

MEMORANDUM FOR: Distribution

FROM: W/OPS1 - John McNulty

SUBJECT: Console Replacement System (CRS) Main Processor (MP)
Modification Procedures

1. Material Transmitted:

Engineering Handbook No. 7, Communications Equipment, Section 3.4,
Modification Note 59, Revision A, CRS Main Processor Replacement
Modification Procedures.

2. Summary:

Request for Change NWS609 authorizes CRS MP replacement for all Phase 2
Replacement Sites.

3. Effect on Other Instructions:

Modification Note 59, Revision A, supercedes previously issued
Modification Note 59.

Distribution:

All holders of EHB-7.

COMMUNICATIONS EQUIPMENT MODIFICATION NOTE 59, REVISION A

(for Electronics Technicians)

Maintenance Branch

W/OPS12: GSS

SUBJECT : CRS Main Processor Replacement Modification Procedures

PURPOSE : This document contains the procedures for performing the Console Replacement System (CRS) main processor (MP) replacement modification, and installation of the version 7.1 CRS software build. The tasks required for the replacement of the CRS MPs are detailed in attachment **A**.

SITES AFFECTED : All Phase 2 MP Replacement Sites (see attachment **D**)

EQUIPMENT AFFECTED : CRS (B440)

PARTS REQUIRED : The parts required will be issued to each site by W/OPS12 from the National Logistics Support Center (NLSC) under the applicable approved Request for Change.
(2) CRS MPs (ASN: B440-1A9)

PARTS SUPPLIED BY THE SITE : None.

TOOLS AND TEST EQUIPMENT REQUIRED : #1 and #2 Phillips screwdrivers
Small flat-blade jeweler's screwdriver
Antistatic workstation kit

TIME REQUIRED : 6 Hours

EFFECT ON OTHER INSTRUCTIONS : None.

AUTHORIZATION : The authority for this modification is Request for Change NWS609.

VERIFICATION STATEMENT : This procedure was tested and verified at the National Weather Service Headquarters (WSH), Silver Spring, MD (SLVM2).

GENERAL : This procedure contains the instructions to replace the CRS MPs.

PROCEDURE : Attachment **A** provides procedures for implementing this modification.
Attachment **B** (CRS Hardware Drawings) provides reference information.
Attachment **C** provides a completed sample of the WS Form A-26, Maintenance Record.
Attachment **D** provides a list of all Phase 2 MP Replacement Sites.

REPORTING : Report the completed modification on a WS Form A-26 according to
INSTRUCTIONS the instructions in Engineering Handbook No. 4 (EHB-4), Engineering Management Reporting System (EMRS), Part 2, and Appendix I.
Include the following information on the WS Form A-26:

- a. An equipment code of **CRSSA** in block 7.
- b. A serial number of **001** in block 8.
- c. A Mod No. of **59** in block 17a.
- d. The old serial number and the new serial number of the OMP and 5MP B440 processors in block 18.

A sample WS Form A-26 is provided as attachment **C**.

John McNulty
Chief, Maintenance, Logistics, and Acquisition Division

Attachment A - Modification Procedure
Attachment B - CRS Hardware Drawings
Attachment C - WS Form A-26 Sample
Attachment D - Phase 2 MP Replacement Sites

Attachment A
Modification Procedure

Attachment A Modification Procedures

GENERAL:

Two newly installed CRS Build 7.0 sites have reported problems with system Word Pronunciation Dictionaries after completing the upgrade. The problems in each case have been traced to inadequate backups of the dictionary files. Sites must ensure backups of the dictionaries in the past are correct. With CRS Build 6.4 and earlier, reconfiguration using the ASCII text data file caused the dictionary files to be destroyed. Subsequent Database Backup/Recovery procedures may have actually backed up zero length dictionary files.

Sites can quickly determine the integrity of the dictionary files by opening the *Maintenance -> Word Pronunciation* window. Click on the list button, i.e., the small down arrow to the right of the *Dictionary* field. Select the desired dictionary from the pick list. Click on the list button, i.e., the small down arrow to the right of the *Word* field. Scroll through the list of words. If the list is empty, the site will need to attempt a recovery of the dictionary files from a past backup, which may either be saved on floppy disk, magnetic tape, or the system hard drive.

WARNING

It is important for sites to do this check and recovery before the installation of CRS Build 7.1. It may be impossible to recover dictionary files after the Main Processors have been upgraded.

Reference the CRS System Administration Manual, dated June 1999, Chapter Seven (7), Section 9, page 7-11 through 7-13, and Appendix M for details on how to backup and recover dictionary files.

WARNING

After the installation of AWIPS Build 5.0, the installation of a patch to the “*transferNWR*” script will be required. Sites are to coordinate the installation of the “*transferNWR*” script patch with the NCF and the AWIPS Site Support Team. This patch fixes certain timing problems associated with the new CRS Build 7.0 software and FTP product transfers from AWIPS. The timeout for the FTP process to return a request for a user name and password has been increased from three to five seconds.

Sites shall ensure the “*transferNWR*” patch is loaded into AWIPS 5.0 before MP Replacement is installed.

NOTICE: Sites should be aware that local and regionally created CRS Products Formatters, other than the baseline AWIPS formatters and CAFÉ, may also need to be patched because of this timing problem. Contact the formatter developer for further information concerning this timing problem.

- NOTE:**
1. System Line Printer functionality will be tested prior to performing this modification to ensure correct operation of the line printer and associated hardware path. Open the Broadcast Cycle window from the Transmitter pull-down menu. Select an active transmitter and click on the **Print** button. Verify the current Broadcast Cycle is printed on the system line printer. If the print functionality fails, perform troubleshooting and correct any problems before proceeding with this modification; otherwise, proceed.
 2. The Front-End Processor (FEP) switch functionality will be tested prior to performing this modification to ensure correct operation of the backup FEP and the associated hardware path. Open the **Front-End Processor Switch** window from the *Maintenance* pull-down menu. Select FEP 1, Out, and Backup Yes, and click on the **Apply hotkey**. Verify the 4BKUP is switched online and the 1FEP is switched offline. Verify proper operation of all transmitters associated with 1FEP in this mode. If the FEP backup functionality fails, perform troubleshooting procedures and correct any problems before proceeding with this modification, otherwise perform another Front-End Processor Switch to bring 1FEP back online. Open the Front End Processor Switch window from the Maintenance pull-down menu. Select **FEP 1** and **In**, then click on the **Apply hotkey**. Verify the 4BKUP is switched offline and 1FEP is switched online. Verify proper operation of all transmitters associated with 1FEP in this mode. If the FEP restore functionality fails, perform troubleshooting and correct any problems before proceeding with this modification.

NOTE: 3. Site ASCII text database files may contain irregularities that will cause problems using the CRS Build 7. feature that allows sites to create an ASCII file from the database. This feature will not run correctly if these irregularities are present in the database.

Before installing CRS Build 7.1, all sites are to ensure that the current ASCII database does not contain unreferenced BLOCK 2 "StationID," BLOCK 3 "Keep Alive" or BLOCK 4 "Interrupt Announcement" messages. Unreferenced entries will cause the "Create ASCII File" program to fail. ("Unreferenced" means the entry exists in BLOCK 2, BLOCK 3, and/or BLOCK 4; yet, do **NOT** exist in BLOCK 5 of the ASCII text file that defines each transmitter.

UNREFERENCED ENTRIES ARE TO BE DELETED FROM THE ASCII FILE.)

The following **example segments** illustrate an improperly configured ASCII file for a site with two (2) transmitters. The BLOCK 2 "StationID" section contains the unreferenced entry "**Baker_MSG_E**" and "**Baker_MSG_S**." The BLOCK 3 "Keep Alive" section contains unreferenced entries, i.e. "**Baker_Alive_E**" and "**Baker_Alive_S**." The BLOCK 4 "Interrupt Announcement" section contains unreferenced entries, i.e. "**Baker_Int_E**" and "**Baker_Int_E**."

Note, in the following BLOCK 5 example, the "**Baker_MSG**," "**Baker_Alive**" and "**Baker_Int**" entries are **NOT** referenced.

On the completion of this procedure, sites WILL execute a full "Initialize System Configuration and Database" procedure using the "XCRS_SITE" utility. Reference the "CRS Site Operator's Manual, dated May 2000, Section 3.7.1, page 3-282".

EXAMPLES OF ASCII DATABASE FILE SEGMENTS:

:BLOCK 2:

#Name	language	Text
ID_17_MSG_E	0	"This is the NOAA Weather Radio in Santa Barbra."
ID_17_MSG_S	1	"Esta es la emisora del Servicio Nacional de Meteorología en Santa Barbra."
ID_23_MSG_E	0	"This is the NOAA Weather Radio in Bakersfield Central Valley."
ID_23_MSG_S	1	"Esta es la emisora del Servicio Nacional de Meteorología en Bakersfield Central Valley."
Baker_MSG_E	0	"This is the NOAA Weather Radio in Bakersfield Central Valley."
Baker_MSG_S	1	"Esta es la emisora del Servicio Nacional de Meteorología en Bakersfield Central Valley."

Revision A

:BLOCK 3:

```
#Name language Text
Generic_Alive_E 0 "This is the generic Keep Alive message in English."
Generic_Alive_S 1 "Este es unmensaje genérico en Español de verificación de estado o
condición."
Baker_Alive_E 0 "This is the generic Keep Alive message in English."
Baker_Alive_S 1 "Este es unmensaje genérico en Español de verificación de estado o
condición."
```

:BLOCK 4:

```
#Name language Text
Generic_Int_E 0 "This is a Program Interrupt message in English."
Generic_Int_S 1 "Esta interrupción del programa es un mensaje en Español"
Baker_Int_E 0 "This is a Program Interrupt message in English."
Baker_Int_S 1 "Esta interrupción del programa es un mensaje en Español"
```

:BLOCK 5:

```
#System Configuration block
#processor configuration
# logproc nodename IP_address
0 OMP 192.9.200.0
1 1FEP 192.9.200.1
2 2FEP 192.9.200.2
3 3FEP 192.9.200.3
4 4BKUP 192.9.200.4
5 5MP 192.9.200.5
```

```
# Tx Tx Proc Proc Tx Time Alert Trans Same Same Voice Long
# Num Func Id Slot State Zone Amp Amp Vali Amp Amp Pause
1 1 1 1 1 7 50 50 0 50 50 1
```

```
#DictionaryName StationIDName KeepAliveName
# InterruptName
ENG SPA NULL NULL ID_17_MSG_E ID_17_MSG_S NULL NULL Generic_Alive_E
Generic_Alive_S NULL NULL Generic_Int_E Generic_Int_S NULL NULL
```

```
#Mnemonic CallSign Freq Location SvcArea
STBRB CPE1 162.400 "Santa Barbra, CA" "South-Central Costal Zones"
```

```
#Voice Rate Baseline Hatrise Stress Rate Baseline Hat Stress
#Type Flag Fallflag Flag Riseflag Fall Rise Rise Amplitude
1 1 1 1 1 180 18 18 32 90
```

```
# Tx Tx Proc Proc Tx Time Alert Trans Same Same Voice Long
# Num Func Id Slot State Zone Amp Amp Vali Amp Amp Pause
2 1 1 2 1 7 50 50 0 50 50 1
```

```

#DictionaryName      StationIDName      KeepAliveName
#      InterruptName
ENG SPA NULL NULL ID_23_MSG_E ID_23_MSG_S NULL NULL Generic_Alive_E
Generic_Alive_S NULL NULL Generic_Int_E Generic_Int_S NULL NULL

```

```

#Mnemonic CallSign Freq Location SvcArea
BAKER CPE2 162.440 "Bakersfield, CA" "Central Valley Zones"

```

```

#Voice Rate Baseline Hatrise Stress Rate Baseline Hat Stress
#Type Flag Fallflag Flag Riseflag Fall Rise Rise Amplitude
1 1 1 1 1 180 18 18 32 90

```

In the above **example** of an ASCII text file, the site **shall** delete all of the “**Baker_**” entries from BLOCK 2, BLOCK 3, and BLOCK 4.

Since “**Keep Alive**” messages are not required, sites may additionally choose to delete all BLOCK 3 entries, keeping only the BLOCK header. If a site chooses to do this, the site **will** also modify BLOCK 5 further by changing all references to KeepAliveNames to **NULL**. See the following example:

```

:BLOCK 2:
#Name language Text
ID_17_MSG_E 0 "This is the NOAA Weather Radio in Santa Barbra."
ID_17_MSG_S 1 "Esta es la emisora del Servicio Nacional de Meteorología en Santa
Barbra."
ID_23_MSG_E 0 "This is the NOAA Weather Radio in Bakersfield Central Valley."
ID_23_MSG_S 1 "Esta es la emisora del Servicio Nacional de Meteorología en Bakersfield
Central Valley."

```

```

:BLOCK 3:
#Name language Text

```

```

:BLOCK 4:
#Name language Text
Generic_Int_E 0 "This is a Program Interrupt message in English."
Generic_Int_S 1 "Esta interrupción del programa es un mensaje en Español"

```

```

:BLOCK 5:
#System Configuration block
#processor configuration
# logproc nodename IP_address
0 OMP 192.9.200.0
1 1FEP 192.9.200.1
2 2FEP 192.9.200.2
3 3FEP 192.9.200.3

```

4 4BKUP 192.9.200.4
5 5MP 192.9.200.5

Tx Tx Proc Proc Tx Time Alert Trans Same Same Voice Long
Num Func Id Slot State Zone Amp Amp Vali Amp Amp Pause
1 1 1 1 1 7 50 50 0 50 50 1

#DictionaryName StationIDName **KeepAliveName**
InterruptName
ENG SPA NULL NULL ID_17_MSG_E ID_17_MSG_S NULL NULL **NULL NULL** NULL NULL
Generic_Int_E Generic_Int_S NULL NULL

#Mnemonic CallSign Freq Location SvcArea
STBRB CPE1 162.400 "Santa Barbra, CA" "South-Central Costal Zones"

#Voice Rate Baseline Hatrise Stress Rate Baseline Hat Stress
#Type Flag Fallflag Flag Riseflag Fall Rise Rise Amplitude
1 1 1 1 1 180 18 18 32 90

Tx Tx Proc Proc Tx Time Alert Trans Same Same Voice Long
Num Func Id Slot State Zone Amp Amp Vali Amp Amp Pause
2 1 1 2 1 7 50 50 0 50 50 1

#DictionaryName StationIDName **KeepAliveName**
InterruptName
ENG SPA NULL NULL ID_23_MSG_E ID_23_MSG_S NULL NULL **NULL NULL** NULL NULL
Generic_Int_E Generic_Int_S NULL NULL

#Mnemonic CallSign Freq Location SvcArea
BAKER CPE2 162.440 "Bakersfield, CA" "Central Valley Zones"

#Voice Rate Baseline Hatrise Stress Rate Baseline Hat Stress
#Type Flag Fallflag Flag Riseflag Fall Rise Rise Amplitude
1 1 1 1 1 180 18 18 32 90



The CRS Build 7.1 system, Main Processor Replacement, is delivered from the contractor with all MP system passwords set to the default nws2000. Immediately, upon completion of the CRS Build 7.1 installation, ALL sites WILL change and synchronize ALL system user passwords.

Procedure

This modification note provides instructions to perform the CRS MP replacement modification. The modification procedure contain eight parts:

1. Pre-installation Procedures
2. CRS Power-Down Procedures
3. Equipment Upgrade Procedures
4. CRS Power-Up Procedures
5. Prepare Emergency Recovery Diskettes
6. CRS Login, Applications Software Loading and Error Verification, and Database Restoration from Tar File Procedures
7. CRS Application Startup and Verification Procedures
8. Pack and Ship the Old OMP and 5MP to NWS Depot Procedures

PART 1 – PRE-INSTALLATION PROCEDURES

1.1 Schedule CRS Down Time Procedure

1. As a conservative estimate, schedule four hours (one hour for backup of the CRS databases and system shutdown, one hour for MP replacement, and two hours for recovery of CRS databases and system startup) to perform the CRS MP replacement. This is a conservative estimate. Your actual time may be less; however, it may require more time, should you encounter problems.
2. Notify the public that CRS (NOAA Weather Radio) is to be down during this scheduled time for maintenance.
3. Unpack the new OMP and 5MP, along with the new keyboards and mice, and move OMP and 5MP to a static-safe work area.

When you receive your system, inspect the shipping containers prior to unpacking. If the shipping boxes are damaged, note the damage, and, if possible, photograph it for reference. After removing the contents of the containers, keep the cartons and the packing materials. If the contents appear damaged when you unpack the boxes, contact Chuck Purcell at CommPower (805-389-7414, ext. 122).

4. Before proceeding with the actual modification, read the entire procedure and perform the following steps:
 - a. Verify the component serial numbers match the information provided by CommPower, using the *CRS Main Processor Replacement Data Sheet*.
 - b. Sign, date, and fax the *CRS Main Processor Replacement Data Sheet* to Chuck Purcell at the number indicated on the sheet.

NOTE: The yellow envelope included in the OMP shipping box, labeled *Box 1 of 1*, contains the *CRS Main Processor Replacement Data Sheet*. An example is provided in attachment **B**, figure A-5.

PART 2 – CRS POWER-DOWN PROCEDURES

2.1 Verify Current Site Digital Database Procedure

1. If you are not currently logged onto the *CRS Main GUI*, the *CRS Security Warning* message window is displayed. Click on the **Acknowledge** button and the *CRS Login* screen is displayed. Login to the CRS main window as **admin**.

NOTE: The security warning window will reappear after thirty (30) seconds if a user ID and password are not entered. If you are logged onto the CRS Main GUI, skip to step 2.

2. CRS_SITE can create a database table entry with no component file. Sites will ensure the site database does not contain table entries that have no component files. The procedure to do this is as follows:
 - a. Open the **Messages -> Message Components** menu selection.
 - b. Check the contents of ALL components; i.e., Lead-In, Call-to-Action, Interrupt, Keep Alive, Station ID, Trailer. If you click on the **Contents** button and receive a **Can't find component contents file error message**, then click on **File** and delete the entry. This will get rid of the spurious database table entry.
3. Open a *Data Verify* window from the *System* pull-down menu. Click on the **OK** button to begin the database verification. Wait for the verify operation to complete. If the *Verify successful* message appears in the *Status* field, proceed to section 2.2. If the *Verify failed* message appears in the *Status* field, click on the **Error Log** button. The *Data Verify - Report* window displays the detected error. Review the error to determine its severity. If you deem it to be of a serious nature, press the **Repair** button. The CRS will attempt to fix the detected problem, after which you will receive a success/failure notification window. If the repair fails, contact the CRS Help Desk for further assistance. If the repair is successful, proceed to section 2.2.

2.2 Backup Current Site Digital Database Procedure

1. Backup the database.

NOTE: 1. If you are not currently logged onto the CRS Main GUI, the *CRS Security Warning* message window displays. Click on the **Acknowledge** button, and the *CRS Login* screen displays. Login to the *CRS* main window as **admin**. The *Security Warning* message window reappears after thirty (30) seconds if a user ID and password are not entered. If you are logged onto the CRS Main GUI, skip to step 2.

2. On a blank part of the desktop, click and hold down the left mouse button to pop-up the *CRS Utilities* menu. Select **XCRS_SITE Utility**, and release the mouse button. The *XCRS_SITE Configuration Developer* window displays.
3. Click on the **Stop CRS System** button. The system displays:
The CRS system will be STOPPED. Continue ?
4. Click on **OK**. Wait for the CRS application to stop. All status icons in the *System Status* window will indicate RED Down. Close the *XCRS_SITE Site Configuration Developer* window by clicking on the **Exit** button.
5. Open a *Database Backup/Restore* window from the *Maintenance* pull-down menu.
6. Select the *Backup to Disk* option. Enter a *Directory Name* of **B64** in the window.
7. Click the **Start Backup** button.
8. Click the **OK** button in the warning pop-up window.
9. When the backup is complete, press the **Enter** key in response to the on screen prompt. The *db_bkup* window closes.
10. Click on the **Exit this window** hotkey.
11. Using the *Maintenance* pull-down menu, open a UNIX shell.
12. Build a tar file by entering the following series of commands at the command prompt:
OMP{admin} **su - crs**
Enter the "crs" user password when prompted.
Enter "n" when prompted to "Display Desktop (y/n)?".
OMP{crs} **cd /crs/data/DB_BKUP**
OMP{crs} **tar cvf /crs/B64.tar ./B64**
13. Wait for the tar file build process to complete.

- Copy the compressed tar file to the 4BKUP hard drive by entering the following series of commands at the command prompt:

```
OMP{crs} cd /crs
```

```
OMP{crs} compress ./B64.tar
```

```
OMP{crs}
```

```
rcp ./B64.tar.Z 4BKUP:/crs/B64.tar.Z
```

- Type **Exit** twice to close the UNIX shell.

<p>NOTE: 2. Ensure all site specific tools, utilities, etc. are backed up prior to performing the UNIX shutdown procedure.</p>

2.3 UNIX Shutdown Procedure

<p>NOTE: 1. The shutdown of the CRS application is just one task before the graceful power-down. After stopping the CRS application software, implement a “controlled/orderly UNIX shutdown with NO automatic reboot” on the (MP) and implement a “controlled/orderly UNIX shutdown” on all FEPs. Upon completion of the controlled/orderly UNIX shutdown, power-down the processors in the following order: the MPs first, followed by the FEPs.</p>
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- Click on the **Maintenance** menu in the *Main CRS* menu to access the *Maintenance* pull-down menu.
- Click on **UNIX Shell** in the *Maintenance* pull-down menu. A UNIX xterm window pops up for the entry of UNIX commands.
- Type the following UNIX command in the xterm window:
su
- Press the **Enter** key. The shell responds with a prompt to enter root passwords.
- Type the password for the root.
- Press the **Enter** key. The shell prompt changes to a pound sign, indicating all subsequent UNIX command entries have root authority.
- Type the following UNIX command in the xterm window:
rsh 5MP /sbin/shutdown -i0 -g0 -y
- Press the **Enter** key. The shell command prompt returns, after displaying a confirmation of shutdown initiation on 5MP. UNIX on processor 5MP shuts down.
- Type the following UNIX command in the xterm window:
rsh 1FEP /sbin/shutdown -i0 -g0 -y

10. Press the **Enter** key. The shell command prompt returns, after displaying a confirmation of shutdown initiation on 1FEP. UNIX on processor 1FEP shuts down.

NOTE: 2. If 2FEP and 3FEP are installed, perform steps 11 through 14, otherwise skip to step 15.

11. Type the following UNIX command in the xterm window:
rsh 2FEP /sbin/shutdown -i0 -g0 -y
12. Press the **Enter** key. The shell command prompt returns, after displaying a confirmation of shutdown initiation on 2FEP. UNIX on processor 2FEP shuts down.
13. Type the following UNIX command in the xterm window:
rsh 3FEP /sbin/shutdown -i0 -g0 -y
14. Press the **Enter** key. The shell command prompt returns, after displaying a confirmation of shutdown initiation on 3FEP. UNIX on processor 3FEP shuts down.
15. Type the following UNIX command in the xterm window:
rsh 4BKUP /sbin/shutdown -i0 -g0 -y
16. Press the **Enter** key. The shell command prompt returns, after displaying a confirmation of shutdown initiation on 4BKUP. The UNIX on processor 4BKUP shuts down.
17. Type the following UNIX commands in the xterm window:
 - a. **cd /**
 - b. Press the **Enter** key.
 - c. Type **/sbin/shutdown -i0 -g0 -y**.
 - d. Press the **Enter** key. Each CRS processor for the system may be safely powered-down when UNIX indicates shutdown is complete with the following message:
Press any key to reboot...

NOTE: 3. Do not reboot any machine. Go to section 2.4.

2.4 CRS Hardware Power-Down Procedure

Power-down all CRS equipment at the operator's station and in the equipment room by turning off the following equipment:

<u>Operators Station</u>	<u>Equipment Room</u>
OMP and Monitor	4BKUP
5MP and Monitor	1FEP
Audio Control Panel (ACP)1	2FEP (if installed)
ACP2	3FEP (if installed)
Tape Drive (if installed)	Monitors
	Printer
	Modem
	Audio switching assembly (ASA) power supplies
	Local area network (LAN) bridge
	LAN Server

PART 3 – EQUIPMENT UPGRADE PROCEDURES

3.1 OMP and 5MP Cable Removal Procedure

On OMP and 5MP, perform the following tasks (reference attachment **B**, figure A-1):

1. Disconnect the power cable.
2. Disconnect the mouse and keyboard cables and remove from service.
3. Disconnect the video cable.
4. Disconnect the SCSI tape drive cable (OMP only).
5. Disconnect the ACP serial cable.
6. Disconnect the modem serial cable (OMP only).
7. Disconnect the analog/digital converter card cable.
8. Disconnect the 10Base2 LAN cable.

3.2 Removal of the Analog/Digital Converter Cards Procedure

NOTE: Removing and replacing circuit cards must be accomplished in an antistatic work area using approved antistatic procedures.

1. Once the cables have been disconnected from OMP and 5MP, move the computers to a static-safe work area.
2. Remove the side panel (reference attachment **B**, figure A-3) from OMP and 5MP.
3. Remove the analog/digital converter card from OMP and 5MP.

4. Do not remove the 10Base2 Network Interface Cards from the OMP and 5MP.
5. Replace the side panels on OMP and 5MP.
6. Using “canned air,” clean the analog/digital converter cards and store in a static-safe environment.

3.3 New OMP and 5MP A/D Converter Card Installation Procedure

<p>NOTE: Removing and replacing circuit cards must be accomplished in an antistatic work area using approved antistatic procedures.</p>
--

1. Remove the side panel (reference figure A-3) from OMP and 5MP.
2. Install the analog/digital converter card in the bottom slot (reference attachment **B**, figure A-2).
3. Ensure all cards, boards, and connectors are properly seated and did not come loose in shipment.
4. Replace the side panel on OMP and 5MP.

3.4 Connection of Cables to OMP and 5MP Procedure

1. Move OMP and 5MP as well as the new keyboards and mice to their operation location(s) and perform the following tasks (reference attachment **B**, figure A-2):
 - a. Connect the mouse cable to the mouse port.
 - b. Connect the keyboard cable to the keyboard port.
 - c. Connect the video monitor cable to the video monitor port.
 - d. Connect the ACP serial cable to Com Port 2.
 - e. Connect the modem serial cable to Com Port 1 (OMP only).
 - f. Connect the analog/digital converter cable to the analog/digital converter card.
 - g. Connect the 10Base2 LAN cable to the 10BaseT-to-10Base2 media converter (supplied by CommPower). Set the 50 ohm switch to **0**.
 - h. Connect the 10BaseT LAN cable (supplied by CommPower) to the 10BaseT-to-10Base2 media converter.
 - i. Connect the power cable.
 - j. Connect the 9V DC power cable to the 10BaseT-to-10Base2 media converter.
 - k. Connect the 10BaseT-to-10Base2 power module power cable to the 110V outlet.

PART 4 – CRS POWER-UP PROCEDURES

4.1 Power-Up FEP Procedure

1. Power-up the following equipment in the equipment room:
 - ACP power supplies
 - LAN bridge
 - LAN server
 - Modem
 - Printer
 - FEP monitors
2. Press the **ON/OFF** switch (front center right of the enclosure) to power-up the FEPs. A green power LED on each FEP lights indicating power is on. The FEPs can be powered-up in any sequence. The FEPs go through a memory check, display the system configuration [as recognized by the basic input/output system (BIOS)], then boot the embedded operating system. At the completion of the boot process, the console screen displays the prompt:

Console Login:

The embedded operating system automatically initializes to a preset level and waits for final start-up commands from the master MP.

<p>NOTE: The FEPs share a common console through the <i>Shared Monitor Switch</i>. The console displays messages while completing the boot process of the FEP currently switched in.</p>

3. Use the *Shared Monitor Switch* to select the next FEP. The console monitor displays:
 - Press F1 to resume, F2 to Setup.**
4. Press **F1** to complete the boot process. The prompt displays:
 - Console Login:**
5. Repeat for each remaining FEP.

4.2 Power-Up ACPs and Video Monitors Procedure

1. Power-up ACP1.
2. Power-up ACP2.
3. Power-up the video monitor for 0MP.
4. Power-up the video monitor for 5MP.

4.3 Power-Up MPs Procedure

NOTE: 1. Power-up 0MP as the master MP and 5MP as the shadowing processor.

1. Press the **ON/OFF** switch (front center right of the enclosures) to power-up the MPs. A green power LED on each MP lights indicating power is on. The MPs can be powered-up in any sequence. The MPs go through a memory check, file system check, system configuration verification (as recognized by the BIOS), and then boot the embedded UNIX operating system. At the completion of the boot process, the workstation screen displays the CRS Login screen. The MPs are now ready for the initialization of the CRS application software.

NOTE: 2. For Build 6.4 and higher: Following power-up, CRS displays the *Security Screen*. Click the **Acknowledge** button to continue the login process.

3. Whenever the MPs are powered-up, they automatically step through the boot process to the multiuser mode without operator intervention.

2. Adjust monitor display size as necessary.

PART 5 – PREPARE EMERGENCY RECOVERY DISKETTES PROCEDURES

NOTE: ALL sites **WILL** create Emergency Recovery Diskettes at this time.

5.1 Create MP Emergency Recovery Diskettes Procedure

1. Locate and label a 1.44 Mbyte floppy as **0MP Emergency Start Disc #1 (Unixware 7.1)**.
2. Locate and label a 1.44 Mbyte floppy as **0MP Emergency Start Disc #2 (Unixware 7.1)**.
3. Locate and label a 1.44 Mbyte floppy as **5MP Emergency Start Disc #1 (Unixware 7.1)**.
4. Locate and label a 1.44 Mbyte floppy as **5MP Emergency Start Disc #2 (Unixware 7.1)**.
5. Login to the **0MP** system as the **root** user.

NOTE: 1. The *DEFAULT* password for the root user is *nws2000*.

6. Click the **KDE Desktop Application Starter** icon (the big “*K Wheel*” icon) in the lower left part of the KDE Desktop panel.

7. Click on the **Utilities -> Terminal** pop-up menu selection.

NOTE: 2. You may also start the *Terminal Emulation* by clicking on the Terminal icon on the KDE Desktop panel (the “*double Terminal*” icon).

8. Insert the **OMP Emergency Start Disc #1 (Unixware 7.1)** disc in the **OMP** floppy drive.
9. At the command prompt, format the diskette using the following command string:
`OMP{root} format -v /dev/rdisk/f03ht`
10. Repeat steps 8 and 9 for the three (3) remaining floppy discs.
11. Remove any floppy discs from the **OMP** floppy drive.
12. On 5MP at the security screen, press **Ctrl-Alt-Esc** simultaneously. The prompt displays:

Console Login:

13. Login as root and enter the default password.
14. Execute the following command string at the command prompt:
`5MP{root} /sbin/shutdown -y -g0 -iS`
15. Wait for **5MP** to display the following message:
Type Ctrl-d to proceed with normal startup, (or give root password for a single user mode)

16. Enter the default root password **nws2000** and wait for the following message and root command prompt:

Entering Single User Mode

5MP{root}

17. On the *5MP node*, place the disk labeled **5MP Emergency Start Disc #1 (Unixware 7.1)** in the **5MP** floppy disc drive. At the command prompt, execute the following common string:

5MP{root} /sbin/emergency_disk -d /var/tmp diskette1

If prompted for a disc, make sure the disk labeled **5MP Emergency Start Disc #1 (Unixware 7.1)** is in the **5MP** floppy disc drive, then press the **Enter** key.

When the system displays:

Please enter the medium to use for emergency_rec (default ctape1)?

Press the **Enter** key.

When prompted, insert the disk labeled **5MP Emergency Start Disc #2 (Unixware 7.1)** in the **5MP** floppy disk drive, then press the **Enter** key.
DO NOT SELECT ANY OTHER MENU CHOICES.

Wait for the procedure to complete and the command prompt to return. Remove the disk from the floppy drive and write protect both diskettes.

DO NOT REBOOT AT THIS TIME.

18. On OMP, click on the **KDE Desktop Application Starter** icon (the big K-Wheel icon) in the lower left part of the KDE Desktop panel and select **Logout**. The Session Prepared for Logout window displays. Click on **Logout**.

19. On OMP, at the security screen, press **Ctrl-Alt-Esc** simultaneously. The console login prompt displays. Login as root and enter the default password.

20. At the command prompt, execute the following command string:

```
OMP{root} /sbin/shutdown -y -g0 -iS
```

21. Wait for the OMP to display the following message:

Type Ctrl-d to proceed with normal startup, (or give root password for a single user mode)

22. Enter the default root password **nws2000**, and wait for the following message and the root command prompt:

Entering Single User Mode

```
OMP {root}
```

23. On the **OMP**, place the disk labeled **OMP Emergency Start Disc #1 (Unixware 7.1)** disk in the **OMP** floppy disk drive. At the command prompt, execute the following command string:

```
OMP{root} /sbin/emergency_disk -d /var/tmp diskette1
```

Wait for the system to display a prompt for a disc and make sure the **OMP Emergency Start Disc #1 (Unixware 7.1)** is in the **OMP** floppy disc drive, then press the **Enter** key.

When the system displays:

Please enter the medium to use for emergency_rec (default ctape1)?

Press the **Enter** key.

When prompted, insert the disk labeled, **OMP Emergency Start Disc #2 (Unixware 7.1)** in the **OMP** floppy disc drive, then press the **Enter** key.
DO NOT SELECT ANY OTHER MENU CHOICES.

Wait for the procedure to complete and the command prompt to return. Remove the disk from the floppy disk drive, and write protect both diskettes. **DO NOT REBOOT AT THIS TIME.**

5.2 Test 5MP Emergency Recovery Diskettes Procedure

1. On the **5MP node**, insert the disk labeled **5MP Emergency Start Disc #1 (Unixware 7.1)** in the **5MP** floppy disk drive, then type the following command string:
`5MP{root} /sbin/shutdown -y -g0 -i0`
Wait for the system to display:
“System has halted and may be powered off (Press any key to reboot).”
Press **Enter**.
When prompted, insert the disk labeled **5MP Emergency Start Disc #2 (Unixware 7.1)** in the **5MP** floppy disc drive, then press the **Enter** key.
Wait for the **The Hard Disc is Sane** message, then press the **Enter** key.
2. Select **Mount File Systems** and press **Enter**.
3. Select **Access UnixWare Shell** and press **Enter**.
4. At the **root** prompt, type the following command, and press **Enter**:
`# ls -l /mnt`
5. Verify a basic directory structure is present on the 5MP node.
6. At the **root** prompt, type **exit** and press **Enter**.
7. Remove the disk labeled **5MP Emergency Start Disc #2 (Unixware 7.1)** from the **5MP** floppy disc drive.

*****WARNING*****

DO NOT REBOOT 5MP AT THIS TIME.

5.3 Test 0MP Emergency Recovery Diskettes Procedure

1. On the **0MP node**, insert the disk labeled **0MP Emergency Start Disc #1 (Unixware 7.1)** in the **0MP** floppy disc drive and type the following command string:
`0MP{root} /sbin/shutdown -y -g0 -i0`
Wait for the system to display:
“System has halted and may be powered off (Press any key to reboot).”
Press **Enter**.
When prompted, insert the disk labeled **0MP Emergency Start Disc #2 (Unixware 7.1)** in the **0MP** floppy disc drive and press the **Enter** key.

Wait for the **The Hard Disc is Sane** message and press the **Enter** key.

2. Select **Mount File Systems** and press **Enter**.
3. Select **Access UnixWare Shell** and press **Enter**.
4. At the **root** prompt, type the following command, and press **Enter**:
ls -l /mnt
5. Verify a basic directory structure is present on the **OMP node**.
6. At the **root** prompt, type **exit** and press **Enter**.
7. Remove the **OMP Emergency Start Disc #2 (Unixware 7.1)** disc from the **OMP** floppy disc drive.
8. On **OMP**, select **Reboot** and press **Enter**.
9. On **5MP**, select **Reboot** and press **Enter**.

5.4 INETD Daemon Check Procedure

An intermittent failure of the system **inetd** daemon has been reported during testing at WSH. Typical symptoms include not being able to **rsh** into either OMP or 5MP from another node (i.e., FEP or MP) or **rcp** a file to the MPs. As a precaution, sites **shall** verify the system **inetd** daemon is running.

1. Login to 1FEP as the **root** user.
2. From the command line, attempt a **rsh** command to log into OMP:
1FEP{root} rsh OMP
3. If the **rsh** command to OMP was not successful, go to the OMP and login as **root**. Click the **KDE Desktop Application Starter** icon (the big "*K Wheel*" icon) in the lower left part of the KDE Desktop panel. Click on the **Utilities -> Terminal** pop-up menu selection. Otherwise, skip to step 8.
4. From the command line, enter the following commands:

```
OMP{root} ps -ef | grep sac
OMP{root} ps -ef | grep inetd
```

5. Verify the display resembles the following example from a WSH test system session:

```
OMP{root} ps -ef | grep sac
  root 1447  1 TS 85 0 Jan 05 ?  0:00 /usr/lib/saf/sac -t 300
  crs 25010 24854 TS 85 0 14:52:19 pts/8 0:00 grep sac
OMP{root} ps -ef | inetd
  root 1459 1447 TS 80 0 Jan 05 ?  0:00 /usr/sbin/inetd
  crs 25002 24854 TS 85 0 14:52:13 pts/8 0:00 grep inetd
OMP{root}
```

6. If the **inetd** daemon is not running on OMP, execute the following commands:


```
OMP{root} cd /
OMP{root} /usr/lib/saf/sac -t 300 &
OMP{root} /sbin/shutdown -y -g0 -i0
```
7. Wait for OMP to fully reboot.
8. From the command line, on 1FEP, enter the following commands:


```
1FEP{root} rsh 5MP
```
9. If the **rsh** command to 5MP was not successful, go to the 5MP. On 5MP, at the security screen, press **Ctrl-Alt-Esc** simultaneously. The console login prompt displays. Login as root, and enter the default password. Otherwise, log off of 1FEP and continue with section 5.5.
10. From the command line, enter the following commands:


```
5MP{root} ps -ef | grep sac
5MP{root} ps -ef | grep inetd
```
11. Verify the display resembles the following example from a WSH test system session:


```
5MP{root} ps -ef | grep sac
  root 1405   1  TS 85 0  Jan 05 ?   0:00 /usr/lib/saf/sac -t 300
  crs 24942 24925  TS 85 0 14:52:58 _tcp/6 0:00 grep sac
5MP{root} ps -ef | grep inetd
  root 1413 1405  TS 80 0  Jan 05 ?   0:00 /usr/sbin/inetd
  crs 24940 24925  TS 85 0 14:52:48 _tcp/6 0:00 grep inetd
5MP{root}
```
12. If the **inetd** daemon is not running on 5MP execute the following commands:


```
5MP{admin} su - root
Enter the root user password when prompted

5MP{root} cd /
5MP{root} /usr/lib/saf/sac -t 300 &
5MP{root} /sbin/shutdown -y -g0 -i0
```
13. Wait for 5MP to fully reboot.
14. Log off the 1FEP node.

5.5 Verify Correct System “netmask” and “broadcast” Address.

1. Wait for the **CRS Login Screen** to appear on both **OMP** and **5MP**, then log into **OMP** as user **root**.
2. Click the **KDE Desktop Application Starter** icon (the big “*K Wheel*” icon) in the lower left part of the *KDC Desktop panel*.

3. Click on the **Utilities -> Terminal** pop-up menu selection.
4. At the prompt, type the following command:

```
OMP{root} ifconfig -a
```

See the following example from a WSH session:

```
OMP{root} ifconfig -a <----- User types this
lo0: flags=4049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 16384
    inet 127.0.0.1 netmask ff000000
    inet/perf: rcv size: 4096; send size: 8192; full-size frames: 1
    inet/options: rfc1323
net0: flags=4043<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 165.92.20.111 netmask fff0000 broadcast 165.92.255.255
    inet/perf: rcv size: 24576; send size: 24576; full-size frames: 1
    inet/options: rfc1323
    ether 00:d0:b7:65:58:f5
OMP{root}
```

NOTE: 1. The net0 '**netmask**' and '**broadcast**' addresses, marked in bold in the above example, should be **fff0000** and **165.92.255.255**, respectively. These values are true for ALL sites.

5. At the prompt type the following command:

```
OMP{root} rsh 5MP /usr/sbin/ifconfig -a
```

See the following example from a WSH session:

```
OMP{root} rsh 5MP /usr/sbin/ifconfig -a <----- User types this
lo0: flags=4049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 16384
    inet 127.0.0.1 netmask ff000000
    inet/perf: rcv size: 4096; send size: 8192; full-size frames: 1
    inet/options: rfc1323
net0: flags=4043<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 165.92.20.112 netmask fff0000 broadcast 165.92.255.255
    inet/perf: rcv size: 24576; send size: 24576; full-size frames: 1
    inet/options: rfc1323
    ether 00:d0:b7:65:58:f5
OMP{root}
```

NOTE: 2. The net0 '**netmask**' and '**broadcast**' addresses, marked in bold in the above example, should be **fff0000** and **165.92.255.255**, respectively. These values are true for ALL sites.

6. If the **0MP** and **5MP** values are both correct, proceed to section 6.1. If the 0MP values are not correct, proceed to step 7. If the 0MP values are correct, but the 5MP values are not, proceed to step 15.
7. Type the following at the UNIX prompt:
 0MP{root} **scoadmin Network Configuration Manager**
 The Network Configuration Manager window is displayed.
8. Click on Protocol.
9. Click on Modify Protocol Configuration, which will cause a window of Internet protocol values to be displayed. NETMASK has four boxes, and the correct values for each, from left to right, are the following:
255 255 0 0
10. Click on the appropriate box whose value needs to be changed. The box will be highlighted in black.
11. Make the change for each of the boxes, as necessary. When all changes are complete, click on **OK**. The system will return to tell you the following product modified: **TCPIP**.
12. Click on **OK**.
13. Click on **Hardware**.
14. Click on **exit**. The UNIX shell prompt is returned. If 5MP netmask does not need to be changed, skip to step 27 to reboot 0MP. Otherwise continue with the next step to change the netmask on 5MP and remember to reboot both 0MP and 5MP in step 27.
15. Enter the following commands from the UNIX shell prompt to start the Network Configuration Manager on 5MP:
 0MP{root} **rsh 5MP**

NOTE: 3. The prompt will be {admin} if you did not change the netmask on 0MP.

16. On 5MP type:
 5MP{root} **scoadmin Network Configuration Manager**
17. The Network Configuration Manager menu is displayed. Scroll down to TCPIP and hit the **Tab** key, which will take you to the main menu bar. The following three options are displayed:
Hardware Protocol View
18. With right arrow key, select Protocol and press **Enter**.

19. Scroll down and highlight the **Modify Protocol Configuration** option and press **Enter**. This displays a screen of Internet protocol values.
20. Tab down to the four netmask octets and make the appropriate changes. The correct values follow:
255 255 0 0
21. Use the **Tab** key to select **OK** and press **Enter**. The system returns to tell you the following product is modified: **TCPIP**.
22. Select **OK** and press **Enter**. The main menu displays.
23. Use the left arrow key to select hardware and press **Enter**. The UNIX shell prompt for 5MP is returned.
24. Type **exit** as many times as necessary until the OMP shell prompt is returned.
25. Proceed to the next step to reboot 5MP (and OMP, if necessary).
26. At the UNIX prompt, type the following commands:
OMP{root} **rsh 5MP /sbin/shutdown -y -i0 -g0**
OMP{root} **cd /**
OMP{root} **/sbin/shutdown -y -i0 -g0**
27. Wait for the system(s) to shutdown, then press any key to reboot.
28. Login as user **root**.
29. Click the **KDE Desktop Application Starter** icon (the big "*K Wheel*" icon) in the lower left part of the KDE Desktop panel. Click on the **Utilities -> Terminal** pop-up menu selection.
30. If you changed the netmask on 5MP only, proceed to step 32. Otherwise, enter the following command at the UNIX prompt:

```
OMP{root} ifconfig -a
```

See the following example from a WSH session:

```
OMP{root} ifconfig -a <---- User types this
lo0: flags=4049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 16384
    inet 127.0.0.1 netmask ff000000
    inet/perf: rcv size: 4096; send size: 8192; full-size frames: 1
    inet/options: rfc1323
net0: flags=4043<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 165.92.20.111 netmask ffff0000 broadcast 165.92.255.255
    inet/perf: rcv size: 24576; send size: 24576; full-size frames: 1
    inet/options: rfc1323
    ether 00:d0:b7:65:58:f5
OMP{root}
```

NOTE:

4. The net0 '**netmask**' and '**broadcast**' addresses, marked in bold in the above example, should be **ffff0000** and **165.92.255.255**, respectively. These values are true for ALL sites.

31. If you changed the netmask on OMP only, proceed to section 6.1. Otherwise, enter the following command at the UNIX prompt:

```
OMP{root} rsh 5MP /usr/sbin/ifconfig -a
```

See the following example from a WSH session:

```
OMP{root} ifconfig -a <----- User types this
```

```
lo0: flags=4049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 16384
  inet 127.0.0.1 netmask ff000000
  inet/perf: rcv size: 4096; send size: 8192; full-size frames: 1
  inet/options: rfc1323
net0: flags=4043<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
  inet 165.92.20.112 netmask ffff0000 broadcast 165.92.255.255
  inet/perf: rcv size: 24576; send size: 24576; full-size frames: 1
  inet/options: rfc1323
  ether 00:d0:b7:65:58:f5
OMP{admin}
```

NOTE:

5. The net0 '**netmask**' and '**broadcast**' addresses, marked in bold in the above example, should be **ffff0000** and **165.92.255.255**, respectively. These values are true for ALL sites.

32. Type **Exit** to close the *dtterm* window.

33. Proceed to section 6.1.

PART 6 – CRS LOGIN, APPLICATIONS SOFTWARE LOADING AND ERROR VERIFICATION, AND DATABASE RESTORATION FROM TAR FILE PROCEDURES

6.1 CRS Software Version 7.1 Installation from CD-ROM Procedure

1. If the OMP was rebooted, at the *Login GUI* window, login as the root user. Click the **KDE Desktop Application Starter** icon (the big K Wheel icon) in the lower left part of the *KDE Desktop* panel. If the OMP was not rebooted, proceed to step 2.
2. Click on the **SCO Control Center** pop-up menu selection.

NOTE: 1. You also may start the *SCO Control Center* by clicking on the **SCO Admin** icon on the KDE Desktop panel (the *Swiss Army Knife* icon).

3. Select and double-click on the **Software_Management** menu selection.
4. Double-click the **Applications Installer** menu selection.
5. Insert the CD-ROM into the CD drive of the selected installation MP, then select **CD-ROM_1** from the pop-up menu, following the *Install from:* prompt in the upper half of the **Application Installer** window.
6. After the CRS application package icons (**crsopsais**, **crsopsfpm** and **crsopsmpm**) are displayed immediately below the *Install from* prompt, select **crsopsais**, and click on **Install** (Note: **crsopsfpm** and **crsopsmpm** can only be installed indirectly through crsopsais).
7. Respond to the prompts displayed in the **Add Application: crsopsais** and **auto_install** terminal windows.

NOTE: 2. The *Add Application: crsopsais* window and the *auto_install* window are used to display the installation activity log as well as the prompts to the installation operator. The log information and the prompt sequences vary depending on the responses to the prompts.

6.2 Installation Prompts

NOTE: 1. The installation prompts that follow assume a typical configuration (OMP, 5MP, 1FEP, and 4BKUP).

2. The prompt sequence begins with **prompt p1**. Unless otherwise indicated, prompts occur in sequence (**p1 ... p11**).

p1 *Build [version] installation options*

- a) all processors (OMP 5MP 1FEP 4BKUP | 5MP OMP 1FEP 4BKUP)
- f) front-end processors (1FEP 4BKUP)
- m) MPs (OMP 5MP | 5MP OMP)

NOTE:

(6.2 continued)

s) specific processor

Make sure that installation default option a is selected to load the software on all processors.

p2 *Clean out (reset) log files?* (default: y)

An affirmative (y) response to this prompt will result in the resetting of all the CRS application software log files on all the processors in the configuration. A negative response (n) will result in no changes to the CRS log files on any of the processors. It is normally good practice to clean the log files when a new software release is installed.

p3 *Change CRS system date and time?* (default: n)

An affirmative (y) response to this prompt will result in a sequence of additional prompts beginning with *p4*. The entered date will be used to change the date and time on all the processors. A negative response (n) will result in no changes to the current system date and time (displayed prior to the prompt), and the next prompt will be *p9*.

p4 *Enter year* (e.g., 1997):

p5 *Enter month* (e.g., 01<=mm<=12):

p6 *Enter day* (e.g., 01<=dd<=31):

p7 *Enter hour* (e.g., 00<=HH<23):

p8 *Enter minute* (e.g., 00=MM<=59):

p9 *Build [version] will be installed on the following processors:*

[0MP | 5MP | 1FEP | 4BKUP ...]

with the following options:

Detected configuration is typical

[CRS master (and X-window client) [will be | remains] 0MP | 5MP]

[0MP | 5MP will be shutdown at the end of installation]

[CRS shadow (and X-window server) [will be | remains]0MP | 5MP]

[0MP | 5MP will be shutdown at the end of installation]

[CRS log files will be cleaned (reset) on: [5MP 0MP 1FEP 4BKUP]]

Proceed with Build [version] installation? (default: y)

An affirmative (y) response to this prompt results in the installation of the CRS application software with the appropriate constraints indicated. A negative (n) response results in the display of a Message dialog window with the text *User does not have permission to install packages pkgadd.*

NOTE: (6.2 continued)

OK terminates the installation.

If it is determined that the IP addresses in /etc/inet/hosts (preinstalled by the CRS software contractor at the factory) are not correct, then prompt *p10* is displayed.

p10 *Enter your CRS site ID (e.g., DLH or NRC1):*

Enter the correct local site ID. Entry of a valid site ID results in a comparison of a set of expected IP addresses and the actual IP addresses in /etc/inet/hosts on all accessible (online) CRS processors. Differences between expected and actual IP addresses are displayed and logged. Entry of no response or an invalid site ID results in prompt *p11*.

p11 *Display a list of all valid CRS site IDs? (default: y)*

An affirmative (y) response to this prompt will result in the display of a list of all valid CRS site IDs and associated site locations (city, state, region). The list is presented in "pages" via the UNIX utility "pg". The RETURN key or '+' displays the next page, the '-' key displays the previous page, and 'q' results in the display of prompt *p10*. A negative (n) response results in the display of prompt *p10*.

NOTE: 3. The master and shadow states that exist on the MPs at the time of installation are preserved, if possible. Otherwise, the installation scripts determine new MP states, based on the old MP states, whether software is being installed on them and/or they are online.

6.3 Post-Installation Caveats and Conventions Procedure

NOTE: 1. Software is installed to CRS processors in a predefined sequence (MPs, then FEPs). When the software has successfully been installed on a processor other than the installation MP, that processor is automatically shut down (and restarted). Because the FEPs share a single console (monitor and keyboard), **only one of the FEPs**, the one to which the console is physically connected through the switch box, **starts itself automatically**, following the shutdown. The startup sequence on an FEP that is not connected to a keyboard pauses while waiting for an F1 key to be struck at the keyboard. To complete the startup sequence for an FEP that is "stuck" waiting for the F1 key to be struck, **connect (via the switch box) the keyboard to the FEP, verify it is waiting (prompt message on the monitor), and strike the F1 key.**

NOTE:

(continued)

While the installation is in progress many messages are displayed in the auto_install log window on the console.

NOTE:

(6.3 continued)

Messages are of three types: ERROR, INFO and WARNING. Most of these messages are also written to the installation log file (/crs/install.log). All ERROR and WARNING messages from the installation log file are displayed in the auto_install log window at the completion of installation, in accordance with the following template:

Installation ERRORS

[ERROR messages from the installation log file | None]

[Refer to the installation procedures for further assistance]

Installation WARNING

[WARNING messages from the installation log file | None]

[Refer to section 6.4 for further assistance].

NOTE:

2. Inspection of the /crs/install.log file, after installation of the CRS Build 7.0 software, may result in the following message:

UX:lpadmin: WARNING: "/dev/term/a02s" is accessible by others.

This warning can safely be ignored.

1. Press **Enter** to continue. The system displays the following:

NOTE:

3. Shutting down the installation MP [0MP | 5MP] is an option. It is not necessary to shut down after the software has been installed on an FEP. A shut down is RECOMMENDED after CRS software has been installed on an MP to ensure that the installation MP [0MP | 5MP] and the other MP [0MP | 5MP] are functionally synchronized as CRS master and CRS shadow.

Continue [0MP | 5MP] shutdown? (Default: y)

2. Press **Enter**.

NOTE: 4. If there are no ERROR or WARNING messages (i.e., None), the reference to the installation procedures is not displayed. The auto_install log window displays until the operator responds to the prompt. An affirmative response results in the automatic shut down and restart of the installation MP.

A negative response results in the disappearance of the prompt and the auto_install log window unless the state (master or shadow) of the installation MP has been changed, in which case the prompt *shutting down to synchronize MP functionality* informs the operator that the installation MP will be shutdown regardless (shutdown occurs when the operator strikes any key).

ERROR and WARNING messages must be resolved before attempting to start the system!

6.4 Logging and the Installation Log File

NOTE: Results of the installation are logged into the auto_install window and into a log file (/crs/install.log). Logged messages are of three types: ERROR, INFO, and WARNING. INFO messages can be ignored. ERROR and WARNING messages are summarized in the auto_install window at the completion of the installation. They must be resolved before the system is started.

All logged messages have the following format:

date: script: type: [...] on PROC

where

date = DDD MMM dd hh:mm:ss LLL YYYY

DDD day of week abbreviation (e.g., Thu = Thursday)

MMM month of year abbreviation (e.g., Sep=September)

dd numeric day of month (1<dd<31)

hh hour of the day in military format (00<hh<23)

mm minute of the hour (00<mm<59)

ss second of the minute (00<ss<59)

LLL local standard time (e.g., PDT = Pacific Daylight Time)

YYYY calendar year

script = name of shell script in which message is generated

type = ERROR | INFO | WARNING

[...] = text describing a condition of the type indicated

PROC = processor (e.g., 0MP, 5MP, 3FEP, 4BKUP)
on which condition described by the text occurred

PART 7 – CRS APPLICATION STARTUP AND VERIFICATION PROCEDURES

7.1 Restore Current Site Digital Database Procedure

1. If you are not currently logged onto the CRS Main GUI, the CRS Security **Warning** message window displays. Click on the **Acknowledge** button and the CRS *Login* screen displays.
2. Login to the CRS main window as **admin**.

NOTE: The security warning window reappears after thirty (30) seconds if a user ID and password are not entered. If you are logged on the CRS Main GUI, skip to step 3. The system displays “*System is not operational. Perform “Start CRS” to start system.*” Click on OK.

3. Using the *Maintenance* pull-down menu, open a UNIX shell.
4. At the command prompt, enter the following series of commands:

```
OMP{admin} su - crs
(CRS password)
OMP{crs} cd /crs/data/DB_BKUP
OMP{crs} rcp 4BKUP:/crs/B64.tar.Z .
OMP{crs} uncompress ./B64.tar.Z
OMP{crs} tar xvf ./B64.tar
```
5. At the command prompt, type **Exit**.
6. Open a *Database Backup/Restore* window from the *Maintenance* pull-down menu.
7. Select the **Restore from Disk** option. Click the **Restore Directories** button. The *Restore Directories* window will open. Highlight and select the **B64** directory in the window. Click **OK**. The selected directory name will be copied into the directory name field of the *Database Backup/Restore* window.
8. Click the **Start Restore** button, then click the **OK** button in the warning pop-up window. When the restore is complete, press the **Enter** key in response to the on screen prompt. The *db_bkup* window will close.
9. Click on the **Exit this window** hot key.

7.2 Start and Verify Operation of Application Procedure

1. On a blank part of the desktop click and hold down the left mouse button to pop-up the **CRS_Utilities** menu.
2. Select the **XCRS_SITE Utility** and release the mouse button.

NOTE: 1. CRS Build 7.0 introduces the capability for the system to automatically mirror changes made to the digital database to the ASCII text database file. The changes are saved to an ASCII format in two ways: 1) Automatically at 00 UTC, or 2) On demand by the system operator. This procedure establishes a baseline mirrored site database.

3. Click on the **CREATE ASCII File** button.

NOTE: 2. After the initial creation of the ASCII text file using the Create ASCII File function, the system Help_About window will NOT display the correct information concerning which ASCII file is currently being used. Specifically, the DATABASE (ASCII) PATH will point to an old ASCII file. Users are warned that this will not change to the correct path and filename, until a complete Initialize System Configuration and Database procedure is executed using the XCRS_SITE utility.

4. Enter a descriptive filename using the convention *Filename.ASC* in the *Filename* field, and click the **Create ASCII file** button. The system creates a copy of the current site digital database as an ASCII text file.

5. Change directory to the */crs/data/SS* directory and copy the newly created ASCII file to 5MP using the following commands:

```
OMP{admin} cd /crs/data/SS
OMP{admin} rcp <Your_Filename>.ASC 5MP:/crs/data/SS
```

6. Place a formatted floppy diskette in the floppy drive.

7. Copy the newly created ASCII file to the floppy. Do NOT forget the “-t” option when using the “*mcopy*” command.

```
OMP{admin} mcopy -t <Your_Filename>.ASC a:
```

8. Remove the floppy from the drive, write protect the floppy, and store it in a safe place.

9. At the command prompt, type “*exit*” to close the window.

10. To start the CRS Build 7.1 Application from the *XCRS_SITE Site Configuration Developer* window, click on the **Start CRS System** button. The system displays:

The CRS system will be STARTED. Continue?

11. Click on **OK**. While waiting for the application to start, view the logging window and take note of any error messages.

12. When the application has started, exit the *XCRS_SITE Site Configuration Developer* window by clicking on: **Exit**.

13. If the *Status* window is not displayed, open it using the *System* pull-down menu. Click on the **System Status** menu selection.
14. If the *Alert Monitor* window is not displayed, open it using the *System* pull-down menu. Click on the **Alert Monitor** menu selection.
15. In the *Status* window, verify the proper start of the CRS application. Notify the CRS Program Office if the system does not start.
16. Verify the proper and normal operation of the system. Ensure voice products are being broadcast in all assigned transmitters.

- NOTE:**
3. An additional icon, labeled **VCC**, is visible in the **System Status - States** window. For **all sites** (except for the VCC prototype test sites at WFO Fort Worth, TX, WFO Glasgow, MT, and the WSH VCC Test System), the icon will be down **RED**.
 4. Once correct system operations have been verified, the site **will** perform a database backup in order to create a baseline recovery directory. Continue with step 17.
 5. Beginning with CRS Build 7.0, the Database Backup to Disc function copies the site database to both the 0MP and the 5MP /crs/data/DB_BKUP directory. This feature enables the site to recover from a 0MP failure while maintaining the same database. See the CRS Build 7.0 Release Notes for details.

17. Open a *Database Backup/Restore* window from the *Maintenance* pull-down menu.
18. Select the **Backup to Disk** option. Enter a "Directory Name " of your choice in the window.
19. Click the **Start Backup** button, then click the **OK** button in the warning pop-up window. When the backup is complete, press the **Enter** key in response to the on screen prompt. The *db_bkup* window closes. Click on the **Exit this window** hotkey.

7.3 Verify Correct Configuration of MP and FEP Switches and Configuration of Line Printer on 5MP

- NOTE:**
1. The Master Processor (MP) and Front End Processor (FEP) Switch functionality will be tested after performing this modification to ensure correct operation of the backup MP and FEP and associated hardware path.

1. Open the *Front End Processor Switch* window from the *Maintenance* pull-down menu.
2. Select **FEP1**, **Out**, and **Backup Yes** and click on the **Apply** hotkey.

3. Verify the 4BKUP switches online and 1FEP is switched offline. Verify proper operation of all transmitters associated with 1FEP in this mode. If the FEP backup functionality fails, perform troubleshooting and correct any problems before proceeding with this modification, otherwise perform another *Front-End Processor Switch* to bring 1FEP back online.
4. Open the *Front-End Processor Switch* window from the *Maintenance* pull-down menu.
5. Select **FEP1** and **In**, then click on the **Apply** hotkey.
6. Verify the 4BKUP switches offline and 1FEP is switched online. Verify proper operation of all transmitters associated with 1FEP in this mode. If the FEP restore functionality fails, perform troubleshooting and correct any problems before proceeding with this modification.
7. Open the *Master Processor Switch* window from the *Maintenance* pull-down menu. Select **5MP** and **Shadow Yes** and click on the **Apply** hotkey. Verify the 5MP switches online as the Master Processor and 0MP is switched online as the Shadow Processor.
8. Verify proper operation of all transmitters and normal operations in this mode. If the MP backup functionality fails, perform troubleshooting and correct any problems before proceeding with this modification.
9. Open the CRS Print Monitor control window by moving the cursor to a blank area of the CRS Main Display and click the left mouse button.
10. Verify the window title displays Print Monitor - 1x300 [**Ready**].
11. Should the correct printer be selected and its status shown as "**Ready**", continue with step 12. If the wrong printer is selected, or the status is not "**Ready**", proceed with the following:

Open a *Maintenance -> UNIX Shell* window.
Enter the following commands:

```
OMP{admin} su
```

Enter the root password when prompted.

Start the print monitor program using the following command string:

```
# /usr/X/bin/xprmon &
```

Click on the **Printer** button.

Highlight and select the **1x300** printer, then click the **OK** button.

If the printer status is *Disabled*, click the **Enable Queue** button. The status changes to *Print Monitor - 1x300[Ready]*. If the status is *[Unknown]*, click the **Enable Queue** button again to change the printer status to *[Down!]*, then click it again to verify the status is *[Ready]*.

Click on the **Dismiss** button to exit the *Print Monitor* control window. At the command prompt, type **exit** twice to close the open UNIX Shell window.

12. Click on the **Printer** button. Highlight and select the **Ix300**, then click the **OK** button. If the printer status is *Disabled* select the **Enable Queue** button. The status indicates: **Print Monitor - Ix300 [** Ready **]**.
13. Click on the **Dismiss** button to exit the *Print Monitor* control window.
14. Perform another Master Processor Switch to bring OMP back online as the Master Processor.
15. Open the *Master Processor Switch* window from the *Maintenance* pull-down menu.
16. Select **OMP** and **Shadow Yes**, then click on the **Apply** hotkey.
17. Verify the **OMP** switches online as the *Master Processor* and **5MP** switches online as the *Shadow Processor*.
18. Verify proper operation of all transmitters and normal operation in this mode. If the MP restore functionality fails, perform troubleshooting and correct any problems before proceeding with this modification.
19. Login as the normal site user, i.e., *oper* or *admin*, and continue normal site operations.

<p>NOTE: 2. The CRS Build 7.1, Main Processor Replacement, is delivered from the contractor with all MP system passwords set to the default nws2000. Immediately, upon completion of the CRS Build 7.1 installation, ALL sites WILL synchronize ALL system user passwords.</p>

PART 8 – PACK AND SHIP THE OLD 0MP AND 5MP TO NWS DEPOT PROCEDURES

8.1 Pack and Ship the Old 0MP and 5MP to NWS Depot Procedure

1. Retain the old keyboards and mice as on-site spares.
2. Pack and ship the old 0MP and 5MP ONLY in the special packing boxes available through the Consolidated Logistics System (CLS) from the NLSC under agency stock number (ASN): ASN-B440-SHIPPING BOX. The boxes are designed specifically to protect the old MPs during shipment. No shipping box substitutes are to be made! In the event the boxes are unavailable due to low stock, DO NOT SHIP until additional boxes are available.
3. Ship to NWS Depot.

Attachment B CRS Hardware Drawings

Figure A-1, NEC ProServa V+ (Rear View)

Figure A-2, NEC LS2400 (Rear View)

Figure A-3, NEC LS2400 (Side Panel)

Figure A-4, NEC LS2400 (PCI and ISA Slot Locations)

Figure A-5, CRS Main Processor Replacement Data Sheet Example

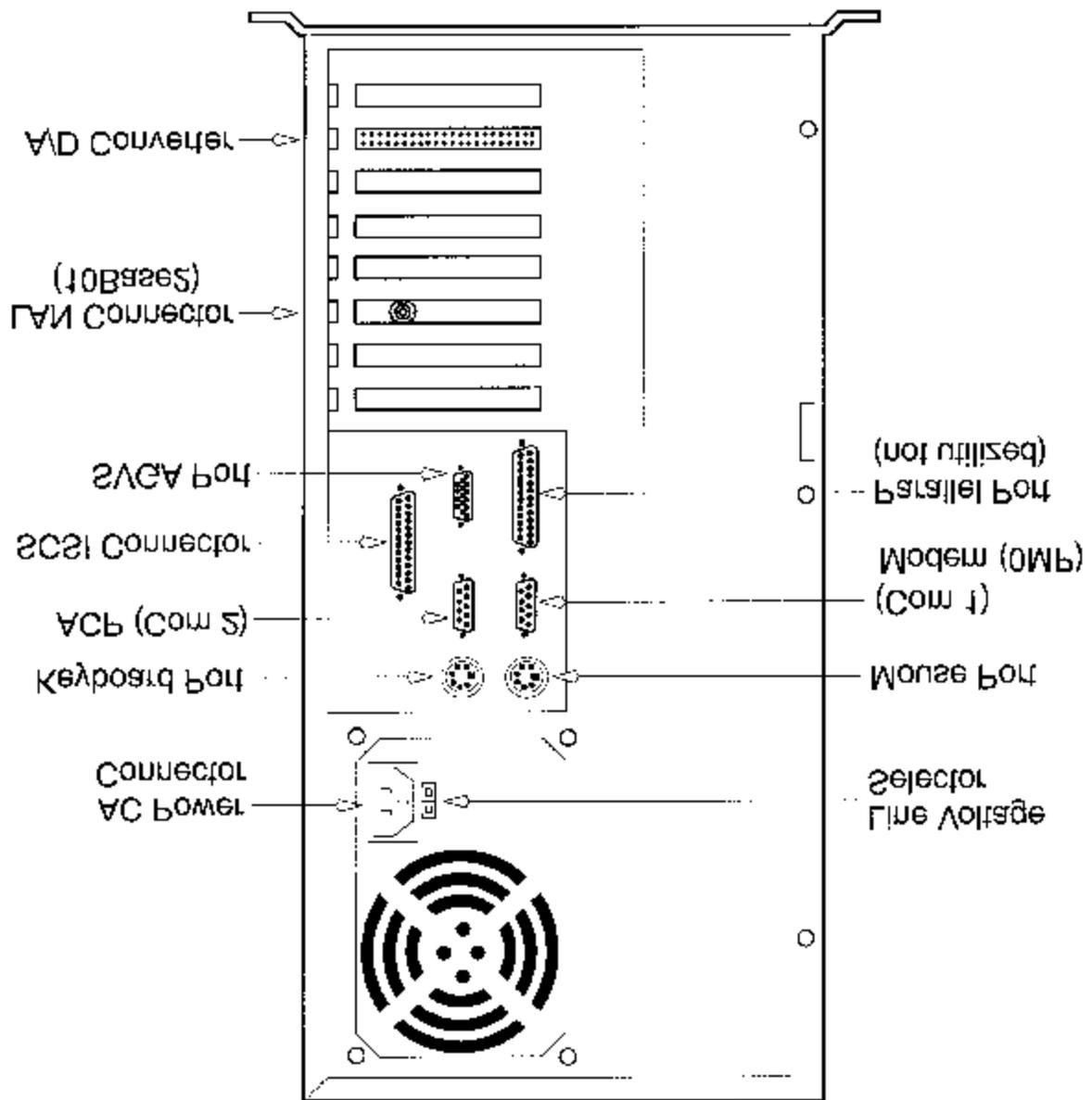
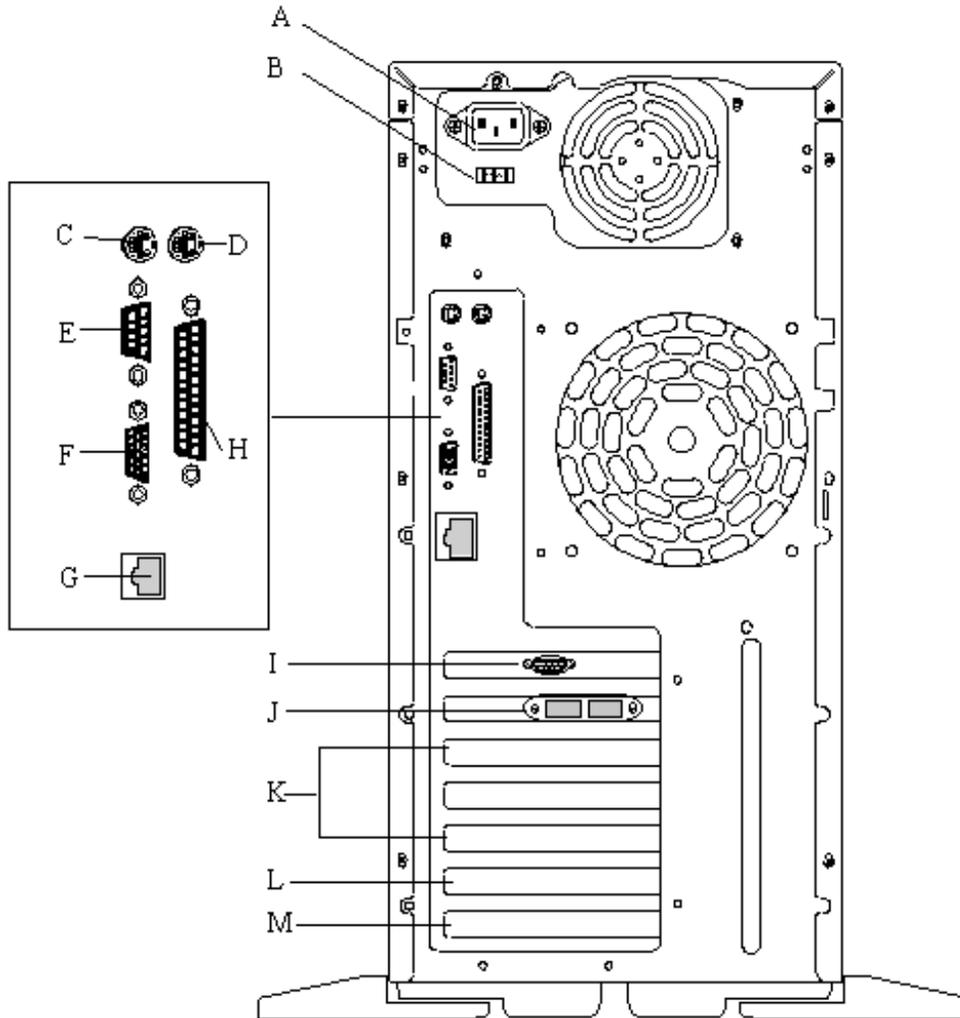


Figure A-1. NEC ProServa V+



- A. AC Input Power Connector
- B. Line Voltage Selector Switch (115V)
- C. Keyboard Port
- D. PS/2 Mouse Port
- E. Modem Port (Com1), 0MP only
- F. Video Monitor Port
- G. 10BaseT Network Connector*
- H. Parallel Port (not utilized)
- J. USB Connectors (not utilized) (drawing incorrect, connectors physically located above the ACP Port)
- I. ACP Port (Com2)
- K. PCI Slots (not utilized)
- L. Combo PCI/ISA Slots (not utilized)
- M. A/D Converter Card (ISA Slot)

10BaseT Network Connector*: Connects to the 10Base2-to-10BaseT Media Converter.

Figure A-2. NEC LS2400

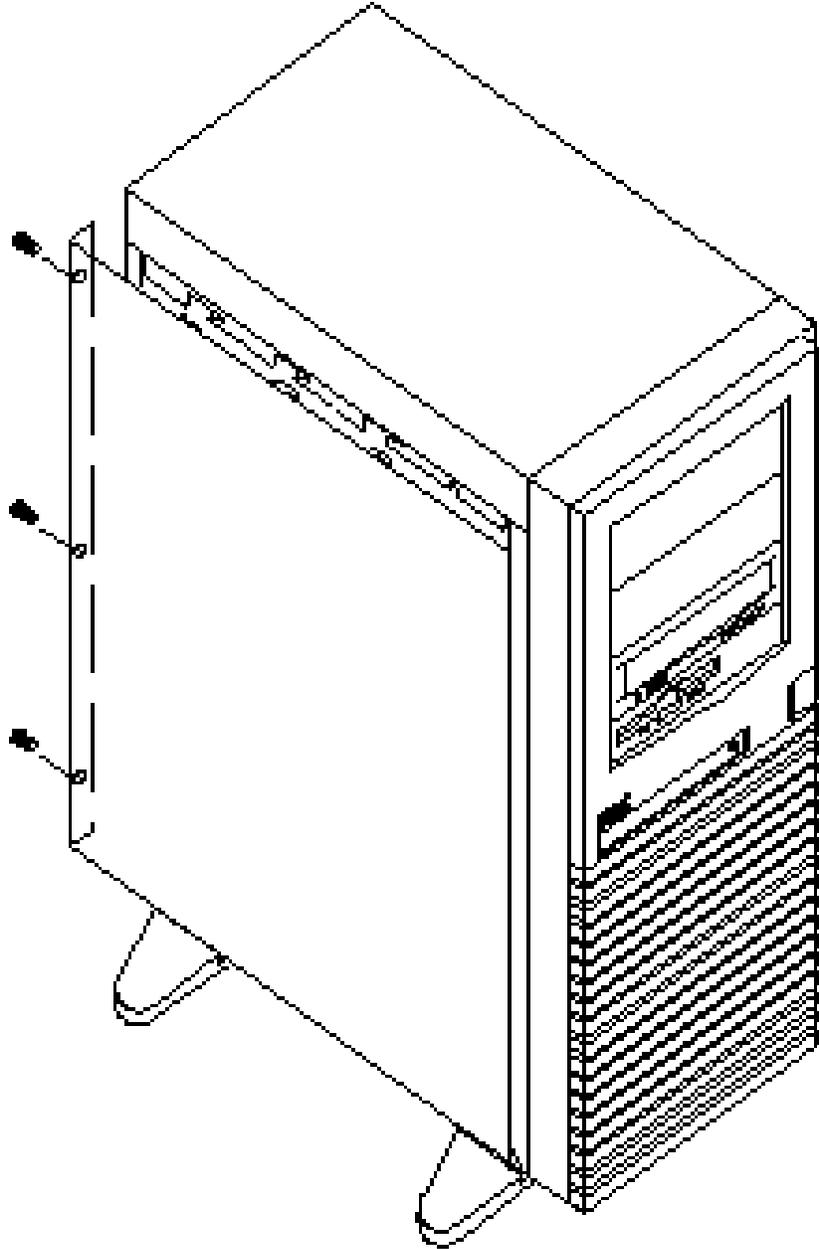
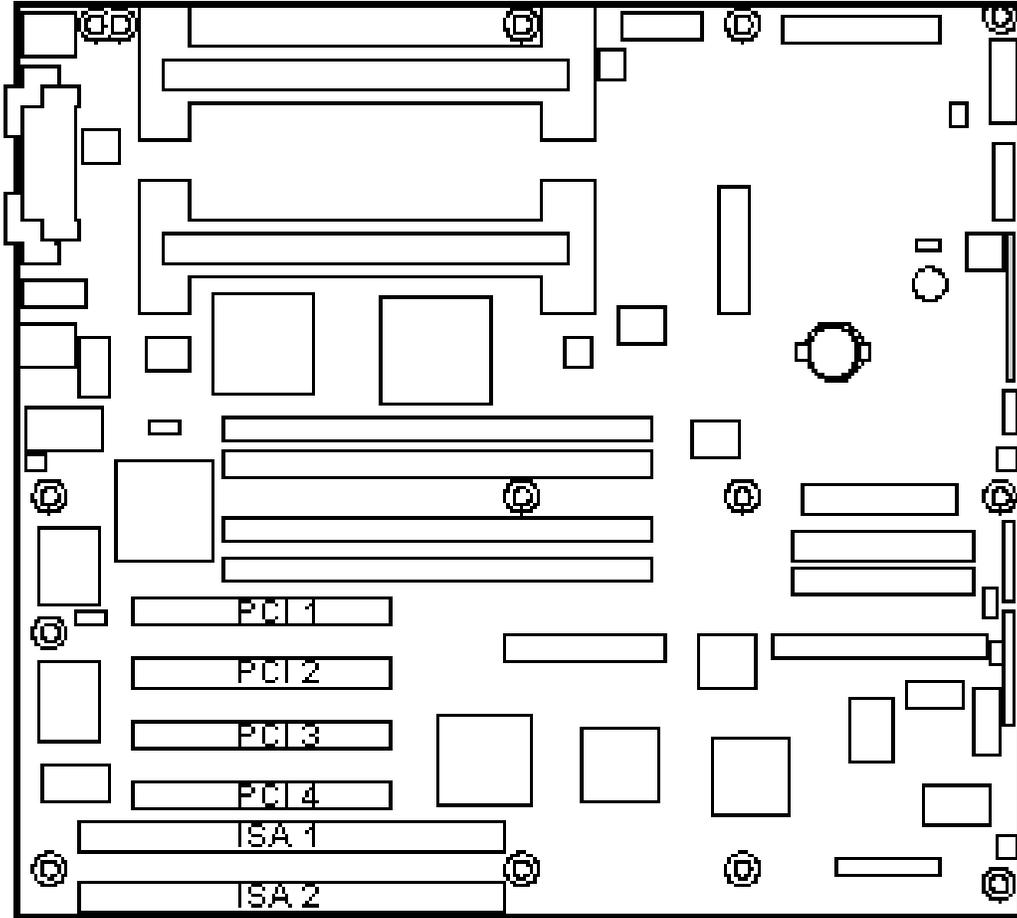


Figure A-3. 0MP and 5MP Side Panel



NOTE: The drawing is labeled incorrectly, follow the labeling order listed below.

- PCI4 Slot : Not Utilized
- PCI3 Slot: Not Utilized
- PCI2 Slot: Not Utilized
- PCI1 Slot: Not Utilized
- ISA2 Slot: Not Utilized
- ISA1 Slot: Analog/Digital Converter Card

Figure A-4. LS2400 PCI and ISA Slot Locations

Communications & Power Engineering Inc.
1046 Flynn Road
Camarillo, California 93012
805.389.7414
805.389.7419



CRS Main Processor Replacement Data Sheet

Site Location: Silver Spring, MD (NWSHQ)
Site Address: National Weather Service
Systems Evaluation Branch - W/OSO12
1325 East West Highway
Silver Spring, MD 20910
Attention: Terry Prajsner - Room 3400
801.713.0191 x: 166

Serial Numbers:

OMP Computer:	<u>M675400001</u>	Box 1 of 2
OMP Keyboard:	<u>G00166593M2331</u>	Box 1 of 2
OMP Mouse:	<u>LZ800900573</u>	Box 1 of 2
5MP Computer:	<u>M875400004</u>	Box 2 of 2
5MP Keyboard:	<u>G00166583M2331</u>	Box 2 of 2
5MP Mouse:	<u>LZ800957365</u>	Box 2 of 2

Misc.: UnixWare 7.1.1 (Installed on OMP & 5MP)
CRS Build 6.7 (CD-ROM, Box 1 of 2)
NEC 5800 Express LS2400 Express Builder CD-ROM (Box: 1 & 2)
10BaseT-10Base2 LAN Media Transceivers & Cables (Box 1 & 2)

NWS Receipt of Shipment:

Please date & sign, acknowledging that the shipment has been received by NWS. Fax the dated & signed form to 805.389.7419, Attention: Chuck Purcell

Date: _____
Print Name: _____
Signature: _____
Organization: _____

Figure A-5. CRS Main Processor Replacement Data Sheet Example

Attachment C

WS Form A-26 Sample

WS FORM A-26 (4/94)		U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE				Document Number G 49986					
General Information		1. Open Date 2 / 20 / 01	Time 0800	2. Initials JMM	3. Response Priority (check one) <input type="radio"/> Immediate <input type="radio"/> Low <input type="radio"/> Routine <input checked="" type="radio"/> Not Applicable		4. Close Date 2 / 20 / 01	Time 1400			
		5. Description Replace OMP and 5MP processors I.A.W. CRS Mod Note 59									
Equipment Information		6. Station ID PHI	7. Equipment Code CRSSA	8. Serial Number 001		9. TM M	10. AT M	11. How Mal. 999			
12. EQUIPMENT OPERATIONAL STATUS TIMES		a. Fully Operational <input type="checkbox"/>	b. Logistics Delay <input type="checkbox"/>	Partly Operational	c. All Other <input type="checkbox"/>	d. Logistics Delay <input type="checkbox"/>	Not Operational	e. All Other <input type="checkbox"/>			
13. Parts Failure Information							14. Work Load Information				
Block #	a. ASN		b. NSN		c. TM	d. AT	e. How Mal.	f. Qty.	g. Maint. Hrs.	Type	Staff Hrs.
1	B440-1A9		NotAvailableYet		M	M	999	2	3:00	a. Routine	
2										b. Non-Routine	
3										c. Travel	
4										d. Misc.	6:00
5										e. Overtime	
Miscellaneous Information		15. Maintenance Comments Replaced CRS OMP and 5MP processors with new processors I.A.W CRS Mod Note 59							16. Initials JMM		
17. SPECIAL PURPOSE REPORTING		a. Mod. No. 59	b. Mod./Act./Deact.Date 2/20/01	c.		d.		e.			
18. CONFIGURATION MGMT. REPORTING (use as directed)		ASN B440-1A9		Vendor Part No. (New Part)		Serial Number (Old Part) 6RSEKG9998		Serial Number (New Part)			
		B440-1A9				6RSEKG9999					

C-1

EHB-7
 Issuance 01-13
 08/24/01

Attachment C

Attachment D

Phase 2 MP Replacement Sites

Phase 2 MP Replacement Sites (Sorted Alphabetically by Region)

1. ALY	11. ABR	21. GLD	31. SGF	41. LIX	52. LKN
2. BTV	12. APX	22. GRB	32. UNR	42. LUB	53. MFR
3. BUF	13. ARX	23. GRR	33. ABQ	43. MAF	54. MSO
4. CAE	14. BIS	24. ILX	34. AMA	44. MFL	55. PDT
5. CAR	15. DDC	25. IWX	35. BRO	45. MLB	56. PIH
6. GYX	16. DLH	26. LBF	36. CRP	46. MOB	57. SLC
7. ILM	17. DVN	27. MQT	37. EPZ	47. SJT	58. STO
8. MHX	18. FGF	28. PAH	38. EYW	48. TBW	59. TFX
9. OKX	19. GID	29. PUB	39. HGX	49. BYZ	60. AFG
10. RNK	20. GJT	30. RIW	40. LCH	50. EKA	61. GUM
				51. FGZ	62. SLVM2