#">6-11 GFSRM—Insufficient Link Capacity</a>   | <a href="#">6-31</a> | Facility  |
| <a href="#">6-12 GFSRM—Inter-card Communication Failure</a>                                     | <a href="#">6-32</a> | Equipment                                       |
| <a href="#">6-13 GFSRM—Invalid Signal (backplane)</a>   | <a href="#">6-35</a> | Facility  |
| <a href="#">6-14 GFSRM—LAN Link Down</a>  | <a href="#">6-41</a> | Facility  |
| <a href="#">6-15 GFSRM—Loss of Frame Delineation</a>  | <a href="#">6-45</a> | Facility  |
| <a href="#">6-16 GFSRM—Loss of Pointer</a>  | <a href="#">6-48</a> | Facility  |
| <a href="#">6-17 GFSRM—Loss of Synchronization</a>  | <a href="#">6-50</a> | Facility  |
| <a href="#">6-18 GFSRM—Loss of Timing Reference</a>   | <a href="#">6-53</a> | Facility  |
| <a href="#">6-19 GFSRM—Manual Switch to (West) or (East) Path active</a>                        | <a href="#">6-57</a> | Not applicable                                  |
| <a href="#">6-20 GFSRM—Path Lockout active</a>  | <a href="#">6-58</a> | Not applicable                                  |
| <a href="#">6-21 GFSRM—Payload Label Mismatch</a>   | <a href="#">6-59</a> | Facility  |
| <a href="#">6-22 GFSRM—Performance Monitoring Timer Failed</a>                                  | <a href="#">6-61</a> | Equipment                                       |

**Table 6-2 (continued)**  
**Procedures for clearing OCI SRM GbE/FC and OCI SRM GbE alarms**

| <b>Procedure</b>                                    | <b>Page</b>          | <b>Alarm is masked if equipment or facility is OOS</b> |
|---|----------------------|--|
| <a href="#">6-23 GFSRM—Remote Defect Indication</a> | <a href="#">6-64</a> | Facility   |
| <a href="#">6-24 GFSRM—Rx Loss of Signal</a>        | <a href="#">6-66</a> | Facility   |
| <a href="#">6-25 GFSRM—Terminal Loopback</a>        | <a href="#">6-70</a> | Not applicable   |
| <a href="#">6-26 GFSRM—Unequipped</a>               | <a href="#">6-71</a> | Facility   |
| <a href="#">6-27 GFSRM—Unknown Circuit Pack</a>     | <a href="#">6-74</a> | Equipment  |

## Procedure 6-1 GFSRM—Path Alarm Indication Signal(s)

---

### Probable cause

This alarm becomes active against the SONET/SDH path (TX) of a connection when local equipment is receiving an alarm indication signal from upstream equipment. One of the following conditions exists:

- in bookended topology, upstream facility failure or out-of-service
- in interoperable topology, upstream facility failure in SONET/SDH network
- not completely provisioned connection

### Impact

Warning, non-service-affecting.

### Precautions



#### **CAUTION**

##### **Risk of recovery procedures affecting traffic**

This alarm is not service-affecting, however a service-affecting condition exists upstream and the recovery action can be service-affecting.



#### **CAUTION**

##### **Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-1 (continued)

**GFSRM—Path Alarm Indication Signal(s)****Action**

| <b>Step</b> | <b>Action</b>   |
|-------------|---|
| 1           | Using the Fault—Active Alarms window in System Manger, identify all the alarms related to this alarm.   |
| 2           | Locate the OCI SRM port or ports with active path AIS alarms. Determine if all the paths for a client port are impacted.<br><b>If</b> all the paths are impacted <b>Then go to</b> <a href="#">step 3</a><br>only some of the paths are impacted <a href="#">step 7</a> |
| 3           | Make sure that there are no facility alarms at the upstream NE.<br><b>If</b> there are facility alarms <b>Then go to</b> <a href="#">step 4</a><br>otherwise <a href="#">step 5</a>   |
| 4           | Make sure that none of the facilities at the far-end NE are out-of-service. If a facility is OOS, place the facility in-service.<br><b>If</b> the alarm clears <b>Then</b> you have completed this procedure<br>the alarm remains go to the next step                   |
| 5           | <b>If</b> the topology used is <b>Then</b><br>bookended contact your next level of support<br>interoperable go to <a href="#">step 6</a>  |
| 6           | Make sure that there are no alarms in the SONET/SDH network related to the paths that are allocated to the OCI SRM connection.  |

—continued—

**6-8** Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

---

Procedure 6-1 (continued)

**GFSRM—Path Alarm Indication Signal(s)**

---

| <b>Step</b>       | <b>Action</b>  |           |             |                  |                                   |                   |                                    |
|-------------------|--|-----------|-------------|------------------|-----------------------------------|-------------------|------------------------------------|
| 7                 | If there are alarms in the SONET/SDH network, follow the appropriate procedures to clear the alarms.   |           |             |                  |                                   |                   |                                    |
|                   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>contact your next level of support</td></tr></tbody></table> | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure | the alarm remains | contact your next level of support |
| <b>If</b>         | <b>Then</b>  |           |             |                  |                                   |                   |                                    |
| the alarm clears  | you have completed this procedure  |           |             |                  |                                   |                   |                                    |
| the alarm remains | contact your next level of support   |           |             |                  |                                   |                   |                                    |

—end—

---

## Procedure 6-2

# GFSRM—Automatic Switch to Protection Path active

---

### Probable cause

This alarm becomes active when a fault occurs on the working path of a protected, revertive connection, and traffic is automatically switched from the working path to the protection path.

This alarm is available only if the Revertive mode is enabled for the given connection.

### Impact

Minor, non-service-affecting.

*Note:* The channel is running unprotected until the fault on the working path is corrected.

### Action

---

| Step                                   | Action   |    |      |                                       |                                   |  |                                    |
|--|--|----|------|---------------------------------------|-----------------------------------|--|------------------------------------|
| 1                                      | Using the Connections—Channel Assignments—Protection screen in System Manager, verify the Rx Reversion WTR time settings.  |    |      |                                       |                                   |  |                                    |
| 2                                      | Using the Fault—Active Alarms window in System Manger, check the working path for alarms.  |    |      |                                       |                                   |  |                                    |
| 3                                      | Follow the appropriate procedures to clear the alarms on the working path.<br><i>Note:</i> The “Automatic Switch to Protection Path Active” alarm will not clear until the Wait-to-Restore (WTR) period has expired. Look under Fault-Event Console to find out when the WTR timer started                     |    |      |                                       |                                   |  |                                    |
|  | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears after the WTR period</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains after the WTR period</td> <td>contact your next level of support</td> </tr> </tbody> </table> | If | Then | the alarm clears after the WTR period | you have completed this procedure | the alarm remains after the WTR period | contact your next level of support |
| If                                     | Then   |    |      |                                       |                                   |  |                                    |
| the alarm clears after the WTR period  | you have completed this procedure  |    |      |                                       |                                   |  |                                    |
| the alarm remains after the WTR period | contact your next level of support   |    |      |                                       |                                   |  |                                    |

---

—end—

## Procedure 6-3

### GFSRM—Autoprovisioning Mismatch, Circuit Pack Mismatch

#### Probable cause

The Autoprovisioning Mismatch alarm becomes active if:

- an OCI SRM is seated in an OFA shelf. OCI SRM circuit packs are supported in WDM shelves only.
- the maximum number of supported client circuit packs are already provisioned on the shelf (two for Optical Metro 5100 shelves, and eight for Optical Metro 5200 shelves)

The Circuit Pack Mismatch alarm becomes active when the wrong type of OCI SRM, or a non-OCI SRM circuit pack, is installed in a provisioned OCI SRM slot.

#### Impact

[Table 6-3](#) lists the impact that these alarms have under different conditions.

**Table 6-3**  
**Autoprovisioning Mismatch and Circuit Pack Mismatch alarm impact**

| Alarm                     | Conditions  | Severity | Impact                |
|---------------------------|---|----------|-----------------------|
| Autoprovisioning Mismatch | OCI SRM is seated in a shelf defined as OFA.  | Major    | Non-service-affecting |
| Circuit Pack Mismatch     | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|                           | If there are no channel assignments on the circuit pack.                                  | Major    | Non-service-affecting |

—continued—

---

Procedure 6-3 (continued)

**GFSRM—Autoprovisioning Mismatch, Circuit Pack Mismatch**

---

## Precautions

### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



### CAUTION

#### Risk of recovery procedures affecting traffic

This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI SRM GbE/FC is not protected externally.



### CAUTION

#### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-3 (continued)

**GFSRM—Autoprovisioning Mismatch, Circuit Pack Mismatch**

**Action**

| Step | Action   |  |
|------|--|--|
| 1    | Determine the shelf type: OADM, Terminal, or OFA. On the Configuration-Communications screen of the System Manager, look in the “Shelf Type” column.   |  |
| 2    | <b>If</b> the shelf type is  | <b>Then</b>  |
|      | an OFA shelf and should be an OFA shelf  | remove any circuit packs other than OFAs or APBEs that are seated in slots 1-8 or 11-18. Go to <a href="#">step 3</a> .  |
|      | an OFA shelf but should be an OADM or terminal shelf   | follow <a href="#">Procedure 4-1 “Decommissioning a shelf”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310, and <a href="#">Chapter 3 “Commissioning a shelf”</a> in <i>Commissioning Procedures</i> , 323-1701-220. Go to <a href="#">step 4</a> . |
|      | the shelf type is an OADM or terminal shelf  | go to <a href="#">step 4</a>   |
| 3    | <b>If</b>  | <b>Then</b>  |
|      | the alarm clears   | you have completed this procedure  |
|      | the alarm remains  | contact your next level of support   |
| 4    | Make sure that the circuit pack in the slot is a circuit pack of   |  |
|      | <ul style="list-style-type: none"> <li>• the correct type</li> <li>• the correct bit rate</li> <li>• the correct wavelength</li> </ul>   |  |
| 5    | Make sure the connection type and bit rate for the circuit pack are provisioned correctly and are consistent with the subtending equipment. Double-click on the circuit pack in the Equipment-Inventory list. Under “Provisioning Data” check to see that the “Circuit Pack Type” and “Max Bit Rate” correctly correspond to the actual circuit pack seated in the slot. |  |
| 6    | <b>If</b> the slot is  | <b>Then</b> go to  |
|      | incorrectly provisioned  | the next step  |
|      | correctly provisioned  | <a href="#">step 12</a>  |

—continued—

Procedure 6-3 (continued)

**GFSRM—Autoprovisioning Mismatch, Circuit Pack Mismatch**

| Step | Action   |  |
|------|--|--|
| 7    | Take the OCI SRM circuit pack OOS. Follow <a href="#">Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”</a> (if applicable), and then <a href="#">Procedure 3-8 “Taking a circuit pack or SFP out-of-service”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |  |
| 8    | If there are facilities associated with the OCI SRM circuit pack, delete them. Follow <a href="#">Procedure 3-14 “Deleting a circuit pack or SFP facility”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |  |
| 9    | Delete the OCI SRM circuit pack. Follow <a href="#">Procedure 3-9 “Deleting a circuit pack or SFP from the inventory”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |  |
| 10   | <b>If</b>  | <b>Then</b>  |
|      | you need to manually pre-provision the slot  | follow <a href="#">Procedure 3-2 “Manually provisioning a circuit pack or SFP”</a> procedures in <i>Provisioning and Operating Procedures</i> , 323-1701-310   |
|      | you do not need to manually pre-provision the slot   | insert the correct OCI SRM circuit pack and it auto-provisions. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201, or <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components</i> , 323-1701-210. |
| 11   | <b>If</b>  | <b>Then</b>  |
|      | the alarm clears   | you have completed this procedure  |
|      | the alarm remains  | go to the next step  |

|   |  |
|---|--|
|  | <p><b>CAUTION</b><br/> <b>Risk of traffic loss</b><br/>                 Reseating the OCI SRM circuit pack causes a loss of traffic. If possible, reroute the traffic to another system.</p> |
|---|--|

—continued—

6-14 Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

---

Procedure 6-3 (continued)

**GFSRM—Autoprovisioning Mismatch, Circuit Pack Mismatch**

---

| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>12</b>         | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>13</b>         | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

---

## Procedure 6-4

# GFSRM—Backplane Loss of Activity

---

To clear the alarm on an Optical Metro 5200 shelf, perform steps [1](#) to [5](#) only.

To clear the alarm on an Optical Metro 5100 shelf, perform steps [6](#) to [11](#) only.

### Probable cause

#### Optical Metro 5200

This alarm becomes active when the OCI SRM circuit pack does not detect activity from the OCM in slot 9, or slot 10.

#### Optical Metro 5100

This alarm becomes active when the OCI SRM circuit pack does not detect activity from the OCLD in slot 2, or slot 4.

### Impact

Critical, service-affecting if there are channel assignments on the circuit pack, and the circuit pack is in-service.

### Precautions



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-4 (continued)

**GFSRM—Backplane Loss of Activity**

---

**Action**

---

| <b>Step</b> | <b>Action</b> |
|-------------|---------------|
|-------------|---------------|

---

***Clearing the alarm on an Optical Metro 5200 shelf***

|          |  |  |
|----------|--|--|
| <b>1</b> | <b>If</b>                                      | <b>Then</b>  |
|          | the OCI SRM raises the alarm against both OCMs | complete steps <a href="#">2</a> to <a href="#">3</a> only. If the alarm does not clear, contact your next level of support. |
|          | the OCI SRM raises the alarm against one OCM   | go to the next step and complete all the steps in this procedure   |

**Note:** New alarms may be raised when you reseal or replace an OCM. Ignore any new alarms until you have completed this procedure.

**2** Reseat the OCI SRM. Follow [Procedure 3-68 “Reseating a circuit pack”](#) in *Provisioning and Operating Procedures*, 323-1701-310.

|                   |                                   |
|-------------------|-----------------------------------|
| <b>If</b>         | <b>Then</b>                       |
| the alarm clears  | you have completed this procedure |
| the alarm remains | go to the next step               |

—continued—

Procedure 6-4 (continued)

**GFSRM—Backplane Loss of Activity**

| <b>Step</b>       | <b>Action</b>   |           |             |                  |   |                   |   |
|-------------------|---|-----------|-------------|------------------|---|-------------------|---|
| <b>3</b>          | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |           |             |                  |   |                   |   |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack.<br/>If the OCI SRM raised the alarm against both OCMs, contact your next level of support.<br/>If the OCI SRM raised the alarm against one OCM, go to the next step.</td> </tr> </tbody> </table> | <b>If</b> | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack.<br>If the OCI SRM raised the alarm against both OCMs, contact your next level of support.<br>If the OCI SRM raised the alarm against one OCM, go to the next step. |
| <b>If</b>         | <b>Then</b>   |           |             |                  |   |                   |   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |           |             |                  |   |                   |   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack.<br>If the OCI SRM raised the alarm against both OCMs, contact your next level of support.<br>If the OCI SRM raised the alarm against one OCM, go to the next step.   |           |             |                  |   |                   |   |
| <b>4</b>          | Reseat the OCM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |           |             |                  |   |                   |   |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step   |
| <b>If</b>         | <b>Then</b>   |           |             |                  |   |                   |   |
| the alarm clears  | you have completed this procedure   |           |             |                  |   |                   |   |
| the alarm remains | go to the next step   |           |             |                  |   |                   |   |
| <b>5</b>          | Replace the specified OCM. Follow <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |           |             |                  |   |                   |   |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table>  | <b>If</b> | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |
| <b>If</b>         | <b>Then</b>   |           |             |                  |   |                   |   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |           |             |                  |   |                   |   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |           |             |                  |   |                   |   |

—continued—

6-18 Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

Procedure 6-4 (continued)

**GFSRM—Backplane Loss of Activity**

**Step Action**

**Clearing the alarm on an Optical Metro 5100 shelf**



**CAUTION**

**Risk of traffic loss**

Reseating the OCI SRM circuit pack causes a loss of traffic. If possible, reroute the traffic to another system.

- 6** Reseat the OCI SRM. Follow [Procedure 3-68 “Reseating a circuit pack”](#) in *Provisioning and Operating Procedures*, 323-1701-310.
- | <b>If</b>         | <b>Then</b>                       |
|-------------------|-----------------------------------|
| the alarm clears  | you have completed this procedure |
| the alarm remains | go to the next step               |
- 7** **If** this alarm is reported by both OCLDs **Then** go to the next step  
by one OCLD **Then** go to step 9
- 8** Replace the OCI SRM. Follow [Procedure 3-1 “Replacing an OCI circuit pack”](#) in *Maintenance and Replacement Procedures*, 323-1701-546.
- | <b>If</b>         | <b>Then</b>   |
|-------------------|---|
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.                     |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step. |
- 9** **If** the path is protected **Then** switch traffic off of the OCLD. Follow [Procedure 3-48 “Forcing traffic to one path on a protected channel”](#) in *Provisioning and Operating Procedures*, 323-1701-310.  
the path is unprotected **Then** go to the next step. Performing the next step will affect traffic.

—continued—

Procedure 6-4 (continued)

**GFSRM—Backplane Loss of Activity**

| <b>Step</b>       | <b>Action</b>  |           |             |                  |   |                   |  |
|-------------------|--|-----------|-------------|------------------|---|-------------------|--|
| <b>10</b>         | Reseat the OCLD. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |           |             |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| <b>If</b>         | <b>Then</b>  |           |             |                  |   |                   |  |
| the alarm clears  | you have completed this procedure  |           |             |                  |   |                   |  |
| the alarm remains | go to the next step  |           |             |                  |   |                   |  |
| <b>11</b>         | Replace the OCLD. Follow <a href="#">Procedure 3-2 “Replacing an OCLD circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |           |             |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table> | <b>If</b> | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| <b>If</b>         | <b>Then</b>  |           |             |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |           |             |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |           |             |                  |   |                   |  |

**ATTENTION**

If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow [Procedure 3-49 “Removing a manual, force, or lockout switch from a protection path”](#) in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

## Procedure 6-5 GFSRM—Circuit Pack Failed

### Probable cause

This alarm becomes active when the circuit pack detects an equipment failure.

### Impact

Table 6-4 lists the impact that this alarm has under different conditions.

**Table 6-4**  
**OCI Circuit Pack Failed alarm impact**

| Alarm               | Conditions  | Severity | Impact                |
|---------------------|---|----------|-----------------------|
| Circuit Pack Failed | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|                     | If there are no channel assignments on the circuit pack.                                  | Major    | Non-service-affecting |

### Precautions

#### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



#### CAUTION

##### Risk of electrostatic discharge

Make sure you know how to handle electronic components correctly before you begin this procedure. Incorrect handling can cause damage to static-sensitive components. Always wear grounded antistatic wrist and shoe straps when handling circuit packs.



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-5 (continued)  
**GFSRM—Circuit Pack Failed**

**Action**

| Step              | Action  |    |      |                  |   |                   |  |
|-------------------|---|----|------|------------------|---|-------------------|--|
| 1                 | <p>Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| If                | Then  |    |      |                  |   |                   |  |
| the alarm clears  | you have completed this procedure   |    |      |                  |   |                   |  |
| the alarm remains | go to the next step   |    |      |                  |   |                   |  |
| 2                 | <p>Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| If                | Then  |    |      |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |    |      |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |    |      |                  |   |                   |  |

—end—

## Procedure 6-6 GFSRM—Circuit Pack Missing

### Probable cause

This alarm becomes active when the provisioned slot does not contain an OCI SRM circuit pack or the OCI SRM is not correctly seated in the slot.

### Impact

Table 6-5 lists the impact that this alarm has under different conditions.

**Table 6-5**  
**OCI Circuit Pack Missing alarm impact**

| Alarm                | Conditions  | Severity | Impact                |
|----------------------|---|----------|-----------------------|
| Circuit Pack Missing | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|                      | If there are no channel assignments on the circuit pack.                                  | Major    | Non-service-affecting |

### Precautions



**CAUTION**

**Risk of recovery procedures affecting traffic**

This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI SRM is not protected externally.



**CAUTION**

**Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**ATTENTION**

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.

—continued—

Procedure 6-6 (continued)  
**GFSRM—Circuit Pack Missing**

## Action

| Step                                 | Action  |    |      |                                    |  |                                      |                              |                              |                              |
|--------------------------------------|---|----|------|------------------------------------|--|--------------------------------------|------------------------------|------------------------------|------------------------------|
| 1                                    | Use System Manager to locate the slot that is indicating the missing circuit pack.  |    |      |                                    |  |                                      |                              |                              |                              |
| 2                                    | Make sure that the slot contains an OCI SRM circuit pack.   |    |      |                                    |  |                                      |                              |                              |                              |
|                                      | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the slot should contain an OCI SRM</td> <td>insert and seat an OCI SRM in the slot. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components 323-1701-201</i> OR <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components 323-1701-210</i>.<br/>Go to the next step.</td> </tr> <tr> <td>the slot is intentionally left empty</td> <td>go to <a href="#">step 4</a></td> </tr> <tr> <td>the slot contains an OCI SRM</td> <td>go to <a href="#">step 5</a></td> </tr> </tbody> </table>   | If | Then | the slot should contain an OCI SRM | insert and seat an OCI SRM in the slot. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components 323-1701-201</i> OR <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components 323-1701-210</i> .<br>Go to the next step. | the slot is intentionally left empty | go to <a href="#">step 4</a> | the slot contains an OCI SRM | go to <a href="#">step 5</a> |
| If                                   | Then  |    |      |                                    |  |                                      |                              |                              |                              |
| the slot should contain an OCI SRM   | insert and seat an OCI SRM in the slot. Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components 323-1701-201</i> OR <a href="#">Procedure 7-1 “Inserting circuit packs in an Optical Metro 5100 shelf”</a> in <i>Installing Optical Metro 5100 Shelves and Components 323-1701-210</i> .<br>Go to the next step.  |    |      |                                    |  |                                      |                              |                              |                              |
| the slot is intentionally left empty | go to <a href="#">step 4</a>  |    |      |                                    |  |                                      |                              |                              |                              |
| the slot contains an OCI SRM         | go to <a href="#">step 5</a>  |    |      |                                    |  |                                      |                              |                              |                              |
| 3                                    | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to <a href="#">step 5</a></td> </tr> </tbody> </table>  | If | Then | the alarm clears                   | you have completed this procedure  | the alarm remains                    | go to <a href="#">step 5</a> |                              |                              |
| If                                   | Then  |    |      |                                    |  |                                      |                              |                              |                              |
| the alarm clears                     | you have completed this procedure   |    |      |                                    |  |                                      |                              |                              |                              |
| the alarm remains                    | go to <a href="#">step 5</a>  |    |      |                                    |  |                                      |                              |                              |                              |
| 4                                    | <p>To clear the alarm if the slot is not used, follow these steps:</p> <ol style="list-style-type: none"> <li>Take the OCI SRM OOS. Follow <a href="#">Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”</a> (if applicable), and then <a href="#">Procedure 3-8 “Taking a circuit pack or SFP out-of-service”</a> in <i>Provisioning and Operating Procedures, 323-1701-310</i>.</li> <li>If there are facilities associated with the OCI SRM, delete them. Follow <a href="#">Procedure 3-14 “Deleting a circuit pack or SFP facility”</a> in <i>Provisioning and Operating Procedures, 323-1701-310</i>.</li> </ol> <p><b>Note:</b> If this OCI SRM is a part of a connection, you must delete the connection first. Follow <a href="#">Procedure 3-4 “Deleting channel assignments”</a>.</p> |    |      |                                    |  |                                      |                              |                              |                              |

—continued—

6-24 Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

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Procedure 6-6 (continued)

**GFSRM—Circuit Pack Missing**

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| <b>Step</b>       | <b>Action</b>  |           |             |                  |   |                   |  |
|-------------------|--|-----------|-------------|------------------|---|-------------------|--|
|                   | <p>c. Delete the OCI SRM equipment. Follow <a href="#">Procedure 3-9 “Deleting a circuit pack or SFP from the inventory”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p>  |           |             |                  |   |                   |  |
|                   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>contact your next level of support</td></tr></tbody></table>   | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | contact your next level of support   |
| <b>If</b>         | <b>Then</b>  |           |             |                  |   |                   |  |
| the alarm clears  | you have completed this procedure  |           |             |                  |   |                   |  |
| the alarm remains | contact your next level of support   |           |             |                  |   |                   |  |
| <b>5</b>          | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |           |             |                  |   |                   |  |
|                   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>go to the next step</td></tr></tbody></table>  | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| <b>If</b>         | <b>Then</b>  |           |             |                  |   |                   |  |
| the alarm clears  | you have completed this procedure  |           |             |                  |   |                   |  |
| the alarm remains | go to the next step  |           |             |                  |   |                   |  |
| <b>6</b>          | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |           |             |                  |   |                   |  |
|                   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>the removed circuit pack has faults. You have completed this procedure.</td></tr><tr><td>the alarm remains</td><td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td></tr></tbody></table> | <b>If</b> | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| <b>If</b>         | <b>Then</b>  |           |             |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |           |             |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |           |             |                  |   |                   |  |

—end—

## Procedure 6-7

# GFSRM—Client Service Mismatch

### Probable cause

This alarm becomes active against the client-side Tx facility when there is a mismatch in the protocol provisioning between the local OCI SRM GbE/FC and the remote OCI SRM GbE/FC.

The alarm point is identified at the generic framing procedure (GFP) level, and it indicates when the local OCI SRM GbE/FC is expecting GE or FC-100/FICON traffic, and that the remote OCI SRM GbE/FC is not provisioned with the same traffic or protocol.

In the interoperable model, this alarm can also be raised if traffic in a SONET/SDH network is misconnected. For example, this alarm is raised if GFP traffic from another vendor's equipment is assigned to the Optical Metro 5100/5200 traffic.

### Impact

Critical, service-affecting.

### Precautions



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

### Action

| Step | Action   |
|------|--|
| 1    | In the Connection—Channel Assignments window in System Manager, query the channel assignment for the OCI SRM GbE/FC at the near-end shelf and note the protocol specified in the Bit Rate field. |
| 2    | Perform the same query for the OCI SRM GbE/FC at the far-end shelf and make sure the protocol specified is the same as the one noted in <a href="#">step 1</a> .                                 |

—continued—

6-26 Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

---

Procedure 6-7 (continued)

**GFSRM—Client Service Mismatch**

---

| <b>Step</b> | <b>Action</b>  |  |
|-------------|--|--|
| <b>3</b>    | <b>If</b> the specified protocol is different                    | <b>Then</b><br>follow <a href="#">Procedure 3-3 “Making or modifying channel assignments”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310, and modify the Bit rate field so that the specified protocols are the same.<br>Go to the next step.          |
|             | is the same  | go to the next step  |
| <b>4</b>    | <b>If</b> the alarm clears                                       | <b>Then</b><br>you have completed this procedure   |
|             | the alarm remains  | go to the next step  |
| <b>5</b>    | <b>If</b> the channel assignment is Gigabit Ethernet             | <b>Then</b><br>contact your next level of support  |
|             | FC-100 or FICON  | go to the next step  |
| <b>6</b>    | <b>If</b> the subrate and extended reach parameter are different | <b>Then</b><br>follow <a href="#">Procedure 3-20 “Provisioning subrate and extended reach details”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310, and modify the Bit rate field so that the specified protocols are the same.<br>Go to the next step. |
|             | the same   | contact your next level of support   |

—continued—

Procedure 6-7 (continued)

**GFSRM—Client Service Mismatch**

---

| <b>Step</b> | <b>Action</b>   |
|-------------|---|
| <b>7</b>    | <b>If</b><br>the alarm clears<br>the alarm remains  |
|             | <b>Then</b><br>you have completed this procedure<br>go to the next step   |
| <b>8</b>    | <b>If</b> the topology is<br>bookended<br>interoperable   |
|             | <b>Then</b><br>contact your next level of support<br>go to the next step  |
| <b>9</b>    | Verify that there are no misconnections with the cross-connects that have been put in place in the SONET/SDH network. |
| <b>10</b>   | <b>If</b><br>the alarm clears<br>the alarm remains  |
|             | <b>Then</b><br>you have completed this procedure<br>contact your next level of support                                |

—end—

## Procedure 6-8 GFSRM—Facility Loopback

---

A Facility Loopback alarm means the optical signal received at the OCI SRM Rx port is being looped back to the Tx output without continuing through the circuit pack.

### Probable cause

This alarm becomes active against a client-side facility of the OCI SRM circuit pack when the client-side port has been placed in facility loopback mode.

*Note:* This is a normal indication when the loopback is on for testing or maintenance purposes. Loopback is only allowed when the facility is out-of-service.

### Impact

Minor, non-service-affecting.

### Action

| Step | Action  |   |
|------|---|---|
| 1    | Determine if the facility loopback is active for testing or maintenance purposes.   |   |
| 2    | <b>If</b> the loopback is necessary for testing or maintenance activities   | <b>Then</b> you have completed this procedure |
|      | not necessary   | go to the next step                           |
| 3    | Release the loopback if it is not necessary.  |   |
| 4    | In the System Manager, select the Equipment–Facilities window and double-click the client-side port associated with this slot.<br><i>The Optical Metro Facility dialog box appears.</i> |   |
| 5    | In the Loopback area, select the None radio button.   |   |
| 6    | Click <b>Apply</b> .  |   |
| 7    | Click <b>OK</b> .   |   |
| 8    | <b>If</b> the alarm clears  | <b>Then</b> you have completed this procedure |
|      | the alarm remains   | contact your next level of support            |

—end—

---

## Procedure 6-9

# GFSRM—Far End Client Rx Signal Fail

---

### Probable cause

This alarm becomes active on the near-end client side because of a problem at the far-end, such as loss of signal, loss of synchronization, or LAN link down.

### Impact

Warning, non-service-affecting.

### Action

---

| Step              | Action   |    |      |                  |                                   |                   |                                    |
|-------------------|--|----|------|------------------|-----------------------------------|-------------------|------------------------------------|
| 1                 | In System Manager, open the Fault-Active Alarms window and examine the alarms that are raised at the far-end.  |    |      |                  |                                   |                   |                                    |
| 2                 | Follow the appropriate procedures in <i>Trouble Clearing and Alarm Reference Guide</i> , 323-1701-542, to clear the alarms.  |    |      |                  |                                   |                   |                                    |
| 3                 | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>contact your next level of support</td> </tr> </tbody> </table> | If | Then | the alarm clears | you have completed this procedure | the alarm remains | contact your next level of support |
| If                | Then   |    |      |                  |                                   |                   |                                    |
| the alarm clears  | you have completed this procedure  |    |      |                  |                                   |                   |                                    |
| the alarm remains | contact your next level of support   |    |      |                  |                                   |                   |                                    |

---

—end—

## Procedure 6-10 GFSRM—Forced Switch to East Path Active, Forced Switch to West Path Active

---

### Probable cause

This alarm becomes active when you perform a force switch on the specified path and the force switch is active.

This is a normal indication when a forced switch is used for testing or maintenance activities.

### Impact

Minor, non-service-affecting.

### Action

---

| Step  | Action  |                         |      |   |                                   |                   |                                    |
|---|---|-------------------------|------|---|-----------------------------------|-------------------|------------------------------------|
| 1   | Determine if a Force Switch is active for testing or maintenance purposes.  |                         |      |   |                                   |                   |                                    |
| 2   | <table><thead><tr><th>If the forced switch is</th><th>Then</th></tr></thead><tbody><tr><td>necessary for testing or maintenance activities</td><td>you have completed this procedure</td></tr><tr><td>not necessary</td><td>go to the next step</td></tr></tbody></table> | If the forced switch is | Then | necessary for testing or maintenance activities | you have completed this procedure | not necessary     | go to the next step                |
| If the forced switch is                         | Then  |                         |      |   |                                   |                   |                                    |
| necessary for testing or maintenance activities | you have completed this procedure   |                         |      |   |                                   |                   |                                    |
| not necessary                                   | go to the next step   |                         |      |   |                                   |                   |                                    |
| 3   | Release the force switch if it is not necessary. Follow <a href="#">Procedure 3-49 “Removing a manual, force, or lockout switch from a protection path”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |                         |      |   |                                   |                   |                                    |
|   | <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>contact your next level of support</td></tr></tbody></table>                                  | If                      | Then | the alarm clears                                | you have completed this procedure | the alarm remains | contact your next level of support |
| If  | Then  |                         |      |   |                                   |                   |                                    |
| the alarm clears                                | you have completed this procedure   |                         |      |   |                                   |                   |                                    |
| the alarm remains                               | contact your next level of support  |                         |      |   |                                   |                   |                                    |

---

—end—

## Procedure 6-11

# GFSRM—Insufficient Link Capacity

### Probable cause

This alarm becomes active on the OCI SRM GbE/FC or OCI SRM GbE client Rx facility when the number of paths (STS-3c/VC-4) provisioned is fewer than the number of paths required for the provisioning protocol (bit rate). If the protocol is Gigabit Ethernet, at least one STS-3c/VC-4 is required. If the protocol is FC-100/FICON, six STS-3c/VC-4 are required. If the protocol is FC-200/FICON Express, twelve STS-3c/VC-4 are required.

The alarm can also be raised after traffic has been established and an STS-3c/VC-4 connection is accidentally removed by a TL1 command or through System Manager.

### Impact

Critical, service-affecting.

### Action

| Step | Action  |   |
|------|---|---|
| 1    | In the Connection—Channel Assignments window in System Manager, query the channel assignment for the OCI SRM and verify that the Bit rate and Transport structure are consistent at the near-end and the far-end. |   |
|      | <b>Note:</b> The Transport field indicates the number of paths (STS-3c/VC-4) that have been provisioned.  |   |
| 2    | <b>If</b>   | <b>Then</b>   |
|      | the channel assignments need to be modified   | follow <a href="#">Procedure 3-3 “Making or modifying channel assignments”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310, and select the correct number of paths in the Transport field.<br>Go to the next step. |
|      | if the channel assignments do not need to be modified   | contact your next level of support  |
| 3    | <b>If</b>   | <b>Then</b>   |
|      | the alarm clears  | you have completed this procedure   |
|      | the alarm remains   | contact your next level of support  |

—end—

## Procedure 6-12 GFSRM—Inter-card Communication Failure

---

### Probable cause

This alarm becomes active when the SP circuit pack cannot communicate with the specified OCI SRM GbE/FC or OCI SRM GbE circuit pack.

### Impact

Major, non-service-affecting.

### Precautions

#### **ATTENTION**

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



#### **CAUTION**

##### **Risk of recovery procedures affecting traffic**

This condition is not service-affecting, however the recovery action can be service-affecting if the traffic to the OCI SRM is not protected externally.



#### **CAUTION**

##### **Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-12 (continued)

**GFSRM—Inter-card Communication Failure****Action**

| <b>Step</b>                                   | <b>Action</b>  |           |                   |   |   |   |  |
|---|--|-----------|-------------------|---|---|---|--|
| <b>1</b>                                      | Using the Fault—Active Alarms window in System Manger, check to see if the Inter-card Communication Failure alarm is raised by more than one circuit pack in the shelf.  |           |                   |   |   |   |  |
|   | <table border="0"> <tr> <td><b>If</b></td> <td><b>Then go to</b></td> </tr> <tr> <td>the alarm is raised by only this circuit pack</td> <td>the next step</td> </tr> <tr> <td>the alarm is raised on multiple circuit packs</td> <td>step 5</td> </tr> </table>  | <b>If</b> | <b>Then go to</b> | the alarm is raised by only this circuit pack | the next step   | the alarm is raised on multiple circuit packs | step 5   |
| <b>If</b>                                     | <b>Then go to</b>  |           |                   |   |   |   |  |
| the alarm is raised by only this circuit pack | the next step  |           |                   |   |   |   |  |
| the alarm is raised on multiple circuit packs | step 5   |           |                   |   |   |   |  |
| <b>2</b>                                      | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |           |                   |   |   |   |  |
|   | <table border="0"> <tr> <td><b>If</b></td> <td><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>  | <b>If</b> | <b>Then</b>       | the alarm clears                              | you have completed this procedure                                       | the alarm remains                             | go to the next step  |
| <b>If</b>                                     | <b>Then</b>  |           |                   |   |   |   |  |
| the alarm clears                              | you have completed this procedure  |           |                   |   |   |   |  |
| the alarm remains                             | go to the next step  |           |                   |   |   |   |  |
| <b>3</b>                                      | Reseat the SP. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |           |                   |   |   |   |  |
|   | <table border="0"> <tr> <td><b>If</b></td> <td><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>  | <b>If</b> | <b>Then</b>       | the alarm clears                              | you have completed this procedure                                       | the alarm remains                             | go to the next step  |
| <b>If</b>                                     | <b>Then</b>  |           |                   |   |   |   |  |
| the alarm clears                              | you have completed this procedure  |           |                   |   |   |   |  |
| the alarm remains                             | go to the next step  |           |                   |   |   |   |  |
| <b>4</b>                                      | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |           |                   |   |   |   |  |
|   | <table border="0"> <tr> <td><b>If</b></td> <td><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Go to step 6.</td> </tr> </table> | <b>If</b> | <b>Then</b>       | the alarm clears                              | the removed circuit pack has faults. You have completed this procedure. | the alarm remains                             | the circuit pack is not the problem. Reseat the original circuit pack. Go to step 6. |
| <b>If</b>                                     | <b>Then</b>  |           |                   |   |   |   |  |
| the alarm clears                              | the removed circuit pack has faults. You have completed this procedure.  |           |                   |   |   |   |  |
| the alarm remains                             | the circuit pack is not the problem. Reseat the original circuit pack. Go to step 6.   |           |                   |   |   |   |  |

—continued—

**6-34** Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

---

Procedure 6-12 (continued)

**GFSRM—Inter-card Communication Failure**

---

| <b>Step</b>       | <b>Action</b>   |
|-------------------|---|
| <b>5</b>          | Reseat the SP. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | you have completed this procedure   |
| the alarm remains | go to the next step   |
| <b>6</b>          | Replace the SP. Follow <a href="#">Procedure 3-13 “Replacing an SP circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |

—end—

## Procedure 6-13 GFSRM—Invalid Signal (backplane)

---

To clear the alarm on an Optical Metro 5200 shelf, perform steps 1 through 9 only.

To clear the alarm on an Optical Metro 5100 shelf, perform steps 10 through 14 only.

### Probable cause

This alarm becomes active because of an equipment failure. Locate and replace the faulty equipment.

#### Optical Metro 5200

This alarm becomes active when the OCI SRM receives an invalid signal from the OCM in slot 9, or slot 10.

#### Optical Metro 5100

This alarm becomes active when the OCI SRM receives an invalid signal from the OCLD in slot 2, or slot 4.

### Impact

Critical, service-affecting.

—continued—

Procedure 6-13 (continued)

**GFSRM—Invalid Signal (backplane)**

---

**Precautions**

**ATTENTION**

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



**CAUTION**

**Risk of recovery procedures affecting traffic**

The recovery actions may momentarily impact all traffic on the shelf.



**CAUTION**

**Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure.

For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-13 (continued)  
**GFSRM—Invalid Signal (backplane)**

**Action**

| Step | Action |
|------|--------|
|------|--------|

*Clearing the alarm on an Optical Metro 5200 shelf*

|   |  |
|---|--|
|  | <p><b>CAUTION</b><br/> <b>Risk of traffic loss</b><br/>                 Reseating the OCI SRM circuit pack causes a loss of traffic. If possible, reroute the traffic to another system.</p> |
|---|--|

- |                   |   |
|-------------------|---|
| <b>1</b>          | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.                              |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | you have completed this procedure   |
| the alarm remains | go to the next step   |
| <b>2</b>          | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.                        |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.   |
| <b>3</b>          | Reseat the indicated OCM (slot 9 or slot 10). Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.    |
| <b>4</b>          | Switch traffic to the reseated OCM. Follow <a href="#">Procedure 3-57 “Manual switching on OCM circuit packs”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |
| <b>If</b>         | <b>Then</b>   |
| the alarm clears  | you have completed this procedure   |
| the alarm remains | go to the next step   |

—continued—

6-38 Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

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Procedure 6-13 (continued)

**GFSRM—Invalid Signal (backplane)**

---

| <b>Step</b>             | <b>Action</b>   |           |             |                       |   |                         |   |
|-------------------------|---|-----------|-------------|-----------------------|---|-------------------------|---|
| <b>5</b>                | Replace the indicated OCM (slot 9 or slot 10). Follow <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |           |             |                       |   |                         |   |
|                         | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>the removed circuit pack has faults. You have completed this procedure.</td></tr><tr><td>the alarm remains</td><td>the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.</td></tr></tbody></table>   | <b>If</b> | <b>Then</b> | the alarm clears      | the removed circuit pack has faults. You have completed this procedure.   | the alarm remains       | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step. |
| <b>If</b>               | <b>Then</b>   |           |             |                       |   |                         |   |
| the alarm clears        | the removed circuit pack has faults. You have completed this procedure.   |           |             |                       |   |                         |   |
| the alarm remains       | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.   |           |             |                       |   |                         |   |
| <b>6</b>                | Using the System Manager, select the Connections-Channel Assignment tabs and identify the active OCLD.<br><b>Note 1:</b> In a protected connection, the active OCLD lists “Active” under the “Mode” Column.<br><b>Note 2:</b> In an unprotected connection, there is only one OCLD, and so by default, this one is the active OCLD.   |           |             |                       |   |                         |   |
| <b>7</b>                | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the path is protected</td><td>switch traffic off of the active OCLD. Follow <a href="#">Procedure 3-48 “Forcing traffic to one path on a protected channel”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</td></tr><tr><td>the path is unprotected</td><td>go to the next step. Performing the next step may affect traffic.</td></tr></tbody></table> | <b>If</b> | <b>Then</b> | the path is protected | switch traffic off of the active OCLD. Follow <a href="#">Procedure 3-48 “Forcing traffic to one path on a protected channel”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. | the path is unprotected | go to the next step. Performing the next step may affect traffic.                           |
| <b>If</b>               | <b>Then</b>   |           |             |                       |   |                         |   |
| the path is protected   | switch traffic off of the active OCLD. Follow <a href="#">Procedure 3-48 “Forcing traffic to one path on a protected channel”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |           |             |                       |   |                         |   |
| the path is unprotected | go to the next step. Performing the next step may affect traffic.   |           |             |                       |   |                         |   |
| <b>8</b>                | Reseat the active OCLD. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><b>Note:</b> This step can momentarily affect traffic on all channels.  |           |             |                       |   |                         |   |
|                         | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>go to the next step</td></tr></tbody></table>   | <b>If</b> | <b>Then</b> | the alarm clears      | you have completed this procedure   | the alarm remains       | go to the next step   |
| <b>If</b>               | <b>Then</b>   |           |             |                       |   |                         |   |
| the alarm clears        | you have completed this procedure   |           |             |                       |   |                         |   |
| the alarm remains       | go to the next step   |           |             |                       |   |                         |   |

—continued—

Procedure 6-13 (continued)  
**GFSRM—Invalid Signal (backplane)**

| Step              | Action  |    |      |                  |   |                   |   |
|-------------------|---|----|------|------------------|---|-------------------|---|
| 9                 | Replace the active OCLD. Follow <a href="#">Procedure 3-2 “Replacing an OCLD circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |    |      |                  |   |                   |   |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support |
| If                | Then  |    |      |                  |   |                   |   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |    |      |                  |   |                   |   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support   |    |      |                  |   |                   |   |

**ATTENTION**

If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow [Procedure 3-49 “Removing a manual, force, or lockout switch from a protection path”](#) in *Provisioning and Operating Procedures*, 323-1701-310.

**Clearing the alarm on an Optical Metro 5100 shelf**

When the alarm is raised by the OCI SRM in slot 1, (9) indicates that the OCI SRM is receiving an invalid signal from the OCLD in slot 2, and (10) indicates that the OCI SRM is receiving an invalid signal from the OCLD in slot 4.

When the alarm is raised by the OCI SRM in slot 3, (9) indicates that the OCI SRM is receiving an invalid signal from the OCLD in slot 4, and (10) indicates that the OCI SRM is receiving an invalid signal from the OCLD in slot 2.

| 10                                     | <table border="1"> <thead> <tr> <th>If</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>the alarm is raised against both OCLDs</td> <td>the next step</td> </tr> <tr> <td>the alarm is raised against one OCLD</td> <td>step 13</td> </tr> </tbody> </table> | If | Then go to | the alarm is raised against both OCLDs | the next step | the alarm is raised against one OCLD | step 13 |
|--|--|----|------------|--|---------------|--------------------------------------|---------|
| If                                     | Then go to   |    |            |  |               |                                      |         |
| the alarm is raised against both OCLDs | the next step  |    |            |  |               |                                      |         |
| the alarm is raised against one OCLD   | step 13  |    |            |  |               |                                      |         |

|   |  |
|---|--|
|  | <p><b>CAUTION</b><br/> <b>Risk of traffic loss</b><br/>                     Reseating the OCI SRM circuit pack causes a loss of traffic. If possible, reroute the traffic to another system.</p> |
|---|--|

—continued—

6-40 Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

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Procedure 6-13 (continued)

**GFSRM—Invalid Signal (backplane)**

---

| <b>Step</b> | <b>Action</b>  |
|-------------|--|
| <b>11</b>   | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><b>If</b> the alarm clears<br><b>Then</b> you have completed this procedure<br><b>If</b> the alarm remains<br><b>Then</b> go to the next step  |
| <b>12</b>   | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.<br><b>If</b> the alarm clears<br><b>Then</b> the removed circuit pack has faults. You have completed this procedure.<br><b>If</b> the alarm remains<br><b>Then</b> the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.              |
| <b>13</b>   | Reseat the OCLD indicated in the alarm. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><b>If</b> the alarm clears<br><b>Then</b> you have completed this procedure<br><b>If</b> the alarm remains<br><b>Then</b> go to the next step  |
| <b>14</b>   | Replace the OCLD. Follow <a href="#">Procedure 3-2 “Replacing an OCLD circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.<br><b>If</b> the alarm clears<br><b>Then</b> the removed circuit pack has faults. You have completed this procedure.<br><b>If</b> the alarm remains<br><b>Then</b> the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |

—end—

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## Procedure 6-14

# GFSRM—LAN Link Down

---

### Probable cause

This alarm becomes active against the client-side Rx facility when running GigE, FC, FC-100 in standard or extended reach under the following conditions:

- the channel assignment is Gigabit Ethernet and auto-negotiation is enabled on the OCI SRM and disabled on the subtending equipment

**Note:** On some models of client subtending equipment, the LAN Link Down alarm is not raised when auto-negotiation is enabled on the OCI SRM and disabled on the subtending equipment.

- one fiber between the OCI SRM Tx and the subtending equipment is broken
- the channel assignment is Gigabit Ethernet and auto-negotiation has completed, but no resolution is possible. For example, the client advertises half-duplex.
- the OCI SRM circuit pack is defective
- the subtending equipment is defective
- this alarm may be raised as a result of a fault between the GFSRM and the subtending equipment.

### Impact

Critical, service-affecting.

### Precautions

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-14 (continued)  
**GFSRM—LAN Link Down**

**Action**

| Step      | Action   |             |   |             |   |  |  |  |  |
|-----------|--|-------------|---|-------------|---|--|--|--|--|
| 1         | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the channel assignment is Gigabit Ethernet</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">go to <a href="#">step 5</a>.</td> </tr> <tr> <td></td> <td style="vertical-align: top;">is FC-100 or FICON</td> <td></td> <td style="vertical-align: top;">the next step</td> </tr> </table>  | <b>If</b>   | the channel assignment is Gigabit Ethernet  | <b>Then</b> | go to <a href="#">step 5</a> .  |  | is FC-100 or FICON                               |  | the next step  |
| <b>If</b> | the channel assignment is Gigabit Ethernet   | <b>Then</b> | go to <a href="#">step 5</a> .  |             |   |  |  |  |  |
|           | is FC-100 or FICON   |             | the next step   |             |   |  |  |  |  |
| 2         | <p>Using System Manager, determine the link state of the OCI SRM GbE/FC:</p> <ol style="list-style-type: none"> <li>a. Select the Equipment/Facilities tab.</li> <li>b. Double-click the line with the OCI SRM GbE/FC client-side port for which you want to determine the link state.</li> <li>c. In the Advanced Attributes area, under the SubRate and ExtReach fields, click <b>Details</b>.</li> </ol>  |             |   |             |   |  |  |  |  |
| 3         | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the Link State on the near-end OCI SRM GbE/FC is not indicating “Link Failure”</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">this alarm is for information purposes only. Clear far-end OCI SRM GbE/FC and OCLD alarms. Go to the next step.</td> </tr> <tr> <td></td> <td style="vertical-align: top;">is indicating “Link Failure”</td> <td></td> <td style="vertical-align: top;">go to <a href="#">step 7</a></td> </tr> </table>   | <b>If</b>   | the Link State on the near-end OCI SRM GbE/FC is not indicating “Link Failure”                                  | <b>Then</b> | this alarm is for information purposes only. Clear far-end OCI SRM GbE/FC and OCLD alarms. Go to the next step. |  | is indicating “Link Failure”                     |  | go to <a href="#">step 7</a>   |
| <b>If</b> | the Link State on the near-end OCI SRM GbE/FC is not indicating “Link Failure”   | <b>Then</b> | this alarm is for information purposes only. Clear far-end OCI SRM GbE/FC and OCLD alarms. Go to the next step. |             |   |  |  |  |  |
|           | is indicating “Link Failure”   |             | go to <a href="#">step 7</a>  |             |   |  |  |  |  |
| 4         | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the alarm clears</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">you have completed this procedure</td> </tr> <tr> <td></td> <td style="vertical-align: top;">the alarm remains</td> <td></td> <td style="vertical-align: top;">contact your next level of support</td> </tr> </table>  | <b>If</b>   | the alarm clears  | <b>Then</b> | you have completed this procedure   |  | the alarm remains                                |  | contact your next level of support   |
| <b>If</b> | the alarm clears   | <b>Then</b> | you have completed this procedure   |             |   |  |  |  |  |
|           | the alarm remains  |             | contact your next level of support  |             |   |  |  |  |  |
| 5         | <p>Verify that the auto-negotiation attributes between the subtending equipment and the OCI SRM are consistent.</p> <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the auto-negotiation attributes are consistent</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">contact your next level of support.</td> </tr> <tr> <td></td> <td style="vertical-align: top;">the auto-negotiation attributes are inconsistent</td> <td></td> <td style="vertical-align: top;">modify the auto-negotiation attributes at the subtending equipment. Go to the next step.</td> </tr> </table> | <b>If</b>   | the auto-negotiation attributes are consistent  | <b>Then</b> | contact your next level of support.   |  | the auto-negotiation attributes are inconsistent |  | modify the auto-negotiation attributes at the subtending equipment. Go to the next step. |
| <b>If</b> | the auto-negotiation attributes are consistent   | <b>Then</b> | contact your next level of support.   |             |   |  |  |  |  |
|           | the auto-negotiation attributes are inconsistent   |             | modify the auto-negotiation attributes at the subtending equipment. Go to the next step.                        |             |   |  |  |  |  |
| 6         | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;">the alarm clears</td> <td style="vertical-align: top;"><b>Then</b></td> <td style="vertical-align: top;">you have completed this procedure</td> </tr> <tr> <td></td> <td style="vertical-align: top;">the alarm remains</td> <td></td> <td style="vertical-align: top;">go to the next step</td> </tr> </table>   | <b>If</b>   | the alarm clears  | <b>Then</b> | you have completed this procedure   |  | the alarm remains                                |  | go to the next step  |
| <b>If</b> | the alarm clears   | <b>Then</b> | you have completed this procedure   |             |   |  |  |  |  |
|           | the alarm remains  |             | go to the next step   |             |   |  |  |  |  |
| 7         | <p>Make sure the optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the OCI SRM and the subtending equipment.</p>   |             |   |             |   |  |  |  |  |

—continued—

Procedure 6-14 (continued)  
**GFSRM—LAN Link Down**

| Step   | Action  |    |      |   |  |  |                               |
|--|---|----|------|---|--|--|-------------------------------|
| 8  | Use an optical power meter to measure the transmit power level at the Tx port of the affected OCI SRM. Check if the Tx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values.  |    |      |   |  |  |                               |
| <div style="border: 1px solid black; padding: 10px; display: inline-block;">  <div style="margin-left: 10px;"> <p><b>CAUTION</b><br/> <b>Risk of recovery procedures affecting traffic</b><br/>                     Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI SRM, fiber, or system).</p> </div> </div> |   |    |      |   |  |  |                               |
| 9  | Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal.   |    |      |   |  |  |                               |
| 10   | <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">If</th> <th style="text-align: left; border-bottom: 1px solid black;">Then</th> </tr> </thead> <tbody> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">there is a VOA attached to the fiber between the OCI and the subtending equipment</td> <td>re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br/><br/><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br/><br/>Go to the next step.</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">there is no VOA attached to the fiber between the OCI and the subtending equipment</td> <td>go to <a href="#">step 13</a></td> </tr> </tbody> </table>  | If | Then | there is a VOA attached to the fiber between the OCI and the subtending equipment | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br><br>Go to the next step. | there is no VOA attached to the fiber between the OCI and the subtending equipment | go to <a href="#">step 13</a> |
| If   | Then  |    |      |   |  |  |                               |
| there is a VOA attached to the fiber between the OCI and the subtending equipment  | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br><br>Go to the next step.  |    |      |   |  |  |                               |
| there is no VOA attached to the fiber between the OCI and the subtending equipment   | go to <a href="#">step 13</a>   |    |      |   |  |  |                               |
| 11   | <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">If</th> <th style="text-align: left; border-bottom: 1px solid black;">Then</th> </tr> </thead> <tbody> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>   | If | Then | the alarm clears  | you have completed this procedure  | the alarm remains  | go to the next step           |
| If   | Then  |    |      |   |  |  |                               |
| the alarm clears   | you have completed this procedure   |    |      |   |  |  |                               |
| the alarm remains  | go to the next step   |    |      |   |  |  |                               |
| 12   | <p>Use the proper cleaning kit to clean all the connectors between the subtending equipment and the OCI SRM Tx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in <a href="#">step 8</a>, this will allow you to see if there is any improvement to the Tx power.</li> </ul> <table border="0" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">If</th> <th style="text-align: left; border-bottom: 1px solid black;">Then</th> </tr> </thead> <tbody> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 10px;">the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table> | If | Then | the alarm clears  | you have completed this procedure  | the alarm remains  | go to the next step           |
| If   | Then  |    |      |   |  |  |                               |
| the alarm clears   | you have completed this procedure   |    |      |   |  |  |                               |
| the alarm remains  | go to the next step   |    |      |   |  |  |                               |

—continued—

6-44 Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

---

Procedure 6-14 (continued)

**GFSRM—LAN Link Down**

---

| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>13</b>         | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.       |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>14</b>         | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |

—end—

---

## Procedure 6-15

# GFSRM—Loss of Frame Delineation

---

This alarm is raised against the OCI SRM client Tx facility.

### Probable cause

This alarm becomes active when one of the following conditions exists:

- the generic framing procedure (GFP) layer cannot detect valid GFP frames
- in interoperable configurations, where the SONET/SDH system has a v-cat differential delay between v-cat groups that is greater than or equal to 14 ms

### Impact

Critical, service-affecting.

### Precautions



#### **CAUTION**

##### **Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-15 (continued)

**GFSRM—Loss of Frame Delineation**

**Action**

| Step | Action  |   |
|------|---|---|
| 1    | In the Connection—Channel Assignments window in System Manager, query the channel assignment for the OCI SRM and verify that the Bit rate and Transport structure are consistent at the near-end and the far-end.<br><b>Note:</b> The Transport field indicates the number of paths (STS-3c/VC-4) that have been provisioned. |   |
| 2    | <b>If</b><br>the channel assignments need to be modified<br><br>if the channel assignments do not need to be modified   | <b>Then</b><br>follow <a href="#">Procedure 3-3 “Making or modifying channel assignments”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step.<br><br>contact your next level of support  |
| 3    | <b>If</b><br>the alarm clears<br>the alarm remains  | <b>Then</b><br>you have completed this procedure<br>go to the next step   |
| 4    | <b>If</b> the topology is<br>bookended<br>interoperable   | <b>Then</b><br>go to <a href="#">step 6</a><br><br>traffic patterns of the v-cat groups in the SONET/SDH system must be changed so that the differential delay between v-cat groups is less than 14 ms. Follow the appropriate trouble clearing procedure for the SONET/SDH equipment. Go to next step. |
| 5    | <b>If</b><br>the alarm clears<br>the alarm remains  | <b>Then</b><br>you have completed this procedure<br>go to the next step   |
| 6    | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |   |
|      | <b>If</b><br>the alarm clears<br>the alarm remains  | <b>Then</b><br>you have completed this procedure<br>go to the next step   |

—continued—

---

Procedure 6-15 (continued)

**GFSRM—Loss of Frame Delineation**

---

| <b>Step</b>       | <b>Action</b>  |           |             |                  |   |                   |  |
|-------------------|--|-----------|-------------|------------------|---|-------------------|--|
| 7                 | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |           |             |                  |   |                   |  |
|                   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>the removed circuit pack has faults. You have completed this procedure.</td></tr><tr><td>the alarm remains</td><td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td></tr></tbody></table> | <b>If</b> | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| <b>If</b>         | <b>Then</b>  |           |             |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |           |             |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |           |             |                  |   |                   |  |

—end—

## Procedure 6-16 GFSRM—Loss of Pointer

---

### Probable cause

This alarm becomes active against the OCI SRM path under the following conditions:

- the near-end and far-end NEs are provisioned differently. For example, the local NE is provisioned as two STS-24c, but the remote NE is sending an STS-48c.
- the pointer value in the SONET overhead is out of a valid range
- the pointer value in the SONET overhead is not stable because of network synchronization
- the subtending equipment is defective

### Impact

Critical, service-affecting.

### Action

---

| Step                      | Action   |                           |                   |           |                        |               |                        |
|---------------------------|--|---------------------------|-------------------|-----------|------------------------|---------------|------------------------|
| 1                         | <table><tr><td><b>If</b> the topology is</td><td><b>Then</b> go to</td></tr><tr><td>bookended</td><td><a href="#">step 2</a></td></tr><tr><td>interoperable</td><td><a href="#">step 6</a></td></tr></table> | <b>If</b> the topology is | <b>Then</b> go to | bookended | <a href="#">step 2</a> | interoperable | <a href="#">step 6</a> |
| <b>If</b> the topology is | <b>Then</b> go to  |                           |                   |           |                        |               |                        |
| bookended                 | <a href="#">step 2</a>   |                           |                   |           |                        |               |                        |
| interoperable             | <a href="#">step 6</a>   |                           |                   |           |                        |               |                        |
| 2                         | In the Connection—Channel Assignments window in System Manager, query the channel assignment for the OCI SRM at the near-end shelf and note the transport structure specified in the Transport field.        |                           |                   |           |                        |               |                        |
| 3                         | Perform the same query for the OCI SRM at the far-end shelf and make sure the transport structure specified in the Transport field is the same as the one noted in <a href="#">step 2</a> .                  |                           |                   |           |                        |               |                        |

—continued—

---

 Procedure 6-16 (continued)  
**GFSRM—Loss of Pointer**


---

| Step      | Action  |  |
|-----------|---|--|
| <b>4</b>  | <b>If</b>   | <b>Then</b>  |
|           | the specified transport structure is different  | follow <a href="#">Procedure 3-3 "Making or modifying channel assignments"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310, and modify the Transport field so that the specified transport structures are the same.<br>Go to the next step. |
|           | otherwise   | contact your next level of support   |
| <b>5</b>  | <b>If</b>   | <b>Then</b>  |
|           | the alarm clears  | you have completed this procedure  |
|           | the alarm remains   | contact your next level of support   |
| <b>6</b>  | Make sure that the payload configuration is consistent between the OCI SRM and the first line terminating equipment (LTE) in the SONET/SDH network. |  |
| <b>7</b>  | <b>If</b>   | <b>Then</b>  |
|           | the payload configurations are inconsistent   | follow the SONET/SDH LTE equipment procedures to change the payload configuration.<br>Go to the next step.   |
|           | otherwise   | go to <a href="#">step 9</a>   |
| <b>8</b>  | <b>If</b>   | <b>Then</b>  |
|           | the alarm clears  | you have completed this procedure  |
|           | the alarm remains   | go to the next step  |
| <b>9</b>  | In the SONET/SDH network, make sure that there are no alarms related to synchronization.  |  |
| <b>10</b> | If the problem persists, contact your next level of support.  |  |

—end—

## Procedure 6-17 GFSRM—Loss of Synchronization

---

This alarm is raised on the client-side facility.

### Probable cause

This alarm becomes active when

- for Gigabit Ethernet, the OCI SRM GbE/FC or OCI SRM GbE is unable to establish 8B/10B code word synchronization
- for FC-100/FICON, the OCI SRM GbE/FC is unable to establish FC-100/FICON word synchronization
- there is an inconsistent bit rate provisioning between the client port of OCI SRM and the subtending equipment
- the optical fiber is the wrong type

### Impact

Critical, service-affecting.

### Precautions



#### **CAUTION**

##### **Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

### Action

---

| Step | Action |
|------|--------|
|------|--------|

---

- |   |  |
|---|--|
| 1 | In the Connection—Channel Assignments window in System Manager, query the channel assignment for the OCI SRM and make sure that the bit rate matches the bit rate of the subtending equipment. |
|---|--|

—continued—

Procedure 6-17 (continued)

**GFSRM—Loss of Synchronization**

| Step   | Action   |      |      |   |  |  |                               |
|--|--|------|------|---|--|--|-------------------------------|
| 2  | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the bit rate needs to be modified</td> <td>follow <a href="#">Procedure 3-3 "Making or modifying channel assignments"</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310. Go to the next step.</td> </tr> <tr> <td>the bit rates match</td> <td>go to <a href="#">step 4</a></td> </tr> </tbody> </table>   | If   | Then | the bit rate needs to be modified   | follow <a href="#">Procedure 3-3 "Making or modifying channel assignments"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step.  | the bit rates match  | go to <a href="#">step 4</a>  |
|  | If   | Then |      |   |  |  |                               |
| the bit rate needs to be modified  | follow <a href="#">Procedure 3-3 "Making or modifying channel assignments"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step.  |      |      |   |  |  |                               |
| the bit rates match  | go to <a href="#">step 4</a>   |      |      |   |  |  |                               |
| 3  | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If   | Then | the alarm clears  | you have completed this procedure  | the alarm remains  | go to the next step           |
|  | If   | Then |      |   |  |  |                               |
| the alarm clears   | you have completed this procedure  |      |      |   |  |  |                               |
| the alarm remains  | go to the next step  |      |      |   |  |  |                               |
| 4  | If connected to a pair of fiber channel devices that support the auto-negotiation (AN) of 1G and 2G link speeds, manually set the speed of the ports connected to the OCI SRM to 1G (FC-100).  |      |      |   |  |  |                               |
| 5  | Make sure the optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the OCI SRM and the subtending equipment.  |      |      |   |  |  |                               |
| 6  | Use an optical power meter to measure the transmit power level at the Rx port of the affected OCI SRM. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values.   |      |      |   |  |  |                               |
| <div style="border: 1px solid black; padding: 5px;">  <p><b>CAUTION</b><br/> <b>Risk of recovery procedures affecting traffic</b><br/>           Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI SRM, fiber, or system).</p> </div> |  |      |      |   |  |  |                               |
| 7  | Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal.  |      |      |   |  |  |                               |
| 8  | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>there is a VOA attached to the fiber between the OCI SRM and the subtending equipment</td> <td>re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br/><br/><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br/><br/>Go to the next step.</td> </tr> <tr> <td>there is no VOA attached to the fiber between the OCI SRM and the subtending equipment</td> <td>go to <a href="#">step 11</a></td> </tr> </tbody> </table> | If   | Then | there is a VOA attached to the fiber between the OCI SRM and the subtending equipment | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br><br>Go to the next step. | there is no VOA attached to the fiber between the OCI SRM and the subtending equipment | go to <a href="#">step 11</a> |
|  | If   | Then |      |   |  |  |                               |
| there is a VOA attached to the fiber between the OCI SRM and the subtending equipment  | re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br><br><b>Note:</b> Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another OCI, fiber, or system).<br><br>Go to the next step.   |      |      |   |  |  |                               |
| there is no VOA attached to the fiber between the OCI SRM and the subtending equipment   | go to <a href="#">step 11</a>  |      |      |   |  |  |                               |

—continued—

Procedure 6-17 (continued)

**GFSRM—Loss of Synchronization**

| Step | Action  |
|------|---|
| 9    | <b>If</b>   |
|      | <b>Then</b>   |
|      | the alarm clears                      you have completed this procedure   |
|      | the alarm remains                      go to the next step  |
| 10   | Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI SRM Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201. <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in <a href="#">step 6</a>, this will allow you to see if there is any improvement to the Rx power.</li> </ul> |
|      | <b>If</b>   |
|      | <b>Then</b>   |
|      | the alarm clears                      you have completed this procedure   |
|      | the alarm remains                      go to the next step  |
| 11   | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |
|      | <b>If</b>   |
|      | <b>Then</b>   |
|      | the alarm clears                      you have completed this procedure   |
|      | the alarm remains                      go to the next step  |
| 12   | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |
|      | <b>If</b>   |
|      | <b>Then</b>   |
|      | the alarm clears                      the removed circuit pack has faults. You have completed this procedure.   |
|      | the alarm remains                      contact your next level of support   |

—end—

---

## Procedure 6-18

# GFSRM—Loss of Timing Reference

---

This alarm is raised on the Tx aggregate facility.

### Probable cause

This alarm is raised under the following conditions:

- the backplane clock frequency deviates by more than 20 ppm from the local clock reference
- the timing reference is completely lost
- the hardware is trying to acquire the timing reference (acquire time is 100 sec)

### Impact

Major, non-service-affecting.

### Precautions



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-18 (continued)

**GFSRM—Loss of Timing Reference**

**Action**

| Step   | Action  |  |
|--|---|--|
| 1  | <b>If</b>   | <b>Then</b>  |
|  | the alarm is raised immediately after configuration<br>otherwise                      | wait 100 sec to see if the alarm clears.<br>Go to the next step.<br><br>go to <a href="#">step 3</a>   |
| <i>Note:</i> SONET clock frequency determination may take up to 100 sec. |   |  |
| 2  | <b>If</b>   | <b>Then</b>  |
|  | the alarm clears<br>the alarm remains   | you have completed the procedure<br>go to the next step  |
| 3  | <b>If</b> the topology is   | <b>Then</b> go to  |
|  | bookended<br>interoperable  | <a href="#">step 4</a><br><a href="#">step 10</a>  |
| 4  | Check the aggregate timing mode of both near-end and far-end OCI SRM circuit packs. . |  |
|  | <b>If</b>   | <b>Then</b>  |
|  | both are not in local timing mode   | set them both to local timing mode and wait 100 sec. See <a href="#">Procedure 3-21 "Changing the timing mode"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><br>Go to the next step. |
|  | otherwise   | go to <a href="#">step 6</a>   |
| 5  | <b>If</b>   | <b>Then</b>  |
|  | the alarm clears<br>the alarm remains   | you have completed the procedure<br>go to the next step  |

—continued—

Procedure 6-18 (continued)

**GFSRM—Loss of Timing Reference**

| <b>Step</b>       | <b>Action</b>  |
|-------------------|--|
| <b>6</b>          | Reseat the near-end OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Wait 5 minutes for the alarm to clear.       |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>7</b>          | Replace the near-end OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. Wait 5 minutes for the alarm to clear. |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | go to the next step  |
| <b>8</b>          | Reseat the far-end OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Wait 5 minutes for the alarm to clear.        |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | you have completed this procedure  |
| the alarm remains | go to the next step  |
| <b>9</b>          | Replace the far-end OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. Wait 5 minutes for the alarm to clear.  |
| <b>If</b>         | <b>Then</b>  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |
| the alarm remains | contact your next level of support   |

—continued—

Procedure 6-18 (continued)

**GFSRM—Loss of Timing Reference**

| Step  | Action   |      |      |   |   |                   |                                    |
|---|--|------|------|---|---|-------------------|------------------------------------|
| 10  | In an interop topology, this alarm indicates that the far-end LTE timing has drifted.  |      |      |   |   |                   |                                    |
|   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the aggregate timing mode of the OCI SRM is loop timing</td> <td>make sure that the far-end LTE is not deriving timing from the OCI SRM and wait 100 sec. Go to the next step.</td> </tr> <tr> <td>otherwise</td> <td>go to <a href="#">step 12</a></td> </tr> </tbody> </table> | If   | Then | the aggregate timing mode of the OCI SRM is loop timing | make sure that the far-end LTE is not deriving timing from the OCI SRM and wait 100 sec. Go to the next step. | otherwise         | go to <a href="#">step 12</a>      |
|   | If   | Then |      |   |   |                   |                                    |
| the aggregate timing mode of the OCI SRM is loop timing | make sure that the far-end LTE is not deriving timing from the OCI SRM and wait 100 sec. Go to the next step.  |      |      |   |   |                   |                                    |
| otherwise   | go to <a href="#">step 12</a>  |      |      |   |   |                   |                                    |
| 11  | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If   | Then | the alarm clears  | you have completed this procedure   | the alarm remains | go to the next step                |
| If  | Then   |      |      |   |   |                   |                                    |
| the alarm clears  | you have completed this procedure  |      |      |   |   |                   |                                    |
| the alarm remains                                       | go to the next step  |      |      |   |   |                   |                                    |
| 12  | Follow the appropriate procedures for clearing timing problems on the far-end LTE and wait 100 sec.  |      |      |   |   |                   |                                    |
|   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If   | Then | the alarm clears  | you have completed this procedure   | the alarm remains | go to the next step                |
|   | If   | Then |      |   |   |                   |                                    |
| the alarm clears  | you have completed this procedure  |      |      |   |   |                   |                                    |
| the alarm remains                                       | go to the next step  |      |      |   |   |                   |                                    |
| 13  | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 "Reseating a circuit pack"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Wait 5 minutes for the alarm to clear.  |      |      |   |   |                   |                                    |
|   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If   | Then | the alarm clears  | you have completed this procedure   | the alarm remains | go to the next step                |
| If  | Then   |      |      |   |   |                   |                                    |
| the alarm clears  | you have completed this procedure  |      |      |   |   |                   |                                    |
| the alarm remains                                       | go to the next step  |      |      |   |   |                   |                                    |
| 14  | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 "Replacing an OCI circuit pack"</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. Wait 5 minutes for the alarm to clear.  |      |      |   |   |                   |                                    |
|   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>contact your next level of support</td> </tr> </tbody> </table>   | If   | Then | the alarm clears  | the removed circuit pack has faults. You have completed this procedure.                                       | the alarm remains | contact your next level of support |
|   | If   | Then |      |   |   |                   |                                    |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |      |      |   |   |                   |                                    |
| the alarm remains                                       | contact your next level of support   |      |      |   |   |                   |                                    |
|   |  |      |      |   |   |                   |                                    |

—end—

## Procedure 6-19

# GFSRM—Manual Switch to (West) or (East) Path active

### Probable cause

The Manual Switch to West Path alarm becomes active when the user requests that the signal on a protected revertive path be switched to the west path.

The Manual Switch to East Path alarm becomes active when the user requests that the signal on a protected revertive path be switched to the east path.

This alarm is a normal indication if a Manual Switch has been requested for testing or maintenance purposes.

### Impact

Warning, non-service-affecting.

### Action

| Step  | Action   |                         |             |   |                                   |                   |                                    |
|---|--|-------------------------|-------------|---|-----------------------------------|-------------------|------------------------------------|
| 1   | Determine if the manual switch is active for testing or maintenance purposes.  |                         |             |   |                                   |                   |                                    |
| 2   | <table border="0"> <tr> <td><b>If</b> the manual is</td> <td><b>Then</b></td> </tr> <tr> <td>necessary for testing or maintenance activities</td> <td>you have completed this procedure</td> </tr> <tr> <td>not necessary</td> <td>go to the next step</td> </tr> </table> | <b>If</b> the manual is | <b>Then</b> | necessary for testing or maintenance activities | you have completed this procedure | not necessary     | go to the next step                |
| <b>If</b> the manual is                         | <b>Then</b>  |                         |             |   |                                   |                   |                                    |
| necessary for testing or maintenance activities | you have completed this procedure  |                         |             |   |                                   |                   |                                    |
| not necessary                                   | go to the next step  |                         |             |   |                                   |                   |                                    |
| 3   | Release the Manual switch if it is not necessary. Follow <a href="#">Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |                         |             |   |                                   |                   |                                    |
|   | <table border="0"> <tr> <td><b>If</b></td> <td><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>contact your next level of support</td> </tr> </table>                           | <b>If</b>               | <b>Then</b> | the alarm clears                                | you have completed this procedure | the alarm remains | contact your next level of support |
| <b>If</b>                                       | <b>Then</b>  |                         |             |   |                                   |                   |                                    |
| the alarm clears                                | you have completed this procedure  |                         |             |   |                                   |                   |                                    |
| the alarm remains                               | contact your next level of support   |                         |             |   |                                   |                   |                                    |

—end—

## Procedure 6-20 GFSRM—Path Lockout active

---

### Probable cause

This alarm becomes active when you perform a lockout on the active path.

This alarm is a normal indication if a path lockout has been set for testing or maintenance purposes.

### Impact

Minor, non-service-affecting.

### Action

---

| Step  | Action   |                        |      |   |                                   |                   |                                    |
|---|--|------------------------|------|---|-----------------------------------|-------------------|------------------------------------|
| 1   | Determine if the path lockout is set for testing or maintenance purposes.  |                        |      |   |                                   |                   |                                    |
| 2   | <table><thead><tr><th>If the path lockout is</th><th>Then</th></tr></thead><tbody><tr><td>necessary for testing or maintenance activities</td><td>you have completed this procedure</td></tr><tr><td>not necessary</td><td>go to the next step</td></tr></tbody></table> | If the path lockout is | Then | necessary for testing or maintenance activities | you have completed this procedure | not necessary     | go to the next step                |
| If the path lockout is                          | Then   |                        |      |   |                                   |                   |                                    |
| necessary for testing or maintenance activities | you have completed this procedure  |                        |      |   |                                   |                   |                                    |
| not necessary                                   | go to the next step  |                        |      |   |                                   |                   |                                    |
| 3   | Release the path Lockout switch if it is not necessary. Follow <a href="#">Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.                                       |                        |      |   |                                   |                   |                                    |
|   | <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>contact your next level of support</td></tr></tbody></table>                                 | If                     | Then | the alarm clears                                | you have completed this procedure | the alarm remains | contact your next level of support |
| If  | Then   |                        |      |   |                                   |                   |                                    |
| the alarm clears                                | you have completed this procedure  |                        |      |   |                                   |                   |                                    |
| the alarm remains                               | contact your next level of support   |                        |      |   |                                   |                   |                                    |

---

—end—

## Procedure 6-21

# GFSRM—Payload Label Mismatch

This alarm is raised against the OCI SRM GbE/FC or OCI SRM GbE path.

### Probable cause

This alarm becomes active when the signal label of a received STS-nc/VC-n, does not match the expected signal label.

This alarm is only raised in interoperable topologies.

### Impact

Critical, service-affecting.

### Precautions



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

### Action

| Step | Action   |
|------|--|
| 1    | Trace the STS-nc/VC-n that is reporting the alarm in the SONET/SDH system. |

—continued—

6-60 Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

---

Procedure 6-21 (continued)

**GFSRM—Payload Label Mismatch**

---

| <b>Step</b> | <b>Action</b>  |
|-------------|--|
| <b>2</b>    | Confirm that the payload label is provisioned as required.<br><b>If</b> the payload label is provisioned as required <b>Then</b> go to <a href="#">step 4</a><br>is not provisioned as required provision the payload label as required and go to the next step  |
| <b>3</b>    | <b>If</b> the alarm clears <b>Then</b> you have completed this procedure<br>the alarm remains go to the next step  |
| <b>4</b>    | In the SONET system, verify that all cross-connects are applied properly and make any necessary changes.<br><b>If</b> the alarm clears <b>Then</b> you have completed this procedure<br>the alarm remains go to the next step  |
| <b>5</b>    | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 "Reseating a circuit pack"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><b>If</b> the alarm clears <b>Then</b> you have completed this procedure<br>the alarm remains go to the next step  |
| <b>6</b>    | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 "Replacing an OCI circuit pack"</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.<br><b>If</b> the alarm clears <b>Then</b> the removed circuit pack has faults. You have completed this procedure.<br>the alarm remains contact your next level of support |

—end—

---

## Procedure 6-22

# GFSRM—Performance Monitoring Timer Failed

---

### Probable cause

This alarm becomes active when the OCI SRM GbE/FC or OCI SRM GbE circuit pack is not detecting performance monitoring data from the SP circuit pack.

### Impact

Major, non-service-affecting.

### Precautions

#### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf. The System Manager shows database-carrying circuit packs in bold text. You can also use the Optical Metro Inventory dialog box to locate the standby database.



#### CAUTION

##### Recovery procedures can affect traffic

This condition is not service-affecting, however the recovery action can be service-affecting if the traffic to the OCI SRM GbE/FC is not protected externally.



#### CAUTION

##### Risk of recovery procedures affecting traffic

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-22 (continued)

**GFSRM—Performance Monitoring Timer Failed**

**Action**

| Step   | Action  |           |                   |   |   |  |   |
|--|---|-----------|-------------------|---|---|--|---|
| 1  | <p>Using the Fault—Active Alarms window in System Manger, check to see if the Performance Monitoring Timer Failed alarm is raised by more than one circuit pack in the shelf.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then go to</b></td> </tr> <tr> <td>the alarm is raised by only this circuit pack</td> <td>the next step</td> </tr> <tr> <td>the alarm is raised on multiple circuit packs (except OCMs and OSCs)</td> <td><a href="#">step 4</a></td> </tr> </table>   | <b>If</b> | <b>Then go to</b> | the alarm is raised by only this circuit pack | the next step   | the alarm is raised on multiple circuit packs (except OCMs and OSCs) | <a href="#">step 4</a>  |
| <b>If</b>  | <b>Then go to</b>   |           |                   |   |   |  |   |
| the alarm is raised by only this circuit pack                        | the next step   |           |                   |   |   |  |   |
| the alarm is raised on multiple circuit packs (except OCMs and OSCs) | <a href="#">step 4</a>  |           |                   |   |   |  |   |
| 2  | <p>Reseat the OCI SRM GbE/FC. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>  | <b>If</b> | <b>Then</b>       | the alarm clears                              | you have completed this procedure                                       | the alarm remains  | go to the next step   |
| <b>If</b>  | <b>Then</b>   |           |                   |   |   |  |   |
| the alarm clears   | you have completed this procedure   |           |                   |   |   |  |   |
| the alarm remains  | go to the next step   |           |                   |   |   |  |   |
| 3  | <p>Replace the OCI SRM GbE/FC. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Go to <a href="#">step 4</a>.</td> </tr> </table> | <b>If</b> | <b>Then</b>       | the alarm clears                              | the removed circuit pack has faults. You have completed this procedure. | the alarm remains  | the circuit pack is not the problem. Reseat the original circuit pack. Go to <a href="#">step 4</a> . |
| <b>If</b>  | <b>Then</b>   |           |                   |   |   |  |   |
| the alarm clears   | the removed circuit pack has faults. You have completed this procedure.   |           |                   |   |   |  |   |
| the alarm remains  | the circuit pack is not the problem. Reseat the original circuit pack. Go to <a href="#">step 4</a> .   |           |                   |   |   |  |   |

—continued—

Procedure 6-22 (continued)

**GFSRM—Performance Monitoring Timer Failed**

| <b>Step</b>       | <b>Action</b>  |           |             |                  |   |                   |  |
|-------------------|--|-----------|-------------|------------------|---|-------------------|--|
| <b>4</b>          | Reseat the SP. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |           |             |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step  |
| <b>If</b>         | <b>Then</b>  |           |             |                  |   |                   |  |
| the alarm clears  | you have completed this procedure  |           |             |                  |   |                   |  |
| the alarm remains | go to the next step  |           |             |                  |   |                   |  |
| <b>5</b>          | Replace the SP. Follow <a href="#">Procedure 3-13 “Replacing an SP circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |           |             |                  |   |                   |  |
|                   | <table border="1"> <thead> <tr> <th><b>If</b></th> <th><b>Then</b></th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table> | <b>If</b> | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| <b>If</b>         | <b>Then</b>  |           |             |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |           |             |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |           |             |                  |   |                   |  |

—end—

## Procedure 6-23 GFSRM—Remote Defect Indication

---

This alarm is raised against the OCI SRM GbE/FC or OCI SRM GbE path.

### Probable cause

This alarm becomes active when there is an error at the far-end NE, such as a Path AIS or LOP alarm is received or a failure has occurred.

### Impact

Warning, non-service-affecting.

### Precautions



#### **CAUTION**

##### **Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-23 (continued)

**GFSRM—Remote Defect Indication****Action**

| <b>Step</b> | <b>Action</b>  |
|-------------|--|
| <b>1</b>    | In the Active Alarms window, determine if path Alarm Indication Signal alarms are present on the far-end NEs.<br><b>If</b> this alarms is <b>Then</b> go to<br>present <a href="#">step 2</a><br>not present <a href="#">step 3</a>  |
| <b>2</b>    | Clear the Alarm Indication Signal alarms. Follow <a href="#">Procedure 6-1 “GFSRM—Path Alarm Indication Signal(s)”</a> in this chapter.<br><b>If</b> the Remote Defect Indication alarm <b>Then</b><br>clears you have completed this procedure<br>remains go to the next step |
| <b>3</b>    | In the Active Alarms window, determine if Loss of Pointer alarms are present on the far-end NEs.<br><b>If</b> this alarms is <b>Then</b> go to<br>present <a href="#">step 4</a><br>not present <a href="#">step 5</a>   |
| <b>4</b>    | Clear the Loss of Pointer alarms. Follow <a href="#">Procedure 6-16 “GFSRM—Loss of Pointer”</a> in this chapter.<br><b>If</b> the Remote Defect Indication alarm <b>Then</b><br>clears you have completed this procedure<br>remains go to the next step                        |
| <b>5</b>    | <b>If</b> the topology used is <b>Then</b><br>bookended contact your next level of support<br>interoperable go to the next step  |
| <b>6</b>    | Make sure that all path circuits are correctly cross-connected.<br><b>If</b> the alarm <b>Then</b><br>clears you have completed this procedure<br>remains contact your next level of support   |

—end—

## Procedure 6-24

### GFSRM—Rx Loss of Signal

#### Probable cause

This alarm becomes active when the OCI SRM GbE/FC or OCI SRM GbE circuit pack is not detecting an input signal. One of the following conditions exists:

- an optical fiber is cut
- the received optical power is below the accepted threshold
- incorrect bit rate
- an optical fiber is bent or coiled too tightly
- no optical signal is present at the OCI SRM circuit pack
- the connector is dirty at the receiving OCI SRM circuit pack or at the launching circuit pack
- an optical patch cord is damaged
- the receiving OCI SRM circuit pack is defective
- the transmitting subtending equipment is defective
- the optical fiber is the wrong type
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly

#### Impact

[Table 6-6](#) lists the impact that this alarm has under different conditions.

**Table 6-6**  
**Rx Loss of Signal alarm impact**

| Alarm             | Conditions  | Severity | Impact                |
|-------------------|---|----------|-----------------------|
| Rx Loss of Signal | If there are channel assignments on the circuit pack, and the circuit pack is in-service. | Critical | Service-affecting     |
|                   | If there are no channel assignments on the circuit pack.                                  | Major    | Non-service-affecting |

—continued—

Procedure 6-24 (continued)  
**GFSRM—Rx Loss of Signal**

**Precautions**



**CAUTION**  
**Risk of recovery procedures affecting traffic**  
 This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI SRM is not protected externally.



**CAUTION**  
**Risk of affecting network reliability**  
 Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**Action**

| Step                                    | Action   |             |      |                                     |                              |   |                              |
|---|--|-------------|------|-------------------------------------|------------------------------|---|------------------------------|
| 1                                       | Make sure that the optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the OCI SRM and the subtending equipment.   |             |      |                                     |                              |   |                              |
| 2                                       | Use an optical power meter to measure the optical power at the Rx port of the affected OCI SRM. Check if the Rx power level is within the operational threshold. Write down the value. Refer to <a href="#">Table 2-2</a> in <i>Technical Specifications</i> , 323-1701-180 for the correct values.  |             |      |                                     |                              |   |                              |
|   | <div style="border: 1px solid black; padding: 10px;">  <p><b>CAUTION</b><br/> <b>Risk of recovery procedures affecting traffic</b><br/>                     Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another OCI SRM, fiber, or system).</p> </div>  |             |      |                                     |                              |   |                              |
| 3                                       | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If Rx power</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">is within the operational threshold</td> <td style="border-bottom: 1px solid black;">go to <a href="#">step 4</a></td> </tr> <tr> <td>is not within the operational threshold</td> <td>go to <a href="#">step 7</a></td> </tr> </tbody> </table> | If Rx power | Then | is within the operational threshold | go to <a href="#">step 4</a> | is not within the operational threshold | go to <a href="#">step 7</a> |
| If Rx power                             | Then   |             |      |                                     |                              |   |                              |
| is within the operational threshold     | go to <a href="#">step 4</a>   |             |      |                                     |                              |   |                              |
| is not within the operational threshold | go to <a href="#">step 7</a>   |             |      |                                     |                              |   |                              |
| 4                                       | Make sure that the transmitting subtending equipment is functioning correctly and transmitting a valid signal.   |             |      |                                     |                              |   |                              |

—continued—

**6-68** Clearing OCI SRM GbE/FC and OCI SRM GbE alarms

---

Procedure 6-24 (continued)

**GFSRM—Rx Loss of Signal**

---

| <b>Step</b> | <b>Action</b>  |   |
|-------------|--|---|
| <b>5</b>    | <b>If</b> the transmitting subtending equipment<br>is functioning correctly and transmitting a valid signal<br>is not functioning correctly and not transmitting a valid signal      | <b>Then</b><br>go to <a href="#">step 7</a><br>fix the trouble at the subtending equipment, and go to the next step.                                  |
| <b>6</b>    | <b>If</b><br>the alarm clears<br>the alarm remains   | <b>Then</b><br>you have completed this procedure<br>go to <a href="#">step 7</a>  |
| <b>7</b>    | <b>If</b><br>there is a VOA attached to the fiber between the OCI and the subtending equipment<br>there is no VOA attached to the fiber between the OCI and the subtending equipment | <b>Then</b><br>re-adjust, check for proper functionality, and, if necessary, replace the VOA.<br>Go to the next step.<br>go to <a href="#">step 9</a> |
| <b>8</b>    | <b>If</b><br>the alarm clears<br>the alarm remains   | <b>Then</b><br>you have completed this procedure<br>go to the next step   |

—continued—

Procedure 6-24 (continued)  
**GFSRM—Rx Loss of Signal**

| Step              | Action  |    |      |                  |   |                   |                                    |
|-------------------|---|----|------|------------------|---|-------------------|------------------------------------|
| 9                 | <p>Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the OCI SRM Rx port. For information on cleaning, see <a href="#">“Cleaning connectors”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> <ul style="list-style-type: none"> <li>— Clean each connector separately.</li> <li>— Record the operating power level after you clean each connector and compare it to the value you wrote down in <a href="#">step 2</a>, this will allow you to see if there is any improvement to the Rx power.</li> </ul> |    |      |                  |   |                   |                                    |
|                   | <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step                |
| If                | Then  |    |      |                  |   |                   |                                    |
| the alarm clears  | you have completed this procedure   |    |      |                  |   |                   |                                    |
| the alarm remains | go to the next step   |    |      |                  |   |                   |                                    |
| 10                | <p>Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p>  |    |      |                  |   |                   |                                    |
|                   | <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step                |
| If                | Then  |    |      |                  |   |                   |                                    |
| the alarm clears  | you have completed this procedure   |    |      |                  |   |                   |                                    |
| the alarm remains | go to the next step   |    |      |                  |   |                   |                                    |
| 11                | <p>Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p>  |    |      |                  |   |                   |                                    |
|                   | <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>contact your next level of support</td> </tr> </tbody> </table>   | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | contact your next level of support |
| If                | Then  |    |      |                  |   |                   |                                    |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |    |      |                  |   |                   |                                    |
| the alarm remains | contact your next level of support  |    |      |                  |   |                   |                                    |

—end—

## Procedure 6-25 GFSRM—Terminal Loopback

---

A Terminal Loopback alarm means the signal being received at the backplane receiver is being looped back to the backplane transmitter without continuing through the circuit pack.

### Probable cause

This alarm becomes active against the aggregate facility of the OCI SRM GbE/FC or OCI SRM GbE circuit pack when the aggregate facility has been placed in terminal loopback mode.

*Note:* This is a normal indication when the loopback is on for testing purposes. Loopback is only allowed when the facility is out-of-service.

### Impact

Minor, non-service-affecting.

### Action

| Step  | Action   |           |             |   |                                   |                   |                                    |
|---|--|-----------|-------------|---|-----------------------------------|-------------------|------------------------------------|
| 1   | Determine if the terminal loopback is active for testing or maintenance purposes.  |           |             |   |                                   |                   |                                    |
| 2   | <table border="0"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the loopback is necessary for testing or maintenance activities</td> <td>you have completed this procedure</td> </tr> <tr> <td>otherwise</td> <td>go to the next step</td> </tr> </table> | <b>If</b> | <b>Then</b> | the loopback is necessary for testing or maintenance activities | you have completed this procedure | otherwise         | go to the next step                |
| <b>If</b>   | <b>Then</b>  |           |             |   |                                   |                   |                                    |
| the loopback is necessary for testing or maintenance activities | you have completed this procedure  |           |             |   |                                   |                   |                                    |
| otherwise   | go to the next step  |           |             |   |                                   |                   |                                    |
| 3   | Release the loopback if it is not necessary.   |           |             |   |                                   |                   |                                    |
| 4   | In the System Manager, select the Equipment–Facilities window and double-click the aggregate facility associated with this slot.<br><i>The Optical Metro Facility dialog box appears.</i>  |           |             |   |                                   |                   |                                    |
| 5   | In the Loopback area, select the None radio button.  |           |             |   |                                   |                   |                                    |
| 6   | Click <b>Apply</b> .   |           |             |   |                                   |                   |                                    |
| 7   | Click <b>OK</b> .  |           |             |   |                                   |                   |                                    |
| 8   | <table border="0"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>contact your next level of support</td> </tr> </table>                         | <b>If</b> | <b>Then</b> | the alarm clears  | you have completed this procedure | the alarm remains | contact your next level of support |
| <b>If</b>   | <b>Then</b>  |           |             |   |                                   |                   |                                    |
| the alarm clears  | you have completed this procedure  |           |             |   |                                   |                   |                                    |
| the alarm remains   | contact your next level of support   |           |             |   |                                   |                   |                                    |

—end—

---

## Procedure 6-26

# GFSRM—Unequipped

---

This alarm is raised against the OCI SRM GbE/FC or OCI SRM GbE path.

### Probable cause

This alarm becomes active when there is an incomplete connection. For example, this alarm becomes active when there are no provisioned channel assignments at the remote site, or no provisioned cross-connects in the SONET/SDH network if the OCI SRM GbE/FC or OCI SRM GbE is part of an interoperable topology.

### Impact

Major, non-service-affecting.

### Precautions



#### **CAUTION**

##### **Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-26 (continued)  
**GFSRM—Unequipped**

**Action**

| Step | Action  |  |
|------|---|--|
| 1    | Use the System Manager to verify that there is a channel assignment configured for the corresponding far-end OCI SRM GbE/FC port.   |  |
|      | <b>If</b>   | <b>Then</b>  |
|      | there is no channel assignment  | follow <a href="#">Procedure 3-3 “Making or modifying channel assignments”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step.            |
|      | there is a channel assignment   | go to step <a href="#">3</a>   |
| 2    | <b>If</b>   | <b>Then</b>  |
|      | the alarm clears  | you completed this procedure   |
|      | the alarm remains   | go the next step   |
| 3    | Make sure that all corresponding OCI SRM GbE/FC facilities are in-service.  |  |
|      | <b>If</b>   | <b>Then</b>  |
|      | the facilities are out-of-service   | follow <a href="#">Procedure 3-10 “Putting a circuit pack or SFP facility in-service”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. |
|      | otherwise   | go the next step   |
| 4    | <b>If</b>   | <b>Then</b>  |
|      | the alarm clears  | you completed this procedure   |
|      | the alarm remains   | go the next step   |
| 5    | Delete and then reprovision the channel assignments. Follow the procedures in the <a href="#">“Managing security and user accounts”</a> chapter in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |  |
|      | <b>If</b>   | <b>Then</b>  |
|      | the alarm clears  | you completed this procedure   |
|      | the alarm remains   | go to the next step  |

—continued—

Procedure 6-26 (continued)

**GFSRM—Unequipped**

| Step | Action   |  |
|------|--|--|
| 6    | <b>If</b> the topology is<br>bookended<br>interoperable  | <b>Then</b> go to<br><a href="#">step 9</a><br>the next step   |
| 7    | If the OCI SRM circuit packs are part of a SONET/SDH interoperable topology, make sure that all the cross-connects are present in the SONET/SDH network.<br><br><b>Note:</b> The removal of cross-connects in the SONET/SDH network can send unequipped conditioning in to the Optical Metro 5100/5200 system. |  |
| 8    | <b>If</b><br>the alarm clears<br>the alarm remains   | <b>Then</b><br>you have completed this procedure<br>go to the next step  |
| 9    | Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 "Reseating a circuit pack"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><br><b>If</b>  |  |
|      | the alarm clears<br>the alarm remains  | <b>Then</b><br>you have completed this procedure<br>go to the next step  |
| 10   | Replace the OCI SRM. Follow <a href="#">Procedure 3-1 "Replacing an OCI circuit pack"</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.<br><br><b>If</b>  |  |
|      | the alarm clears<br>the alarm remains  | <b>Then</b><br>the removed circuit pack has faults. You have completed this procedure.<br>contact your next level of support |

—end—

## Procedure 6-27

# GFSRM—Unknown Circuit Pack

---

### Probable cause

This alarm becomes active when

- the SP circuit pack fails to retrieve the manufacturing data on the circuit pack (data may be missing or may be incorrect)
- the circuit pack type cannot be recognized by the software (the Release version of the circuit pack is not supported by the Release version of the shelf)

If the slot is provisioned for an OCI SRM GbE/FC or OCI SRM GbE, the System Manager displays GFSRM in the Card column of the Fault–Active Alarms window.

### Impact

Major, non-service-affecting.

—continued—

Procedure 6-27 (continued)  
GFSRM—Unknown Circuit Pack

## Precautions



### CAUTION

#### Risk of recovery procedures affecting traffic

This alarm may not be service-affecting, however the recovery action can be service-affecting if the traffic to the OCI SRM is not protected externally.

### ATTENTION

When you clear this alarm on Optical Metro 5100 shelves, at all times the SP, and at least one non-SP circuit pack that is carrying the database, must be seated in the shelf.



### CAUTION

#### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 6-27 (continued)  
**GFSRM—Unknown Circuit Pack**

**Action**

| Step                       | Action  |                            |             |                  |   |                   |   |
|----------------------------|---|----------------------------|-------------|------------------|---|-------------------|---|
| 1                          | <p>Read the latest Baseline Report to see if the circuit pack is compatible with the Release version of the shelf.</p> <p><b>Note:</b> Baseline Reports are available through Nortel Networks. Refer to the <a href="#">“Technical assistance service telephone numbers”</a> section in <a href="#">“About this document”</a> at the beginning of this book.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b> the circuit pack</td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>is compatible</td> <td>go to <a href="#">step 3</a></td> </tr> <tr> <td>is incompatible</td> <td>replace it with a compatible circuit pack. Follow procedures in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201 (or <i>Installing Optical Metro 5100 Shelves and Components</i>, 323-1701-210), and <i>Provisioning and Operating Procedures</i>, 323-1701-310. Go to the next step.</td> </tr> </table> | <b>If</b> the circuit pack | <b>Then</b> | is compatible    | go to <a href="#">step 3</a>  | is incompatible   | replace it with a compatible circuit pack. Follow procedures in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201 (or <i>Installing Optical Metro 5100 Shelves and Components</i> , 323-1701-210), and <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. |
| <b>If</b> the circuit pack | <b>Then</b>   |                            |             |                  |   |                   |   |
| is compatible              | go to <a href="#">step 3</a>  |                            |             |                  |   |                   |   |
| is incompatible            | replace it with a compatible circuit pack. Follow procedures in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201 (or <i>Installing Optical Metro 5100 Shelves and Components</i> , 323-1701-210), and <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step.   |                            |             |                  |   |                   |   |
| 2                          | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>  | <b>If</b>                  | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step   |
| <b>If</b>                  | <b>Then</b>   |                            |             |                  |   |                   |   |
| the alarm clears           | you have completed this procedure   |                            |             |                  |   |                   |   |
| the alarm remains          | go to the next step   |                            |             |                  |   |                   |   |
| 3                          | <p>Reseat the OCI SRM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>   | <b>If</b>                  | <b>Then</b> | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step   |
| <b>If</b>                  | <b>Then</b>   |                            |             |                  |   |                   |   |
| the alarm clears           | you have completed this procedure   |                            |             |                  |   |                   |   |
| the alarm remains          | go to the next step   |                            |             |                  |   |                   |   |
| 4                          | <p>Replace the OCI SRM. Follow <a href="#">Procedure 3-1 “Replacing an OCI circuit pack”</a> in <i>Maintenance and Replacement Procedures</i>, 323-1701-546.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </table>  | <b>If</b>                  | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |
| <b>If</b>                  | <b>Then</b>   |                            |             |                  |   |                   |   |
| the alarm clears           | the removed circuit pack has faults. You have completed this procedure.   |                            |             |                  |   |                   |   |
| the alarm remains          | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |                            |             |                  |   |                   |   |

—end—

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## Clearing OCM alarms

---

Use the procedures in this chapter to clear OCM alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, Contact your next level of technical support.

For a list of OCM circuit pack types, see the “[OCM circuit packs](#)” section in *Hardware Description*, 323-1701-102.

[Table 7-1](#) lists the meaning of the indicator lamps on OCM circuit packs.

**Table 7-1**  
**OCM circuit pack indicator lamps**

| Indicator lamp   | Color     | State    | Meaning   |
|--|-----------|----------|---|
| ACTIVE   | green     | on       | The circuit pack is active.   |
|  |           | off      | The circuit pack is inactive.   |
| STATUS   | green/red | green    | The circuit pack is functioning and the inventory in-service.   |
|  |           | red      | The circuit pack has failed.  |
|  |           | off      | The circuit pack is functioning and the inventory is out-of-service.  |
|  |           | flashing | The circuit pack is the active database-carrying circuit pack during a database copy operation.<br>(See <a href="#">Note</a> .) |
| <b>Note:</b> Do not remove the active database-carrying circuit pack during the database copy to the standby circuit pack. |           |          |   |

### Before you begin

Read “[Troubleshooting the Optical Metro 5100/5200](#)” chapter in this book for detailed information on how to respond to alarm indicators (audible alarms and lamps). The “[Alarm description](#)” chapter in this book explains events, warnings and error messages.

## Requirements



### CAUTION

#### Risk of electrostatic discharge

Observe all antistatic precautions when handling the circuit packs.

Exposed circuit packs can be damaged by electrostatic discharge. When handling circuit packs always wear a wrist strap that is grounded to the shelf maintenance panel, and shoe straps if necessary. For more information, refer to the “Handling circuit packs” section of [“Isolating faults that do not generate alarms”](#) in this book.



### CAUTION

#### Risk of laser radiation

The Optical Metro 5100/5200 operates up to a Hazard Level of  $k \times 3A$  (IEC 60825-2:2000) or 1M (IEC 60825-2:2004). Use only viewing instruments with proper optical attenuation.



### CAUTION

#### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter [“Cleaning connectors”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

## Procedure list

[Table 7-2](#) lists the procedures in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

**Table 7-2**  
Procedures for clearing OCM alarms

| Procedure   | Page                 | Alarm is masked if equipment or facility is OOS |
|---|----------------------|---|
| <a href="#">7-1 OCM—Backplane Loss of Activity</a>              | <a href="#">7-4</a>  | Equipment                                       |
| <a href="#">7-2 OCM—Circuit Pack Failed</a>                     | <a href="#">7-7</a>  | Equipment                                       |
| <a href="#">7-3 OCM—Circuit Pack Mismatch</a>                   | <a href="#">7-9</a>  | Equipment                                       |
| <a href="#">7-4 OCM—Circuit Pack Missing</a>                    | <a href="#">7-12</a> | Equipment                                       |
| <a href="#">7-5 OCM—Forced Switch to OCM (9) or (10) Active</a> | <a href="#">7-14</a> | Not applicable                                  |

**Table 7-2 (continued)**  
**Procedures for clearing OCM alarms**

| <b>Procedure</b>   | <b>Page</b>          | <b>Alarm is masked if equipment or facility is OOS</b> |
|--|----------------------|--|
| <a href="#">7-6 OCM—Inter-card Communication Failure</a> | <a href="#">7-15</a> | Equipment  |
| <a href="#">7-7 OCM—OCM Pair Mismatch</a>                | <a href="#">7-19</a> | Equipment  |
| <a href="#">7-8 OCM—Protection Not Available</a>         | <a href="#">7-20</a> | Equipment  |
| <a href="#">7-9 OCM—Unknown Circuit Pack</a>             | <a href="#">7-21</a> | Equipment  |

## Procedure 7-1 OCM—Backplane Loss of Activity

### Probable cause

This alarm becomes active when the OCM circuit pack does not detect any activity from the circuit pack in the specified slot (1–8, or 11–18).

**Note:** The slot number of the circuit pack from which there is no activity is shown in the Port column on the Active Alarms window in System Manager.

### Impact

Table 7-3 lists the impact that this alarm has under different conditions.

**Table 7-3**  
OCM Backplane Loss of Activity alarm impact

| Alarm                      | Conditions  | Severity | Impact                |
|----------------------------|---|----------|-----------------------|
| Backplane Loss of Activity | If the other OCM circuit pack has an alarm for the same slot.           | Critical | Service-affecting     |
|                            | If the other OCM circuit pack does not have an alarm for the same slot. | Minor    | Non-service-affecting |

### Precautions



#### CAUTION

##### Risk of recovery procedures affecting traffic

The recovery actions for clearing this alarm can be service-affecting.



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

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 Procedure 7-1 (continued)  
**OCM—Backplane Loss of Activity**


---

**Action**

| Step                                       | Action  |                               |                   |  |   |  |   |
|--|---|-------------------------------|-------------------|--|---|--|---|
| 1  | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b> the alarm is raised</td> <td style="vertical-align: top;"><b>Then</b> go to</td> </tr> <tr> <td>by both OCMs against a single circuit pack</td> <td>step 5</td> </tr> <tr> <td>by a single OCM against a circuit pack</td> <td>the next step</td> </tr> </table>   | <b>If</b> the alarm is raised | <b>Then</b> go to | by both OCMs against a single circuit pack | step 5  | by a single OCM against a circuit pack | the next step   |
| <b>If</b> the alarm is raised              | <b>Then</b> go to   |                               |                   |  |   |  |   |
| by both OCMs against a single circuit pack | step 5  |                               |                   |  |   |  |   |
| by a single OCM against a circuit pack     | the next step   |                               |                   |  |   |  |   |
| 2  | Manually switch traffic to the other OCM. Follow <a href="#">Procedure 3-57 “Manual switching on OCM circuit packs”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |                               |                   |  |   |  |   |
| 3  | Reseat the OCM indicated by the alarm. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |                               |                   |  |   |  |   |
|  | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>   | <b>If</b>                     | <b>Then</b>       | the alarm clears                           | you have completed this procedure                                       | the alarm remains                      | go to the next step   |
| <b>If</b>                                  | <b>Then</b>   |                               |                   |  |   |  |   |
| the alarm clears                           | you have completed this procedure   |                               |                   |  |   |  |   |
| the alarm remains                          | go to the next step   |                               |                   |  |   |  |   |
| 4  | Replace the OCM indicated by the alarm. Refer to <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |                               |                   |  |   |  |   |
|  | <table border="0"> <tr> <td style="vertical-align: top;"><b>If</b></td> <td style="vertical-align: top;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.</td> </tr> </table> | <b>If</b>                     | <b>Then</b>       | the alarm clears                           | the removed circuit pack has faults. You have completed this procedure. | the alarm remains                      | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step. |
| <b>If</b>                                  | <b>Then</b>   |                               |                   |  |   |  |   |
| the alarm clears                           | the removed circuit pack has faults. You have completed this procedure.   |                               |                   |  |   |  |   |
| the alarm remains                          | the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.   |                               |                   |  |   |  |   |

—continued—

## 7-6 Clearing OCM alarms

Procedure 7-1 (continued)

### OCM—Backplane Loss of Activity

| Step | Action   |   |
|------|--|---|
| 5    | <b>If</b><br>the implicated circuit pack is an OCI   | <b>Then</b><br>you will take a traffic hit. If necessary, switch traffic to an alternate fiber or system. Go to step 7.   |
|      | if the implicated circuit pack is an OCLD  | go to the next step   |
| 6    | <b>If</b><br>the path is protected   | <b>Then</b><br>switch traffic off of the OCLD. Follow <a href="#">Procedure 3-48 “Forcing traffic to one path on a protected channel”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |
|      | the path is unprotected  | go to the next step. Performing the next step may affect traffic.   |
| 7    | Reseat the implicated circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. |   |
|      | <b>If</b><br>the alarm clears  | <b>Then</b><br>you have completed this procedure  |
|      | the alarm remains  | go to the next step   |
| 8    | <b>If</b><br>the alarm clears  | <b>Then</b><br>the removed circuit pack has faults. You have completed this procedure.  |
|      | the alarm remains  | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.  |

#### ATTENTION

If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow [Procedure 3-49 “Removing a manual, force, or lockout switch from a protection path”](#) in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

---

## Procedure 7-2 OCM—Circuit Pack Failed

---

### Probable cause

This alarm becomes active when the circuit pack detects an equipment failure.

### Impact

Major, non-service-affecting.

### Precautions



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

### Action

---

| Step              | Action  |    |      |                  |                                   |                   |                     |
|-------------------|---|----|------|------------------|-----------------------------------|-------------------|---------------------|
| 1                 | Reseat the OCM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                  |                                   |                   |                     |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table> | If | Then | the alarm clears | you have completed this procedure | the alarm remains | go to the next step |
| If                | Then  |    |      |                  |                                   |                   |                     |
| the alarm clears  | you have completed this procedure   |    |      |                  |                                   |                   |                     |
| the alarm remains | go to the next step   |    |      |                  |                                   |                   |                     |

---

—continued—

## 7-8 Clearing OCM alarms

---

### Procedure 7-2 (continued) OCM—Circuit Pack Failed

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| <b>Step</b>       | <b>Action</b>   |           |             |                  |   |                   |   |
|-------------------|---|-----------|-------------|------------------|---|-------------------|---|
| <b>2</b>          | Replace the OCM. Refer to <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.  |           |             |                  |   |                   |   |
|                   | <table><thead><tr><th><b>If</b></th><th><b>Then</b></th></tr></thead><tbody><tr><td>the alarm clears</td><td>the removed circuit pack has faults. You have completed this procedure.</td></tr><tr><td>the alarm remains</td><td>the circuit pack is not the problem. Re-insert the original circuit pack. Contact your next level of support.</td></tr></tbody></table> | <b>If</b> | <b>Then</b> | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Re-insert the original circuit pack. Contact your next level of support. |
| <b>If</b>         | <b>Then</b>   |           |             |                  |   |                   |   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |           |             |                  |   |                   |   |
| the alarm remains | the circuit pack is not the problem. Re-insert the original circuit pack. Contact your next level of support.   |           |             |                  |   |                   |   |

—end—

---

## Procedure 7-3

# OCM—Circuit Pack Mismatch

---

### Probable cause

This alarm can also be caused by putting an OCM 2.5 Gbit/s into an OCM 1.25 Gbit/s slot, or by putting an OCM 1.25 Gbit/s into an OCM 2.5 Gbit/s slot.

### Impact

Major, non-service-affecting.

### Precautions

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

## 7-10 Clearing OCM alarms

---

Procedure 7-3 (continued)

### OCM—Circuit Pack Mismatch

---

#### Action

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| Step                           | Action  |                        |            |                                |  |                            |                        |
|--------------------------------|---|------------------------|------------|--------------------------------|--|----------------------------|------------------------|
| 1                              | <p>Make sure that the circuit pack in the OCM slot (9 or 10) is an OCM circuit pack.</p> <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>the circuit pack is not an OCM</td><td>insert the correct OCM (1.25 Gbit/s or 2.5 Gbit/s).<br/>Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components 323-1701-201</i> if the alarm clears, you have finished the procedure, otherwise go to the next step.</td></tr><tr><td>the circuit pack is an OCM</td><td>go to the next step</td></tr></tbody></table>                                   | If                     | Then       | the circuit pack is not an OCM | insert the correct OCM (1.25 Gbit/s or 2.5 Gbit/s).<br>Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components 323-1701-201</i> if the alarm clears, you have finished the procedure, otherwise go to the next step. | the circuit pack is an OCM | go to the next step    |
| If                             | Then  |                        |            |                                |  |                            |                        |
| the circuit pack is not an OCM | insert the correct OCM (1.25 Gbit/s or 2.5 Gbit/s).<br>Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components 323-1701-201</i> if the alarm clears, you have finished the procedure, otherwise go to the next step.  |                        |            |                                |  |                            |                        |
| the circuit pack is an OCM     | go to the next step   |                        |            |                                |  |                            |                        |
| 2                              | <p>Make sure the provisioned circuit pack type aligns with the required OCM circuit pack type (1.25 Gbit/s or 2.5 Gbit/s). In System Manager under Equipment-Inventory, double-click on the OCM indicated by the alarm. Look under “Provisioning Data” and verify that the “Circuit Pack Type” and “Max Bit Rate” correspond with the circuit pack that is seated in the shelf.</p> <table><thead><tr><th>If the circuit pack is</th><th>Then go to</th></tr></thead><tbody><tr><td>incorrectly provisioned</td><td>the next step</td></tr><tr><td>correctly provisioned</td><td><a href="#">step 5</a></td></tr></tbody></table> | If the circuit pack is | Then go to | incorrectly provisioned        | the next step  | correctly provisioned      | <a href="#">step 5</a> |
| If the circuit pack is         | Then go to  |                        |            |                                |  |                            |                        |
| incorrectly provisioned        | the next step   |                        |            |                                |  |                            |                        |
| correctly provisioned          | <a href="#">step 5</a>  |                        |            |                                |  |                            |                        |
| 3                              | <p>Replace the OCM with the correct OCM. Refer to <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures, 323-1701-546</i> .</p> <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>go to the next step</td></tr></tbody></table>  | If                     | Then       | the alarm clears               | you have completed this procedure  | the alarm remains          | go to the next step    |
| If                             | Then  |                        |            |                                |  |                            |                        |
| the alarm clears               | you have completed this procedure   |                        |            |                                |  |                            |                        |
| the alarm remains              | go to the next step   |                        |            |                                |  |                            |                        |

—continued—

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 Procedure 7-3 (continued)  
**OCM—Circuit Pack Mismatch**


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| Step              | Action  |    |      |                  |   |                   |   |
|-------------------|---|----|------|------------------|---|-------------------|---|
| 4                 | Reseat the OCM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310<br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>contact your next level of support</td> </tr> </tbody> </table>   | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | contact your next level of support  |
| If                | Then  |    |      |                  |   |                   |   |
| the alarm clears  | you have completed this procedure   |    |      |                  |   |                   |   |
| the alarm remains | contact your next level of support  |    |      |                  |   |                   |   |
| 5                 | Manually switch traffic to the other OCM. Follow <a href="#">Procedure 3-57 “Manual switching on OCM circuit packs”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                  |   |                   |   |
| 6                 | Reseat the OCM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310<br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step   |
| If                | Then  |    |      |                  |   |                   |   |
| the alarm clears  | you have completed this procedure   |    |      |                  |   |                   |   |
| the alarm remains | go to the next step   |    |      |                  |   |                   |   |
| 7                 | Replace the OCM. Refer to <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.<br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Re-insert the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Re-insert the original circuit pack. Contact your next level of support. |
| If                | Then  |    |      |                  |   |                   |   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.   |    |      |                  |   |                   |   |
| the alarm remains | the circuit pack is not the problem. Re-insert the original circuit pack. Contact your next level of support.   |    |      |                  |   |                   |   |

—end—

## Procedure 7-4 OCM—Circuit Pack Missing

---

### Probable cause

This alarm becomes active when the provisioned slot does not contain an OCM circuit pack or the OCM is not correctly seated in the slot.

### Impact

Major, non-service-affecting.

### Precautions



#### CAUTION

##### Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

### Action

---

| Step                            | Action   |    |      |                                 |  |                             |                     |
|---------------------------------|--|----|------|---------------------------------|--|-----------------------------|---------------------|
| 1                               | <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>there is not an OCM in the slot</td><td>insert an OCM. Use <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.<br/><br/>If the alarm clears, you have completed this procedure.<br/><br/>If the alarm remains, go to the next step.</td></tr><tr><td>there is an OCM in the slot</td><td>go to the next step</td></tr></tbody></table> | If | Then | there is not an OCM in the slot | insert an OCM. Use <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.<br><br>If the alarm clears, you have completed this procedure.<br><br>If the alarm remains, go to the next step. | there is an OCM in the slot | go to the next step |
| If                              | Then   |    |      |                                 |  |                             |                     |
| there is not an OCM in the slot | insert an OCM. Use <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.<br><br>If the alarm clears, you have completed this procedure.<br><br>If the alarm remains, go to the next step.   |    |      |                                 |  |                             |                     |
| there is an OCM in the slot     | go to the next step  |    |      |                                 |  |                             |                     |

—continued—

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 Procedure 7-4 (continued)  
**OCM—Circuit Pack Missing**


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| Step              | Action   |    |      |                  |   |                   |   |
|-------------------|--|----|------|------------------|---|-------------------|---|
| 2                 | Reseat the OCM in the slot that has the OCM missing alarm active. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                  |   |                   |   |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step   |
| If                | Then   |    |      |                  |   |                   |   |
| the alarm clears  | you have completed this procedure  |    |      |                  |   |                   |   |
| the alarm remains | go to the next step  |    |      |                  |   |                   |   |
| 3                 | Replace the OCM. Refer to <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |    |      |                  |   |                   |   |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310. Contact your next level of support.</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Contact your next level of support. |
| If                | Then   |    |      |                  |   |                   |   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |    |      |                  |   |                   |   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Contact your next level of support.  |    |      |                  |   |                   |   |

—end—

## Procedure 7-5 OCM—Forced Switch to OCM (9) or (10) Active

---

### Probable cause

The Forced Switch to OCM 9 Active alarm becomes active when the user requests that traffic switch to the OCM in slot 9.

The Forced Switch to OCM 10 Active alarm becomes active when the user requests that traffic switch to OCM 10.

This is a normal indication when a forced switch is used for testing or maintenance activities.

### Impact

Minor, non-service-affecting.

### Action

---

| Step  | Action   |    |      |   |                                   |                   |                                    |
|---|--|----|------|---|-----------------------------------|-------------------|------------------------------------|
| 1   | Determine if a Force Switch is active for testing or maintenance purposes.   |    |      |   |                                   |                   |                                    |
| 2   | <table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>necessary for testing or maintenance activities</td><td>you have completed this procedure</td></tr><tr><td>not necessary</td><td>go to the next step</td></tr></tbody></table>   | If | Then | necessary for testing or maintenance activities | you have completed this procedure | not necessary     | go to the next step                |
| If  | Then   |    |      |   |                                   |                   |                                    |
| necessary for testing or maintenance activities | you have completed this procedure  |    |      |   |                                   |                   |                                    |
| not necessary                                   | go to the next step  |    |      |   |                                   |                   |                                    |
| 3   | Release the force switch if it is not necessary. Follow <a href="#">Procedure 3-58 "Removing a force switch from an OCM"</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.<br><table><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>the alarm clears</td><td>you have completed this procedure</td></tr><tr><td>the alarm remains</td><td>contact your next level of support</td></tr></tbody></table> | If | Then | the alarm clears                                | you have completed this procedure | the alarm remains | contact your next level of support |
| If  | Then   |    |      |   |                                   |                   |                                    |
| the alarm clears                                | you have completed this procedure  |    |      |   |                                   |                   |                                    |
| the alarm remains                               | contact your next level of support   |    |      |   |                                   |                   |                                    |

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—end—

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## Procedure 7-6

# OCM—Inter-card Communication Failure

---

### Probable cause

This alarm becomes active when the SP circuit pack cannot communicate with the specified circuit pack.

### Impact

Major, non-service-affecting.

### Precautions

**CAUTION****Risk of recovery procedures affecting traffic**

This alarm is not service-affecting; however, the recovery action can be service-affecting.

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**CAUTION****Risk of loss of communications**

Do not reseal the SP if both OCMs in the shelf are raising this alarm, as this causes a loss of communications.

—continued—

Procedure 7-6 (continued)

**OCM—Inter-card Communication Failure**

**Action**

| Step  | Action  |           |                   |                                  |               |                                     |        |   |         |
|---|---|-----------|-------------------|----------------------------------|---------------|-------------------------------------|--------|---|---------|
| 1   | <p>Using the Fault—Active Alarms window in the System Manger, check to see if the Inter-card Communication Failure alarm is raised by more than one circuit pack in the shelf.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then go to</b></td> </tr> <tr> <td>the alarm is raised by both OCMs</td> <td>the next step</td> </tr> <tr> <td>the alarm is raised by only one OCM</td> <td>step 6</td> </tr> <tr> <td>the alarm is raised by multiple non-OCM circuit packs</td> <td>step 10</td> </tr> </table> | <b>If</b> | <b>Then go to</b> | the alarm is raised by both OCMs | the next step | the alarm is raised by only one OCM | step 6 | the alarm is raised by multiple non-OCM circuit packs | step 10 |
| <b>If</b>   | <b>Then go to</b>   |           |                   |                                  |               |                                     |        |   |         |
| the alarm is raised by both OCMs                      | the next step   |           |                   |                                  |               |                                     |        |   |         |
| the alarm is raised by only one OCM                   | step 6  |           |                   |                                  |               |                                     |        |   |         |
| the alarm is raised by multiple non-OCM circuit packs | step 10   |           |                   |                                  |               |                                     |        |   |         |



**CAUTION**  
**Risk of a loss of communications to the shelf**  
 There is a risk of a loss of communications to the shelf if both OCMs are raising this alarm, and the SP is reseated as the first step. Do not reseat the SP if both OCMs are raising this alarm.

|                   |   |           |             |                  |                                   |                   |                     |
|-------------------|---|-----------|-------------|------------------|-----------------------------------|-------------------|---------------------|
| 2                 | <p>Reseat one of the OCMs raising the ICF alarm. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table> | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure | the alarm remains | go to the next step |
| <b>If</b>         | <b>Then</b>   |           |             |                  |                                   |                   |                     |
| the alarm clears  | you have completed this procedure   |           |             |                  |                                   |                   |                     |
| the alarm remains | go to the next step   |           |             |                  |                                   |                   |                     |
| 3                 | <p>Reseat the other OCM raising the ICF alarm. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>If</b></td> <td style="width: 50%;"><b>Then</b></td> </tr> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </table>   | <b>If</b> | <b>Then</b> | the alarm clears | you have completed this procedure | the alarm remains | go to the next step |
| <b>If</b>         | <b>Then</b>   |           |             |                  |                                   |                   |                     |
| the alarm clears  | you have completed this procedure   |           |             |                  |                                   |                   |                     |
| the alarm remains | go to the next step   |           |             |                  |                                   |                   |                     |

—continued—

Procedure 7-6 (continued)

**OCM—Inter-card Communication Failure**

| Step              | Action   |    |      |                  |   |                   |   |
|-------------------|--|----|------|------------------|---|-------------------|---|
| 4                 | Replace one of the OCMs raising the ICF alarm. Refer to <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |    |      |                  |   |                   |   |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310. Go to the next step.</td> </tr> </tbody> </table>                | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step.                |
| If                | Then   |    |      |                  |   |                   |   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |    |      |                  |   |                   |   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step.   |    |      |                  |   |                   |   |
| 5                 | Replace the other OCM raising the ICF alarm. Refer to <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |    |      |                  |   |                   |   |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310. Contact your next level of support.</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Contact your next level of support. |
| If                | Then   |    |      |                  |   |                   |   |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |    |      |                  |   |                   |   |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Contact your next level of support.  |    |      |                  |   |                   |   |
| 6                 | Manually switch traffic to the other OCM. Follow <a href="#">Procedure 3-58 “Manual switching on OCM circuit packs”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.  |    |      |                  |   |                   |   |
| 7                 | Reseat the OCM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.   |    |      |                  |   |                   |   |
|                   | <table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If | Then | the alarm clears | you have completed this procedure                                       | the alarm remains | go to the next step   |
| If                | Then   |    |      |                  |   |                   |   |
| the alarm clears  | you have completed this procedure  |    |      |                  |   |                   |   |
| the alarm remains | go to the next step  |    |      |                  |   |                   |   |

—continued—

## 7-18 Clearing OCM alarms

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Procedure 7-6 (continued)

### OCM—Inter-card Communication Failure

---

| Step | Action   |   |
|------|--|---|
| 8    | Reseat the SP. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.                      |   |
|      | <b>If</b>  | <b>Then</b>   |
|      | the alarm clears   | you have completed this procedure   |
|      | the alarm remains  | go to the next step   |
| 9    | Replace the OCM. Refer to <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.             |   |
|      | <b>If</b>  | <b>Then</b>   |
|      | the alarm clears   | the removed circuit pack has faults. You have completed this procedure.   |
|      | the alarm remains  | the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to step 11.                      |
| 10   | Reseat the SP. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310.                      |   |
|      | <b>If</b>  | <b>Then</b>   |
|      | the alarm clears   | you have completed this procedure   |
|      | the alarm remains  | go to the next step   |
| 11   | Replace the SP circuit pack. Refer to <a href="#">Procedure 3-13 “Replacing an SP circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546. |   |
|      | <b>If</b>  | <b>Then</b>   |
|      | the alarm clears   | the removed circuit pack has faults. You have completed this procedure.   |
|      | the alarm remains  | the circuit pack is not the problem. Reseat the original circuit pack. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Contact your next level of support. |

—end—

## Procedure 7-7

# OCM—OCM Pair Mismatch

### Probable cause

This alarm becomes active when the OCMs have different manufacturing or provisioning data. For example, the maximum bit rates of the circuit packs are different (1.25 Gbit/s and 2.5 Gbit/s).

### Impact

[Table 7-4](#) lists the impact that this alarm has under different conditions.

**Table 7-4**  
OCM Pair Mismatch alarm impact

| Alarm         | Conditions  | Severity | Impact                |
|---------------|---|----------|-----------------------|
| Pair Mismatch | If the other OCM circuit pack is not operational. | Critical | Service-affecting     |
|               | If the other OCM circuit pack is operational.     | Major    | Non-service-affecting |

### Action

| Step  | Action   |           |             |  |                              |   |   |
|---|--|-----------|-------------|--|------------------------------|---|---|
| 1   | Make sure both circuit packs are the same bit rate.  |           |             |  |                              |   |   |
|   | <table border="0"> <tr> <td style="text-align: left;"><b>If</b></td> <td style="text-align: right;"><b>Then</b></td> </tr> <tr> <td style="border-top: 1px solid black;">the circuit packs have the same bit rate</td> <td style="border-top: 1px solid black;">go to <a href="#">step 3</a></td> </tr> <tr> <td>the circuit packs do not have the same bit rate</td> <td>you must determine which OCM requires replacing. Go to <a href="#">step 2</a>.</td> </tr> </table> | <b>If</b> | <b>Then</b> | the circuit packs have the same bit rate | go to <a href="#">step 3</a> | the circuit packs do not have the same bit rate | you must determine which OCM requires replacing. Go to <a href="#">step 2</a> . |
| <b>If</b>                                       | <b>Then</b>  |           |             |  |                              |   |   |
| the circuit packs have the same bit rate        | go to <a href="#">step 3</a>   |           |             |  |                              |   |   |
| the circuit packs do not have the same bit rate | you must determine which OCM requires replacing. Go to <a href="#">step 2</a> .  |           |             |  |                              |   |   |
| 2   | Verify the maximum bit rate that is required by circuit packs that are provisioned in the shelf. This determines the requirement for either the 1.25 Gbit/s or 2.5 Gbit/s OCM circuit packs. Replace the appropriate circuit pack. Follow <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |           |             |  |                              |   |   |
| 3   | Contact your next level of support.  |           |             |  |                              |   |   |

—end—

## Procedure 7-8 OCM—Protection Not Available

---

This alarm is raised when there is failure of one OCM in a shelf. To clear the alarm you must determine the cause of the failure of the OCM that is paired with the OCM that raised the alarm.

### Probable cause

This alarm becomes active when the other OCM in the shelf

- is taken out-of-service
- is not seated or is missing
- is mismatched (different bit rate)
- has failed

### Impact

Major, non-service-affecting.

*Note:* Traffic is lost if the remaining OCM fails or is taken out-of-service before the OCM it is paired with is returned to service.

### Action

---

| Step | Action   |
|------|--|
| 1    | In the System Manager, select the shelf with the OCM that raised the alarm.  |
| 2    | Select the Fault tab.<br><i>The Fault–Active Alarms window appears.</i>  |
| 3    | From the displayed list, read the alarm description for the failed OCM. Follow the appropriate procedure in this chapter to clear the alarm.<br><i>The Protection Not Available alarm clears after the OCM it is paired with returns to service.</i> |

—end—

---

## Procedure 7-9

# OCM—Unknown Circuit Pack

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### Probable cause

This alarm becomes active when

- the SP circuit pack fails to retrieve the manufacturing data on the circuit pack (data may be missing or may be incorrect)
- the circuit pack type cannot be recognized by the software (the Release version of the circuit pack is not supported by the Release version of the shelf)

If the unknown circuit pack is in an OCM slot (9 or 10), the System Manager displays OCM in the Card column of the Fault - Active Alarms window.

### Impact

Major, non-service-affecting.

### Precautions

**CAUTION****Risk of affecting network reliability**

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 7-9 (continued)  
**OCM—Unknown Circuit Pack**

**Action**

| Step                | Action   |                     |      |                  |                                   |                   |  |
|---------------------|--|---------------------|------|------------------|-----------------------------------|-------------------|--|
| 1                   | <p>Read the latest Baseline Report to see if the circuit pack is compatible with the Release version of the shelf.</p> <p><b>Note:</b> Baseline Reports are available through Nortel Networks. Refer to the <a href="#">“Technical assistance service telephone numbers”</a> section in <a href="#">“About this document”</a> at the beginning of this book.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If the circuit pack</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>is compatible</td> <td>go to the next step</td> </tr> <tr> <td>is incompatible</td> <td>                     replace it with a compatible circuit pack.<br/>                     Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.<br/><br/>                     If the alarm clears, you have completed this procedure.<br/><br/>                     If the alarm remains, go to the next step.                 </td> </tr> </tbody> </table> | If the circuit pack | Then | is compatible    | go to the next step               | is incompatible   | replace it with a compatible circuit pack.<br>Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.<br><br>If the alarm clears, you have completed this procedure.<br><br>If the alarm remains, go to the next step. |
| If the circuit pack | Then   |                     |      |                  |                                   |                   |  |
| is compatible       | go to the next step  |                     |      |                  |                                   |                   |  |
| is incompatible     | replace it with a compatible circuit pack.<br>Follow <a href="#">Procedure 7-1 “Inserting circuit packs”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.<br><br>If the alarm clears, you have completed this procedure.<br><br>If the alarm remains, go to the next step.   |                     |      |                  |                                   |                   |  |
| 2                   | <p>Using the System Manager, switch traffic off the OCM. Refer to <a href="#">Procedure 3-57 “Manual switching on OCM circuit packs”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310.</p>  |                     |      |                  |                                   |                   |  |
| 3                   | <p>Reseat the OCM. Follow <a href="#">Procedure 3-68 “Reseating a circuit pack”</a> in <i>Provisioning and Operating Procedures</i>, 323-1701-310</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>you have completed this procedure</td> </tr> <tr> <td>the alarm remains</td> <td>go to the next step</td> </tr> </tbody> </table>  | If                  | Then | the alarm clears | you have completed this procedure | the alarm remains | go to the next step  |
| If                  | Then   |                     |      |                  |                                   |                   |  |
| the alarm clears    | you have completed this procedure  |                     |      |                  |                                   |                   |  |
| the alarm remains   | go to the next step  |                     |      |                  |                                   |                   |  |

—continued—

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 Procedure 7-9 (continued)  
**OCM—Unknown Circuit Pack**


---

| Step              | Action   |    |      |                  |   |                   |  |
|-------------------|--|----|------|------------------|---|-------------------|--|
| 4                 | Replace the OCM. Refer to <a href="#">Procedure 3-8 “Replacing an OCM circuit pack”</a> in <i>Maintenance and Replacement Procedures</i> , 323-1701-546.   |    |      |                  |   |                   |  |
|                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 50%;">If</th> <th style="text-align: left; width: 50%;">Then</th> </tr> </thead> <tbody> <tr> <td>the alarm clears</td> <td>the removed circuit pack has faults. You have completed this procedure.</td> </tr> <tr> <td>the alarm remains</td> <td>the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.</td> </tr> </tbody> </table> | If | Then | the alarm clears | the removed circuit pack has faults. You have completed this procedure. | the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support. |
| If                | Then   |    |      |                  |   |                   |  |
| the alarm clears  | the removed circuit pack has faults. You have completed this procedure.  |    |      |                  |   |                   |  |
| the alarm remains | the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.   |    |      |                  |   |                   |  |

**ATTENTION**

If you set a forced switch on the path, make sure that you remove the switch when the procedure is completed. Follow [Procedure 3-49 “Removing a manual, force, or lockout switch from a protection path”](#) in *Provisioning and Operating Procedures*, 323-1701-310.

—end—





Nortel

## **Optical Metro 5100/5200**

### **Trouble Clearing and Alarm Reference Guide, Part 1 of 4**

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