Power775
Power Cord & Flexible Power Cable Service Procedure
Last Modified 10/3/2011

CONTENTS

Figure List

Table List

1 GENERAL

1.1   Release / Revision History

File Name	Date	Description
"p775_line_cord.pdf"	9/30/2011	Initial Release

Table 1 Release / Revision History

- Do not make any unauthorized alterations to the document.
- Report any deviations from this procedure through the appropriate Product Engineering channels.
- Destroy entire document when no longer needed, recalled, or obsolete.

1.2   Required Documents

Document	PN	Location
Safety Notices http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/topic/p7hdx/G229-9054.pdf	Document #G229-9054	InfoCenter *

Table 2 Required Documents

*InfoCenter Website: http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/topic/p7ee2/p7ee2kickoff.htm

1.3   Related Documents

Document	PN	Location
Power775 BPC FSP Command Line Procedure		Appendix A

Table 3 Related Documents

*InfoCenter Website: http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/topic/p7ee2/p7ee2kickoff.htm

1.4   Acronyms / Abbreviations

Acronym/Abbreviation	Definition	Details
BPA	Bulk Power Assembly	BPE populated with BPCH, BPD, BPRs, & BPFs
BPCH	Bulk Power Controller Hub	Referred to as BPC on the HMC
BPD	Bulk Power Distributor	
BPE	Bulk Power Enclosure	
BPF	Bulk Power Fan	
CB	Circuit Breaker	Branch circuit wall CB or PDU CB is part of customer's facilities power infrastructure
CEC	Central Electronics Complex	Also referred to as the NODE-P7IH on the Rating Labels.
DCCA	Distributed Converter and Control Assembly	The Power Supply for CEC and DE are called the CEC DCCA and DE DCCA, respectively
DE	Disk Enclosure	
EDFI	Error Detection / Fault Isolation	Power/Thermal firmware diagnostic function
FRU	Field Replaceable Unit	
FSP	Flexible Service Processor	
GPFS	Global Parallel File System	IBM's disk file system utilizing software RAID
HDD	Hard Disk Drive	This also means hard drive
HMC	Hardware Maintenance Console	
HPC	High Performance Computing	
LED	Light Emitting Diode	
LIC	Licensed Internal Code	Specifically Power/Thermal firmware in this procedure's context
MTMS	Machine Type, Model, Serial #	
PCB	Printed Circuit Board	
PDU	Power Distribution Unit	Enterprise/raised-floor Power Distribution Unit / Remote Power Panel
RAID	Redundant Array of Inexpensive Disks	
SAS	Serial Attached SCSI	Protocol used for direct attached storage
SFP	Service Focal Point	Service application on the HMC
SSR	System Service Representative	IBM Field Service personnel
SSD	Solid State Drive	
UEPO	Unit Emergency Power Off	

Table 4 Acronyms / Abbreviations

2 OVERVIEW

This section is an overview only. Do not start the service procedure until Section 3 which contains the detailed steps.

2.1   Safety Notices

2.1.1   IMPORTANT CAUTIONS

Read "Safety_Notices_G229-9054.pdf " available from InfoCenter – see Section 1.2. The following are some of the safety cautions that specifically pertain to this Power775 service procedure.

CAUTION:
Energy hazard present. Shorting might result in system outage and possible physical injury. Remove all metallic jewelry before servicing. (C001)

CAUTION:
The doors and covers to the product are to be closed at all times except for service by trained service personnel. All covers must be replaced and doors locked at the conclusion of the service operation. (C013)

CAUTION:
This product might be equipped with a hard-wired power cable. Ensure that a licensed electrician performs the installation per the national electrical code. (C022)

CAUTION:
Ensure the building power circuit breakers are turned off BEFORE you connect the power cord or cords to the building power. (C023)

CAUTION:
Servicing of this product or unit is to be performed by trained service personnel only. (C032)

2.1.2 IMPORTANT DANGERS

The following are some of the safety dangers that specifically pertain to this Power775 service procedure.

DANGER:
Hazardous voltage present. Voltages present constitute a shock hazard, which can cause severe injury or death. (L004)

Figure 1 Hazardous Voltage, Current, or Energy

DANGER:
Risk of electric shock due to water or a water solution which is present in this product. Avoid working on or near energized equipment with wet hands or when spilled water is present. (L016)
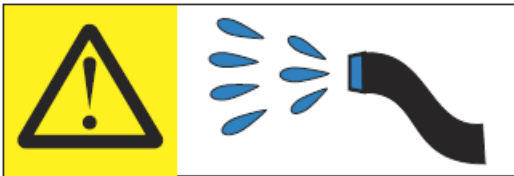
Figure 2   Electric Shock Due to Water Hazard

DANGER:
Arc Flash/Arc Blast hazard when disconnected with power on. Turn off power before disconnecting. (L015)

Figure 3 Arc Flash/Arc Blast Hazard

2.2   Attention – File System Risk Statement

The Global Parallel File System (GPFS) implementation of software RAID stripes data across all the Disk Enclosures in the cluster. **If a single Disk Enclosure is powered off while GPFS is active, the file system will go into panic and become unavailable.**

2.3   Power Cord & Flexible Power Cable Descriptions

Referring to the drawing in Figure 4 Power Cord/Flexible Power Cable Locations at Rear of Rack below, the four Power Cords/Flexible Power Cables (2 per BPE) provide input power to the BPAs with N+1 = 4 power cord redundancy (i.e., you can lose input power from one Power Cord/Flexible Power Cable and still support max load). Bottom BPA-A Power Cords/Flexible Power Cables locations are at U-P2-T01 and U-P2-T02 at the rear of the rack (where U is the MTMS 9125 F2C Serial #). Top BPA-B Power Cords/Flexible Power Cables locations are at U-P1-T01 and U-P1-T02 at the rear of the rack (where U is the MTMS 9125 F2C Serial #).

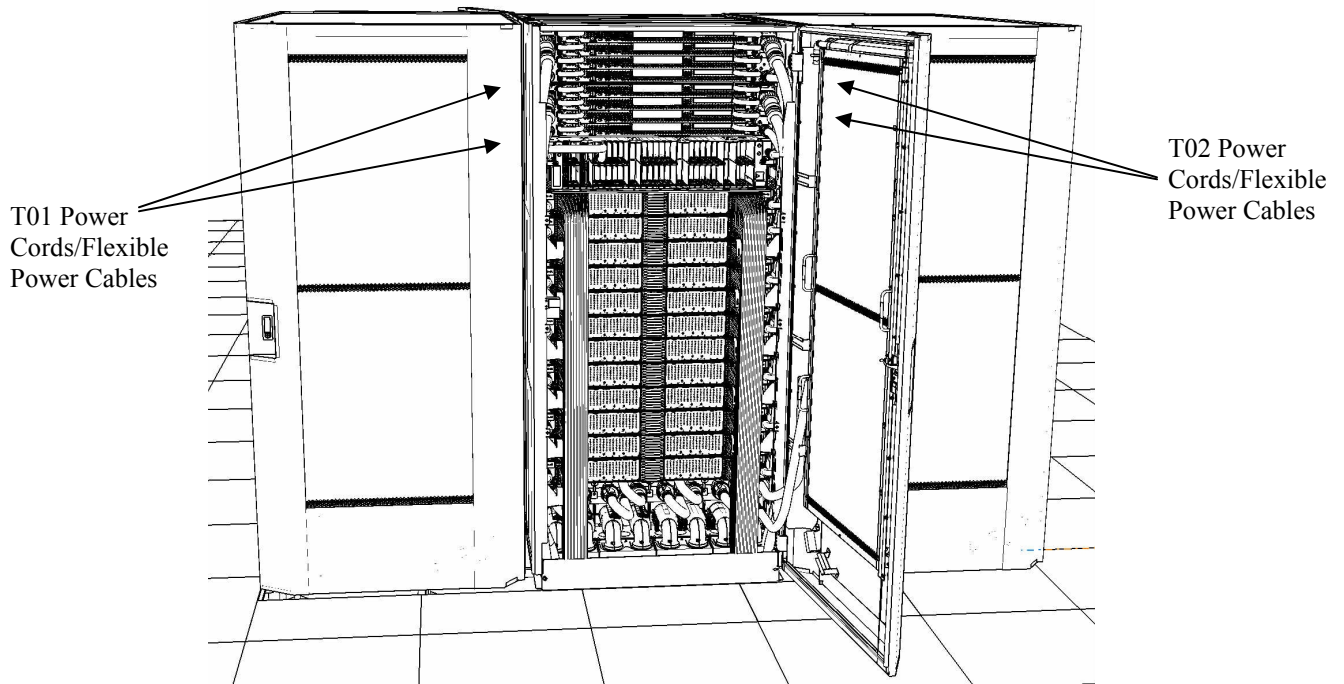**Figure 4 Power Cord/Flexible Power Cable Locations at Rear of Rack**

Figure 5 Power Cord/Flexible Power Cable & BPR Locations

Power Cord / Flexible Power Cable Location	Location Description	Connected BPRs
U-P2-T01	Rear of Rack Bottom BPA-A Left-hand-side	U-P2-E1 (BPR3)
		U-P2-E2 (BPR1)
		U-P2-E3 (BPR11)
U-P2-T02	Rear of Rack Bottom BPA-A Right-hand-side	U-P2-E4 (BPR9)
		U-P2-E5 (BPR7)
		U-P2-E6 (BPR5)
U-P1-T01	Rear of Rack Top BPA-B Left-hand-side	U-P1-E1 (BPR4)
		U-P1-E2 (BPR2)
		U-P1-E3 (BPR12)
U-P1-T02	Rear of Rack Top BPA-B Right-hand-side	U-P1-E4 (BPR10)
		U-P1-E5 (BPR8)
		U-P1-E6 (BPR6)

Table 5 Power Cord / Connected BPR Locations Summary

The Power Cords/Flexible Power Cables come in different configurations depending on the customer facility voltage. There are AC, DC, Customer-End Hubbell Plugs, and no Customer Plugs (i.e., Cut-End) options to support world-wide universal input voltages. The specific options include:

- AC Power Cord with 480Vac, 100A red 4-position Hubbell plug on the Customer End that is 6.3 m / 20.67 ft long (only 4.27 m / 14 ft of length actually extends outside the frame) as shown in Figure 6 Power Cord (with 480Vac red plug at Customer-End) below.

- AC Power Cord with 250Vac, 100A blue 4-position Hubbell plug on the Customer End that is 6.3 m / 20.67 ft long (only 4.27 m / 14 ft of length actually extends outside the frame) similar to as shown in Figure 6 below (except plug color is blue).

Figure 6 Power Cord (with 480Vac red plug at Customer-End)

- AC Flexible Power Cable with no plug at the Customer End (i.e., cut-end wire) that is 6.3 m / 20.67 ft long (only 4.27 m / 14 ft of length actually extends outside the frame) as shown in Figure 7 Flexible Power Cable (No Plug at Customer End / Cut-End) below.

- DC Flexible Power Cable with no plug at the Customer End (i.e., cut-end wire) that is 6.3 m / 20.67 ft long (only 4.27 m / 14 ft of length actually extends outside the frame) similar to as shown in Figure 7 below.

Figure 7 Flexible Power Cable (No Plug at Customer End / Cut-End)

2.4 Background

2.4.1 Power Cord/Flexible Power Cable Function

The Power Cord/Flexible Power Cable delivers input power to the system by connecting the facility voltage source to the BPAs.

2.5 Concurrency

One Power Cord/Flexible Power Cable is concurrently maintainable at a time.

2.6 Power Cord/Flexible Power Cable Weight

The Power Cords weigh 13.15 kilograms / 29 lbs each. The Flexible Power Cables weigh 11.34 kilograms / 25 lbs each.

2.7 Required SSRs and Roles

This service procedure requires one SSR.

2.8   Estimated Service Time

This procedure normally takes approximately 30 minutes.

2.9   P7IH Hand Tool Kit P/N 74Y0988 Required Tools

41V1059 Torque Tool (4mm Hex Driver – SJ torque)

3   SERVICE PROCEDURE

STOP – Do not proceed unless you have read "Safety_Notices_G229-9054.pdf" which is available from InfoCenter; see Section 1.2.

3.1   Customer System Administrator

The Customer System Administrator should be made aware of this service activity, but they don't normally have specific steps to perform.

3.2   Identify and Replace Power Cord/Flexible Power Cable ← SSR Task

1.   You should have downloaded this procedure from the InfoCenter Website listed here to ensure you are using the latest version and ensure no pages are missing by verifying the last section is titled "End of Document":

   http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/topic/p7ee2/p7ee2kickoff.htm

2.   If using printed copies of these procedures, then be sure to staple or paperclip the pages together to help keep them in the right page number sequence.

3.   An HMC Service Focal Point SRC FRU Call or direction from a higher level of support should have directed you to perform this procedure. The HMC can be accessed via the keyboard/display that resides in the management rack.

4.   Locate rack that requires service.

5.   If the rack could not be located in Step 4 above, then light the UEPO Service Identify LED by accessing the **HMC BPC-A ASM SIDE_A** Service Processor Command Line (Refer to 'Power775 BPC FSP Command Line Procedure' in Appendix A of this PDF and select **SIDE_A** on the **Launch ASM Interface** window) and enter the following at the command prompt (IMPORTANT: DOUBLE-CHECK THE COMMAND IS TYPED IN EXACTLY CORRECT BEFORE PRESSING ENTER BECAUSE EVEN A SINGLE INCORRECT CHARACTER COULD RESULT IN SEVERE UNINTENDED SYSTEM DISRUPTION!!):
```
bpccmd -c 28aa0001ff01
```

```
Expect 00aa00 returned which means the command executed properly
and reported successful "UEPO Service Identify LED On" status.
```

If something different is returned, then contact the next level of support. For reference, the returned "rrssdd" format hexadecimal characters can be translated as follows:

"rr" Return Code Definitions:
00 = Command executed properly
21 = Cage Not Present / Configured
22 = FRU Not Present / Configured
27 = Location code error
4A = Error in sent command
4B = Invalid State
95 = BPCH LIC Detected Error
96 = Mail-boxing error

"ss" Sequence Number:

aa = Arbitrary and unimportant

"dd" Return Data Definitions
   00 = UEPO Service Identify LED turned on successfully. It is OK to continue with the service procedure

6.   The UEPO Panel Identify Amber "!" LED should be blinking. Verify the rack MTMS (Machine Type Model Serial number) are as expected. The rack level MTMS is located on the face of the UEPO Panel (see Figure 8 UEPO Panel Location on Front Door below).   The Green circular lightning-bolt LED indicates that the UEPO loop is complete and it should remain lit throughout the procedure.

Figure 8 UEPO Panel Location on Front Door

Figure 9 Power Cord/Flexible Power Cable & BPR Locations

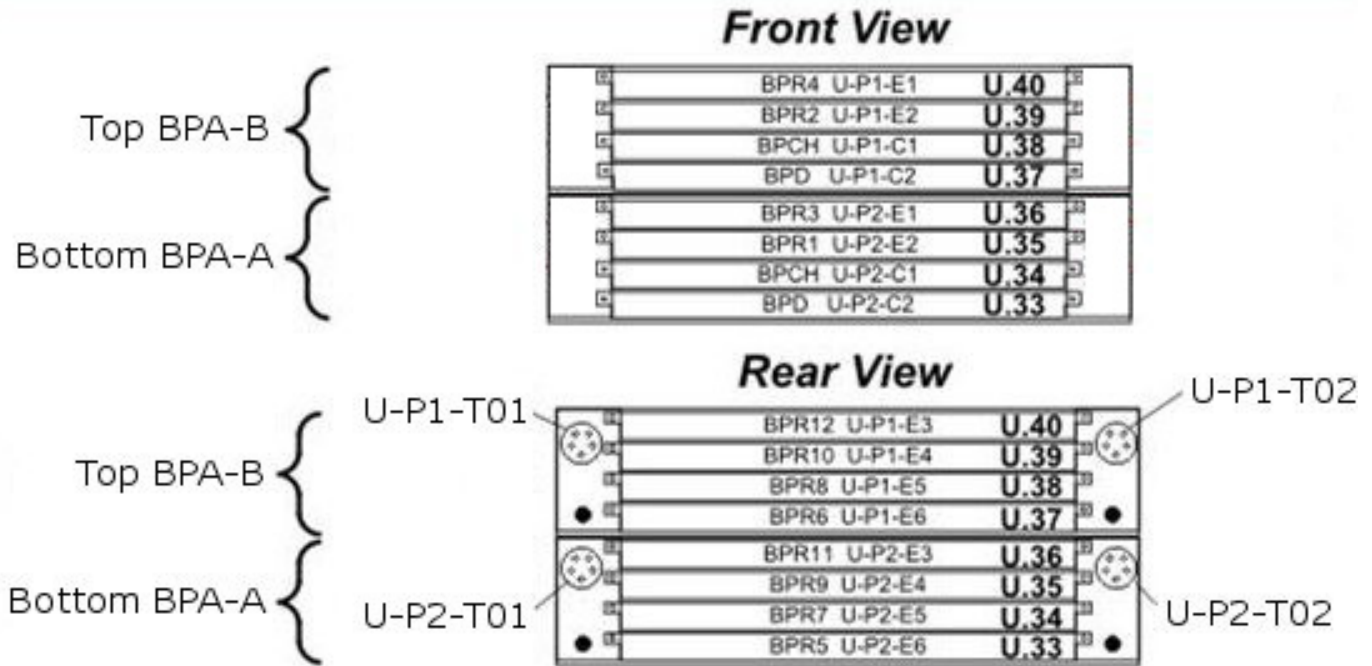| Power Cord / Flexible Power Cable Location	Location Description	Connected BPRs
U-P2-T01	Rear of Rack Bottom BPA-A Left-hand-side	U-P2-E1 (BPR3)
		U-P2-E2 (BPR1)
		U-P2-E3 (BPR11)
U-P2-T02	Rear of Rack Bottom BPA-A Right-hand-side	U-P2-E4 (BPR9)
		U-P2-E5 (BPR7)
		U-P2-E6 (BPR5)
U-P1-T01	Rear of Rack Top BPA-B Left-hand-side	U-P1-E1 (BPR4)
		U-P1-E2 (BPR2)
		U-P1-E3 (BPR12)
U-P1-T02	Rear of Rack Top BPA-B Right-hand-side	U-P1-E4 (BPR10)
		U-P1-E5 (BPR8)
		U-P1-E6 (BPR6)

Table 6 Power Cord / Connected BPR Locations Summary

7. Make sure the Power Cord/Flexible Power Cable is redundant by sending one BPA and three BPR redundancy commands to the appropriate BPCH FSP (reference Figure 9 and Table 6 above to help determine the correct Power Cord location). Access the appropriate HMC BPC ASM Service Processor Command line (Refer to 'Power775 BPC FSP Command Line Procedure' in Appendix A of this PDF and either ensure **ASM SIDE_A** is active per Step 12 or open a new **ASM SIDE_B** session by selecting **SIDE_B** on the **Launch ASM Interface** window) and enter the following at the command prompt one at a time (IMPORTANT: DOUBLE-CHECK THE COMMAND IS TYPED IN EXACTLY CORRECT BEFORE PRESSING ENTER BECAUSE EVEN A SINGLE INCORRECT CHARACTER COULD RESULT IN SEVERE UNINTENDED SYSTEM DISRUPTION!!):

If replacing the <u>Bottom BPA-A U-P2-T01</u> Cord/Cable execute these from the <u>HMC BPC-A ASM SIDE A</u> Service Processor Command line:

```
bpccmd -c 9baa0000ff01
bpccmd -c 9baa0000ff84
bpccmd -c 9baa0000ff85
bpccmd -c 9baa0000ff86
```

If replacing the <u>Bottom BPA-A U-P2-T02</u> Cord/Cable execute these from the <u>HMC BPC-A ASM SIDE A</u> Service Processor Command line:

```
bpccmd -c 9baa0000ff01
bpccmd -c 9baa0000ff87
bpccmd -c 9baa0000ff88
bpccmd -c 9baa0000ff89
```

If replacing the <u>Top BPA-B U-P1-T01</u> Cord/Cable execute these from the <u>HMC BPC-B ASM SIDE B</u> Service Processor Command line:

```
bpccmd -c 9baa0000ff01
bpccmd -c 9baa0000ffC4
bpccmd -c 9baa0000ffC5
bpccmd -c 9baa0000ffC6
```

If replacing the <u>Top BPA-B U-P1-T02</u> Cord/Cable execute these from the <u>HMC BPC-B ASM SIDE B</u> Service Processor Command line:

```
bpccmd -c 9baa0000ff01
bpccmd -c 9baa0000ffC7
bpccmd -c 9baa0000ffC8
bpccmd -c 9baa0000ffC9
```

Expect 00aa00 or 00aa03 returned for each separate command which means the command executed properly and reported successful "Redundant BPA/Power Cord/BPR" status.

If something different is returned, then contact the next level of support. For reference, the returned "rrssdd" format hexadecimal characters can be translated as follows:

"rr" Return Code Definitions:
00 = Command executed properly
21 = Cage Not Present / Configured
22 = FRU Not Present / Configured.
27 = Location code error
43 = Not valid for this FRU
96 = Mail-boxing error

"ss" Sequence Number:

aa = Arbitrary and unimportant

"dd" Return Data Definitions:
00 = Redundant status. It is OK to replace this Power Cord/Flexible Power Cable and continue with Step 8
01 = Non-redundant status. It is NOT OK to replace this Power Cord/Flexible Power Cable. Please contact next level of support
03 = Redundant Power Cord, but BPA is redundant only if you enter degraded processor frequency Low Power Mode. Since we only require a redundant Power Cord for this procedure, it is OK to replace the Power Cord/Flexible Power Cable without entering Low Power Mode and continue with Step 8

8. Issue three BPR deactivate commands by accessing the appropriate HMC BPC ASM Service Processor Command line (Refer to 'Power775 BPC FSP Command Line Procedure' in Appendix A of this PDF and ensure **ASM SIDE_A** or **SIDE_B** is active per Step 12 as required below) and entering the following at the command prompt one at a time (IMPORTANT: DOUBLE-CHECK THE COMMAND IS TYPED IN EXACTLY CORRECT BEFORE PRESSING ENTER BECAUSE EVEN A SINGLE INCORRECT CHARACTER COULD RESULT IN SEVERE UNINTENDED SYSTEM DISRUPTION!!):

If replacing the <u>Bottom BPA-A U-P2-T01</u> Cord/Cable execute these from the <u>HMC BPC-A ASM SIDE_A</u> Service Processor Command Line:
```
bpccmd -c 10aa0000ff84
bpccmd -c 10aa0000ff85
bpccmd -c 10aa0000ff86
```

If replacing the <u>Bottom BPA-A U-P2-T02</u> Cord/Cable execute these from the <u>HMC BPC-A ASM SIDE A</u> Service Processor Command Line:
```
bpccmd -c 10aa0000ff87
bpccmd -c 10aa0000ff88
bpccmd -c 10aa0000ff89
```

If replacing the <u>Top BPA-B U-P1-T01</u> Cord/Cable execute these

from the <u>HMC BPC-B ASM SIDE B</u> Service Processor Command Line:

```
bpccmd -c 10aa0000ffC4
bpccmd -c 10aa0000ffC5
bpccmd -c 10aa0000ffC6
```

If replacing the <u>Top BPA-B U-P1-T02</u> Cord/Cable execute these

from the <u>HMC BPC-B ASM SIDE B</u> Service Processor Command Line:

```
bpccmd -c 10aa0000ffC7
bpccmd -c 10aa0000ffC8
bpccmd -c 10aa0000ffC9
```

```
Expect 00aa00 returned for each separate command which means the
command executed properly and confirmed successful "Deactivated
BPR" status.
```

If something different is returned, then contact the next level of support. For reference, the returned "rrssdd" format hexadecimal characters can be translated as follows:

"rr" Return Code Definitions:
00 = Command executed properly
21 = Cage Not Present / Configured
22 = FRU Not Present / Configured
27 = Location code error
4A = Error in sent command
4B = Invalid State
95 = BPCH LIC Detected Error
96 = Mail-boxing error

"ss" Sequence Number:
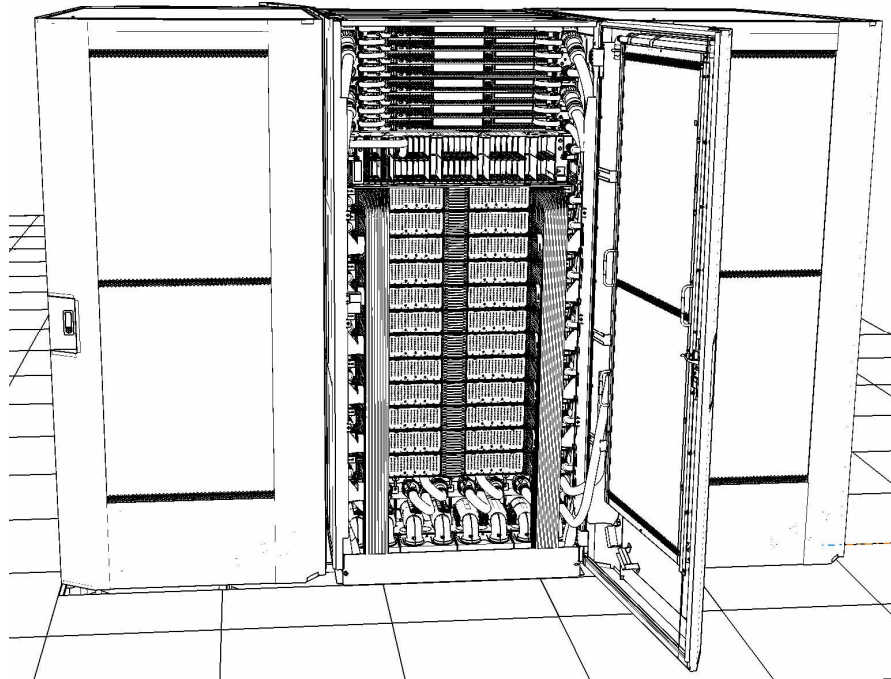
aa = Arbitrary and unimportant

"dd" Return Data Definitions:
  00 = Deactivate successful. It is OK to replace the Power Cord/Flexible Power Cable
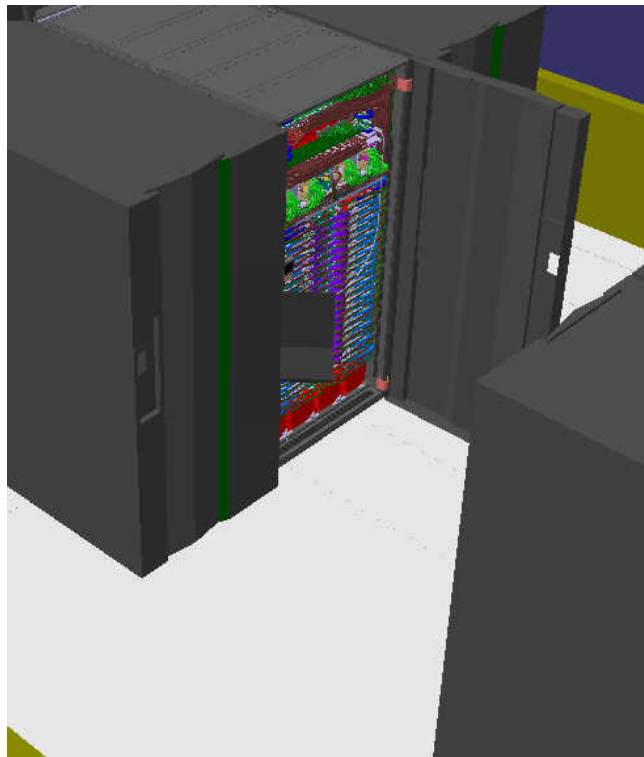
9. Open the rear door as shown in Figure 10 Rack Rear Door Open below.

Figure 10 Rack Rear Door Open

10. If replacing either T01 line cord, open the front door as shown in Figure 11 below.

Figure 11 Front Door Open

SAFETY NOTICE - Refer to Section 2.1.1 for cautions and Figure 12, Figure 13, & Figure 14 below for safety dangers before beginning the next step.
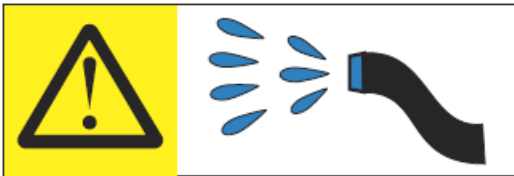
DANGER:
Hazardous voltage present. Voltages present constitute a shock hazard, which can cause severe injury or death. (L004)

Figure 12 Hazardous Voltage, Current, or Energy

DANGER:
Risk of electric shock due to water or a water solution which is present in this product. Avoid working on or near energized equipment with wet hands or when spilled water is present. (L016)

Figure 13   Electric Shock Due to Water Hazard

DANGER:
Arc Flash/Arc Blast hazard when disconnected with power on. Turn off power before disconnecting. (L015)

Figure 14 Arc Flash/Arc Blast Hazard

11. If changing BPA-A bottom-left U-P2-T01 Power Cord / Flexible Power Cable, ensure that the "BPR Good" left-LEDs are not lit for U-P2-E1 (BPR-3), U-P2-E2 (BPR-1), and U-P2-E3 (BPR-11). Reference Figure 15, Figure 16, Figure 17, Figure 18, and Table 7 below.

12. If changing BPA-A bottom-right U-P2-T02 Power Cord / Flexible Power Cable, ensure that the "BPR Good" left-LEDs are not lit for U-P2-E4 (BPR-9), U-P2-E5 (BPR-7), and U-P2-E6 (BPR-5). Reference Figure 15, Figure 16, Figure 17, Figure 18, and Table 7 below.

13. If changing BPA-B bottom-left U-P1-T01 Power Cord / Flexible Power Cable, ensure that the "BPR Good" left-LEDs are not lit for U-P1-E1 (BPR-4), U-P1-E2 (BPR-2), and U-P1-E3 (BPR-12). Reference Figure 15, Figure 16, Figure 17, Figure 18, and Table 7 below.

14. If changing BPA-B bottom-right U-P1-T02 Power Cord / Flexible Power Cable, ensure that the "BPR Good" left-LEDs are not lit for U-P1-E4 (BPR-10), U-P1-E5 (BPR-8), and U-P1-E6 (BPR-6). Reference Figure 15, Figure 16, Figure 17, Figure 18, and Table 7 below.

Figure 15 Front BPR Locations
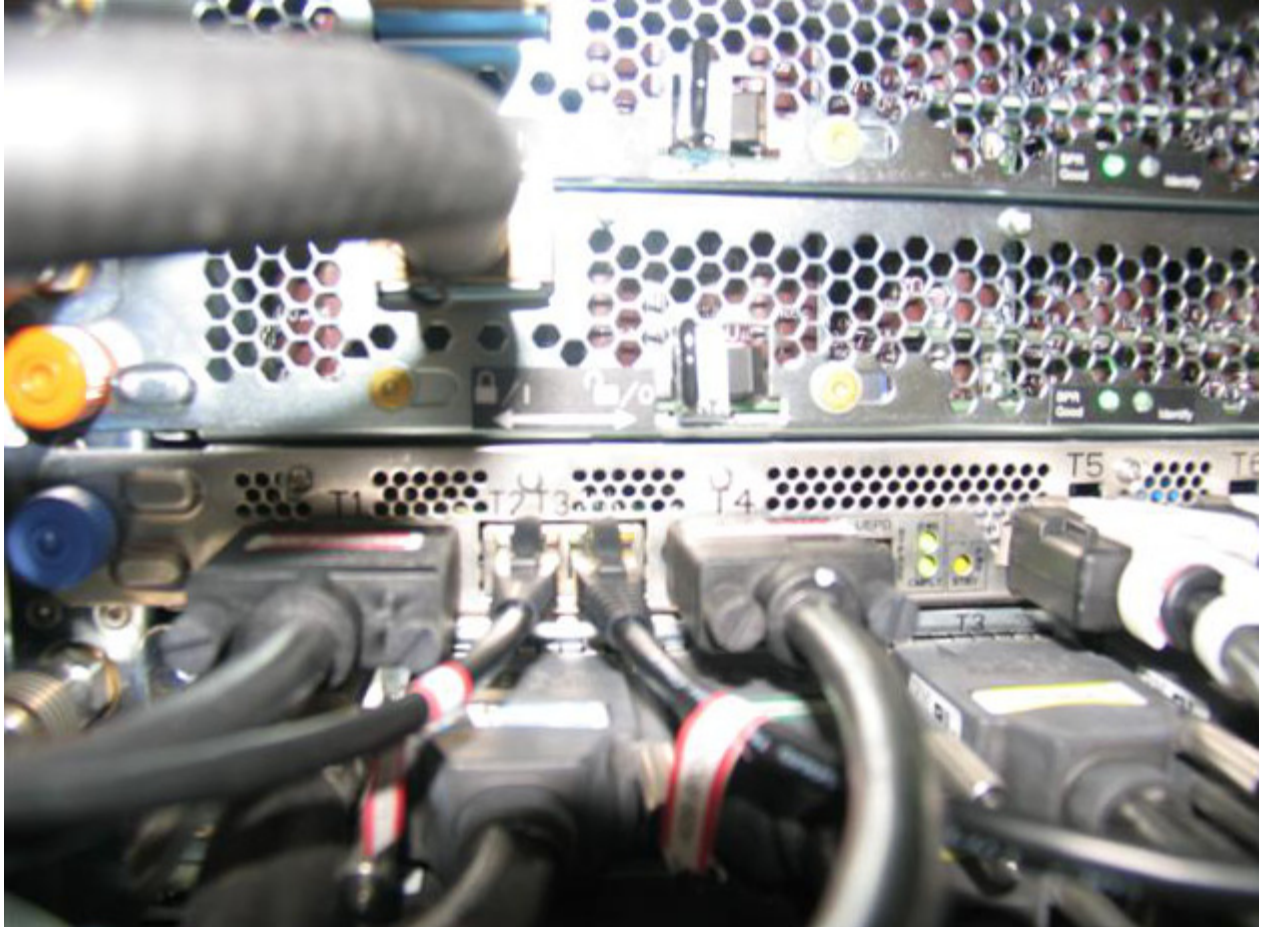
Figure 16 "BPR Good" left-LED Location

Figure 17 BPR Good LEDs & Power Cords/Flexible Power Cables

Figure 18 Power Cord/Flexible Power Cable & BPR Locations

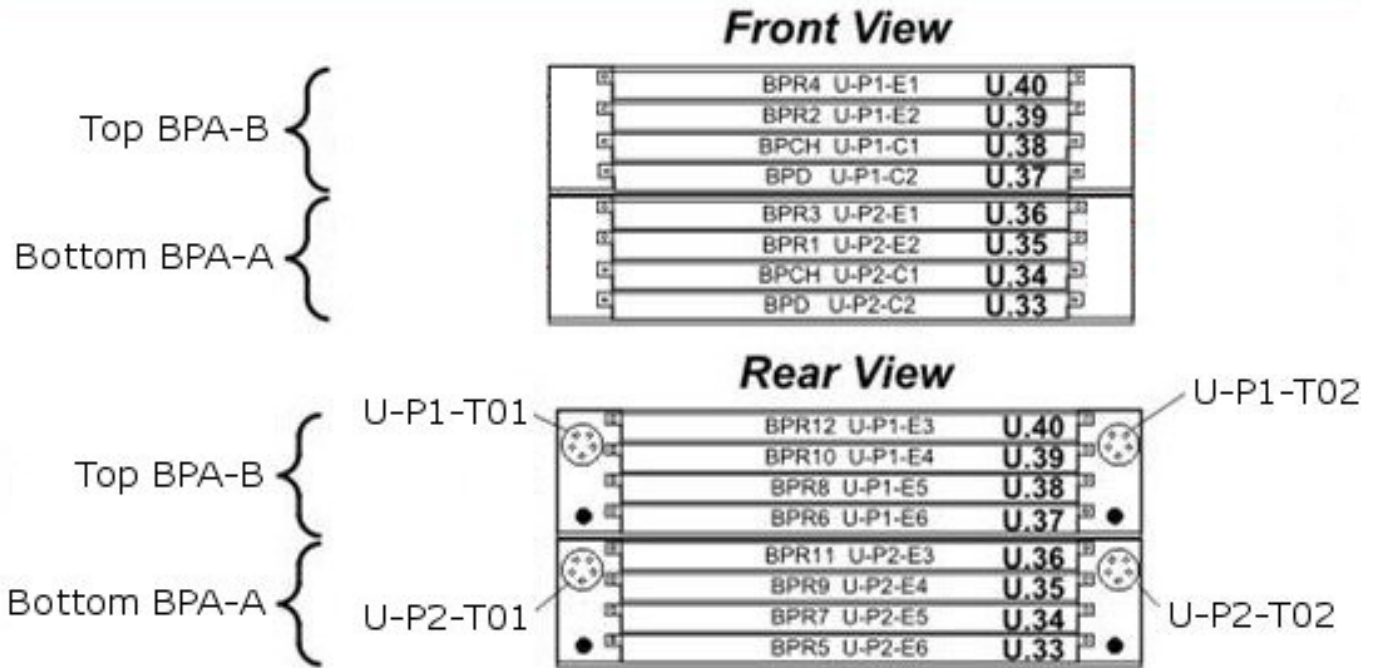| Power Cord / Flexible Power Cable Location	Location Description	Connected BPRs
U-P2-T01	Rear of Rack Bottom BPA-A Left-hand-side	U-P2-E1 (BPR3)
		U-P2-E2 (BPR1)
		U-P2-E3 (BPR11)
U-P2-T02	Rear of Rack Bottom BPA-A Right-hand-side	U-P2-E4 (BPR9)
		U-P2-E5 (BPR7)
		U-P2-E6 (BPR5)
U-P1-T01	Rear of Rack Top BPA-B Left-hand-side	U-P1-E1 (BPR4)
		U-P1-E2 (BPR2)
		U-P1-E3 (BPR12)
U-P1-T02	Rear of Rack Top BPA-B Right-hand-side	U-P1-E4 (BPR10)
		U-P1-E5 (BPR8)
		U-P1-E6 (BPR6)

Table 7 Power Cord / Connected BPR Locations Summary

15. Turn off the BPR slide-switches on all 3 BPRs that just had their "BPR Good" LEDs turned off.

16. Have the customer or approved delegate turn off the branch circuit wall CB for suspect defective Power Cord/Flexible Power Cable. For the Power Cord/Flexible Power Cable on that branch circuit, ensure the LED below the corresponding BPE T01 or T02 input connector label is no longer lit as shown in Figure 19 below. Note that you may need to use the ladder or step stool to see the Power Cord LEDs because sometimes they are blocked from sight due to being just above the rear retention brackets.

Figure 19 Power Cord/Flexible Power Cable LED shown not lit due to wall CB turned off

17. Disconnect only one Power Cord/Flexible Power Cable from the correct customer-end branch circuit whip Hubbell connector or request the customer have their certified electrician disconnect the cut-end Flexible Power Cable from the associated junction box, PDU, or pendant splice.

18. Disconnect the other end of only one Power Cord/Flexible Power Cable from the correct U-P2-T01, U-P2-T02, U-P1-T01, or U-P1-T02 (where U is the MTMS 9125 F2C Serial #) BPE input connector by rotating the connector counter-clockwise until it stops and then unplugging the cord/cable connector (reference Figure 20 below)

19. Unfasten any required Soft Cable Ties/velcro and remove the suspect defective Power Cord/Flexible Power Cable from the rack.

20. Ensure location labels are present on each plug of the replacement Power Cord/Flexible Power Cable. If they are not, then label the plugs similar to the suspect defective cable just removed (if anything).

21. Connect the replacement Power Cord/Flexible Power Cable to the appropriate T01 or T02 connector by lining up the inner keying tabs, aligning the plug collar pin, and rotating the plug collar clock-wise until locked (reference Figure 20 below). If having difficulty and someone else is available, it can help to have them hold the bulk wire and take the weight off the plug while you align and plug. Once plugged and latched, pull on the connector to ensure it is not loose -- which may indicate the connector is not fully seated.
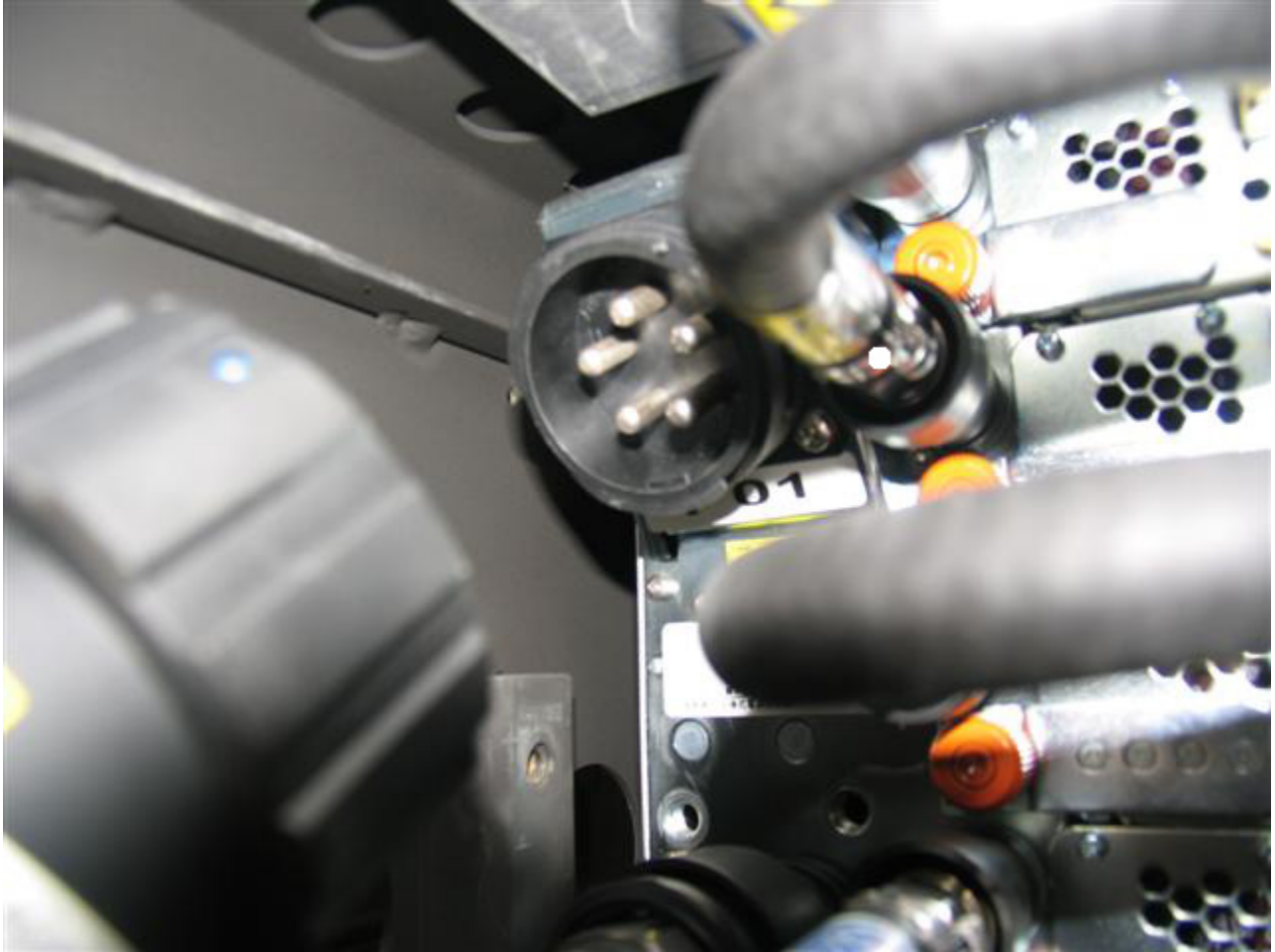
Figure 20 T01 Power Cord/Flexible Power Cable Service

SAFETY NOTICE - Refer to Section 2.1.1 before beginning Step 22.

CAUTION:
This product might be equipped with a hard-wired power cable. Ensure that a licensed electrician performs the installation per the national electrical code. (C022)

CAUTION:
Ensure the building power circuit breakers are turned off BEFORE you connect the power cord or cords to the building power. (C023)

22. Connect other end of replacement Power Cord/Flexible Power Cable to electrical branch circuit by connecting the customer-end connector or requesting the customer electrician connects a cut-end line cord to a junction box, PDU, or pendant splice.

23. Have the customer or approved delegate turn back on the branch circuit wall CB for the replacement Power Cord/Flexible Power Cable that was turned off earlier. Note that you may need to use the ladder or step stool to see the Power Cord LEDs because sometimes they are blocked from sight due to being just above the rear retention brackets.

24. Neatly route the new Power Cord/Flexible Power Cable in the frame member trough and resecure the Cable Ties/velcro strips neatly inside the frame.

25. Turn on the BPR slide-switches on all 3 BPRs that do not have their "BPR Good" LEDs lit and then those same LEDs should start blinking.

26. If replacing either BPA-A Power Cord/Flexible Power Cable, reactivate A-side BPRs by sending a BPA-A activate command to the BPCH-A FSP. To do this access the **HMC BPC-A ASM SIDE_A** Service Processor Command Line (Refer to 'Power775 BPC FSP Command Line Procedure' in Appendix A of this PDF and ensure **ASM SIDE_A** is active per Step 12) and enter the following at the command prompt (IMPORTANT: DOUBLE-CHECK THE COMMAND IS TYPED IN EXACTLY CORRECT BEFORE PRESSING ENTER BECAUSE EVEN A SINGLE INCORRECT CHARACTER COULD RESULT IN SEVERE UNINTENDED SYSTEM DISRUPTION!!):

```
bpccmd -c 11aa0000ff01
```

```
Expect 00aa00 returned which means the command executed properly
and reported successful "Activated BPA-A/Cross-Communications
Cable" status.
```

If something different is returned, then contact the next level of support. For reference, the returned "rrssdd" format hexadecimal characters can be translated as follows:

"rr" Return Code Definitions:
00 = Command executed properly
21 = Cage Not Present / Configured
22 = FRU Not Present / Configured.
27 = Location code error
4A = Error in sent command
4B = Invalid State
95 = BPCH LIC Detected Error
96 = Mail-boxing error

"ss" Sequence Number:

aa = Arbitrary and unimportant

"dd" Return Data Definitions
  00 = BPA-A activate successful & associated SRCs cleared. It is OK to continue the service action

27. If replacing either BPA-B Power Cord/Flexible Power Cable, reactivate B-side BPRs by sending a BPA-B activate command to the BPCH-B FSP. To do this access the **HMC BPC-B ASM SIDE_B** Service Processor Command Line (Refer to 'Power775 BPC FSP Command Line Procedure' in Appendix A of this PDF and ensure **ASM SIDE_B** is active per Step 12) and enter the following at the command prompt (IMPORTANT: DOUBLE-CHECK THE COMMAND IS TYPED IN EXACTLY CORRECT BEFORE PRESSING ENTER BECAUSE EVEN A SINGLE INCORRECT CHARACTER COULD RESULT IN SEVERE UNINTENDED SYSTEM DISRUPTION!!):

```
bpccmd -c 11aa0000ff01
```

```
Expect 00aa00 returned which means the command executed properly
and reported successful "Activated BPA-B/Cross-Communications
Cable" status.
```

If something different is returned, then contact the next level of support. For reference, the returned "rrssdd" format hexadecimal characters can be translated as follows:

"rr" Return Code Definitions:
00 = Command executed properly
21 = Cage Not Present / Configured
22 = FRU Not Present / Configured.
27 = Location code error
4A = Error in sent command
4B = Invalid State
95 = BPCH LIC Detected Error
96 = Mail-boxing error

"ss" Sequence Number:

aa = Arbitrary and unimportant

"dd" Return Data Definitions
00 = BPA-B activate successful & associated SRCs cleared. It is OK to continue the service action

28. Wait 3 minutes and then ensure all the BPRs have their "BPR Good" LEDs on solid.

29. Turn off the UEPO Service Identify LED by accessing the **HMC BPC-A ASM SIDE_A** Service Processor Command Line (Refer to 'Power775 BPC FSP Command Line Procedure' in Appendix A of this PDF and ensure **ASM SIDE_A** is active per Step 12) and enter the following at the command prompt (IMPORTANT: DOUBLE-CHECK THE COMMAND IS TYPED IN EXACTLY CORRECT BEFORE PRESSING ENTER BECAUSE EVEN A SINGLE INCORRECT CHARACTER COULD RESULT IN SEVERE UNINTENDED SYSTEM DISRUPTION!!):

```
bpccmd -c 28aa0000ff01
```

```
Expect 00aa00 returned which means the command executed properly
and reported successful "UEPO Service Identify LED Off" status.
```

If something different is returned, then contact the next level of support. For reference, the returned "rrssdd" format hexadecimal characters can be translated as follows:

"rr" Return Code Definitions:
00 = Command executed properly
21 = Cage Not Present / Configured
22 = FRU Not Present / Configured.
27 = Location code error
4A = Error in sent command
4B = Invalid State
95 = BPCH LIC Detected Error
96 = Mail-boxing error

"ss" Sequence Number:

aa = Arbitrary and unimportant

"dd" Return Data Definitions
   00 = UEPO Service Identify LED turned off successfully. It is OK to continue with the service procedure

30. Confirm the UEPO Panel Service Identify LED is now off.

31. Wait 5 minutes and then perform Steps 32 & 33 to verify the original SRC does NOT reoccur and to confirm the service procedure completed successfully.

32. Issue an BPCH-A real-time Power/Thermal SRC read-out command to the **HMC BPC-A ASM SIDE_A** Service Processor Command Line (Refer to 'Power775 BPC FSP Command Line Procedure' in Appendix A of this PDF and ensure **ASM SIDE_A** is active per Step 12) by entering the following at the command prompt (IMPORTANT: DOUBLE-CHECK THE COMMAND IS TYPED IN EXACTLY CORRECT BEFORE PRESSING ENTER BECAUSE EVEN A SINGLE INCORRECT CHARACTER COULD RESULT IN SEVERE UNINTENDED SYSTEM DISRUPTION!!):
```
bpccmd -m gi,3,s
```

```
Verify the original SRC problem is not listed in any of the
src.referenceCode fields (there may be multiple fields to check).
```

33. Issue an BPCH-B real-time Power/Thermal SRC read-out command to the **HMC BPC-B ASM SIDE_B** Service Processor Command Line (Refer to 'Power775 BPC FSP Command Line Procedure' in Appendix A of this PDF and ensure **ASM SIDE_B** is active per Step 12) by entering the following at the command prompt (IMPORTANT: DOUBLE-CHECK THE COMMAND IS TYPED IN EXACTLY CORRECT BEFORE PRESSING ENTER BECAUSE EVEN A SINGLE INCORRECT CHARACTER COULD RESULT IN SEVERE UNINTENDED SYSTEM DISRUPTION!!):
```
bpccmd -m gi,3,s
```

```
Verify the original SRC problem is not listed in any of the
src.referenceCode fields (there may be multiple fields to check).
```

34. If any of the src.referenceCode fields list the original SRC that led you to perform this service procedure, then continue with replacing the next item on the FRU call list or contact the next level of support.

35. If the original SRC error has not reoccurred and is now cleared, then close the front door of the rack and close out the HMC Service Focal Point problem as appropriate.

36. If any of the src.referenceCode fields list the original SRC that led you to perform this service procedure, then continue with replacing the next item on the FRU call list or contact the next level of support.

4 END OF POWER775 POWER CORD SERVICE PROCEDURE

5 APPENDIX A: POWER775 BPC FSP COMMAND LINE PROCEDURE

5.1 Procedure to Access the BPC FSP Command Line

1. The HMC can be accessed via the keyboard/display that resides in the network management rack.

2. Login to the HMC if not done already.

3. In the HMC navigation pane, expand 'Systems Management' + sign and then click 'Frames' (see Figure 21 HMC Frames)
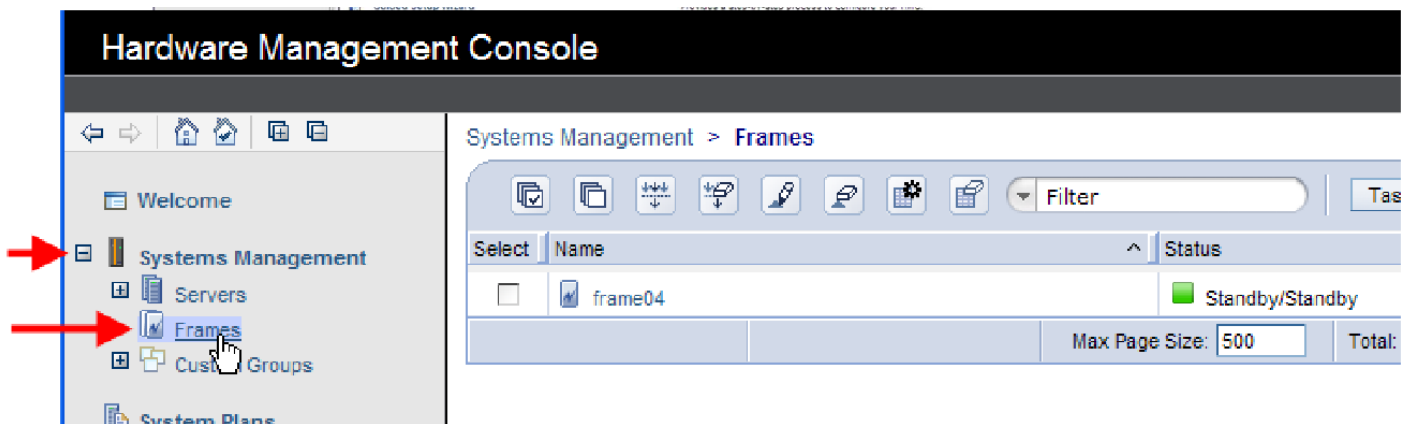

Figure 21 HMC Frames

4. From the Tasks Menu right-arrow pull-down menu, click **Operations ➔ Launch Frame Advanced Systems Management (ASM)** as shown in Figure 22
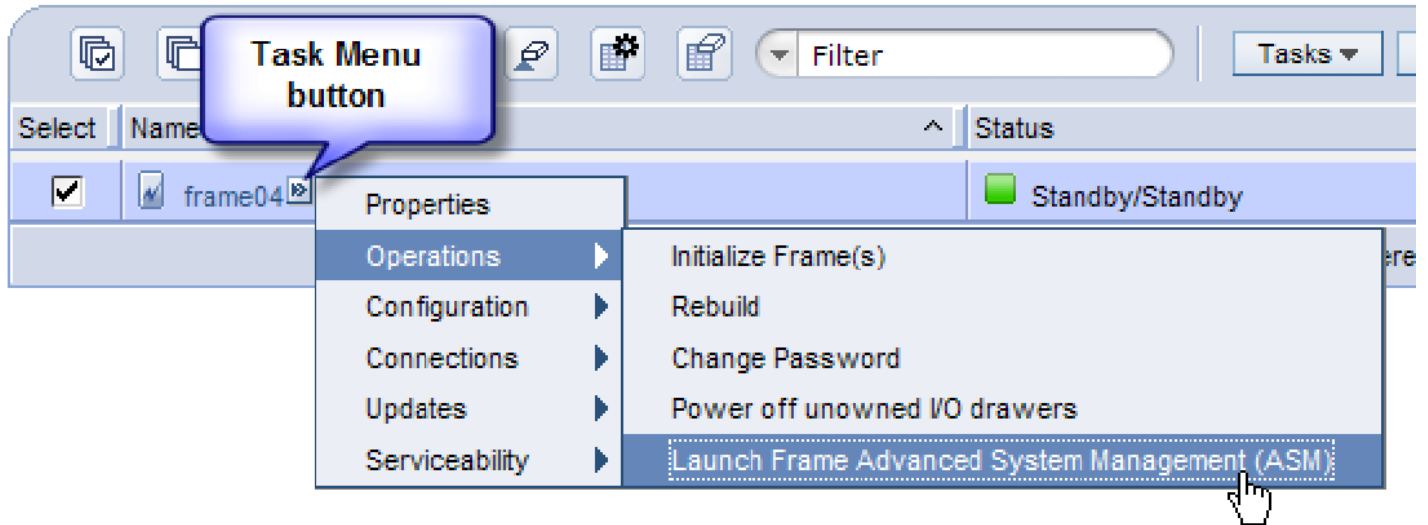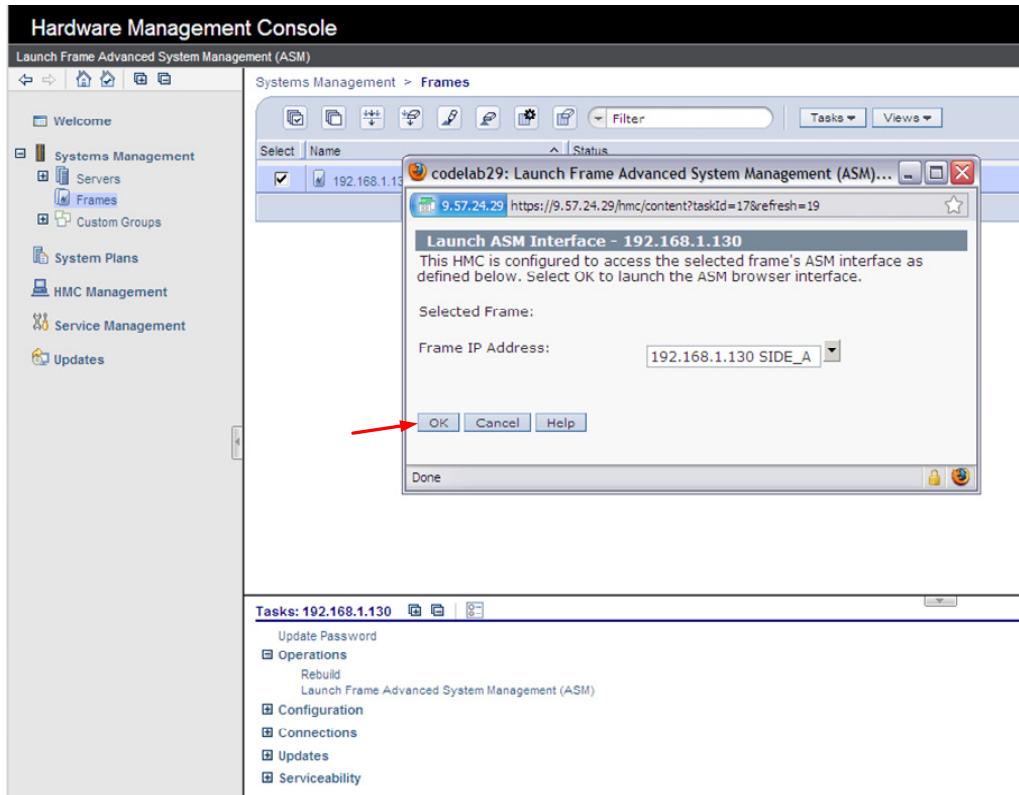

Figure 22 Launch Frame Advanced System Management (ASM)

5. From the Launch ASM Interface window, select **SIDE_A** or **SIDE_B** (whichever the instructions call for) from the 'Frame IP Address:' pull-down arrow menu, then click the **OK** button (see Figure 23 which shows the SIDE_A BPC FSP selected)

Figure 23 Select BPC FSP SIDE_A

6. The ASM login window is presented. Acquire the necessary User ID and Password.

   "celogin" requires Daily Password from the IBM Support Center.

   "celogin1" might be enabled by the customer. If so, obtain the password from the customer.

7. Enter User ID
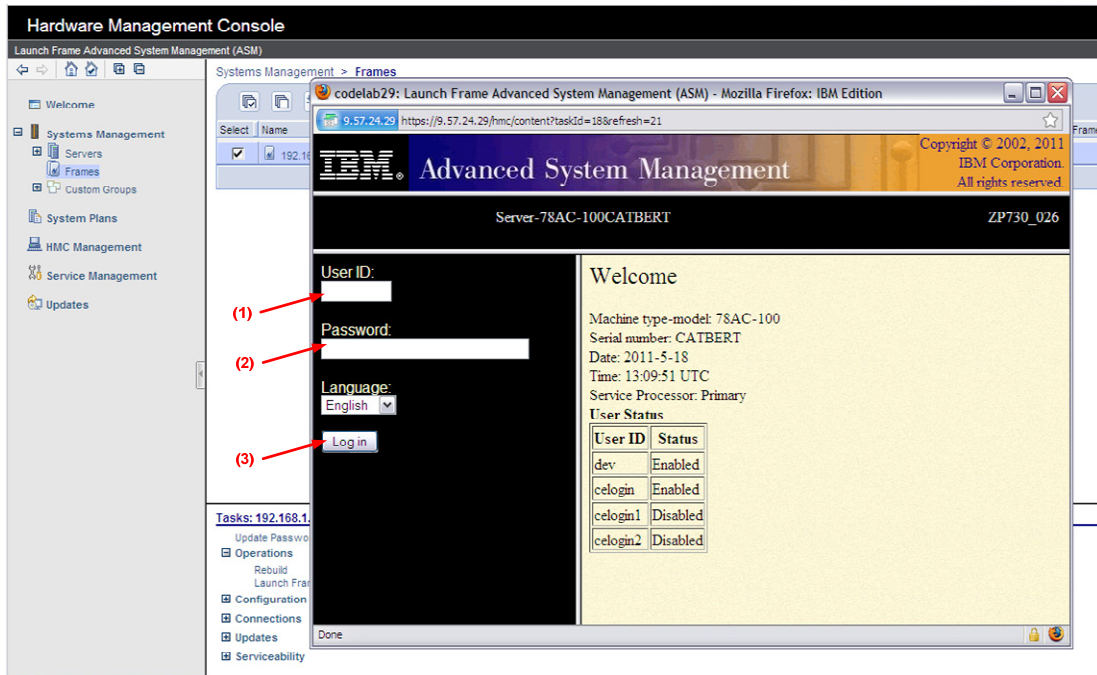
8. Enter Password

9. Click **Log in** button

Figure 24 ASM Login

10. Expand 'System Service Aids' + sign and Select 'Service Processor Command Line' to obtain Figure 25.
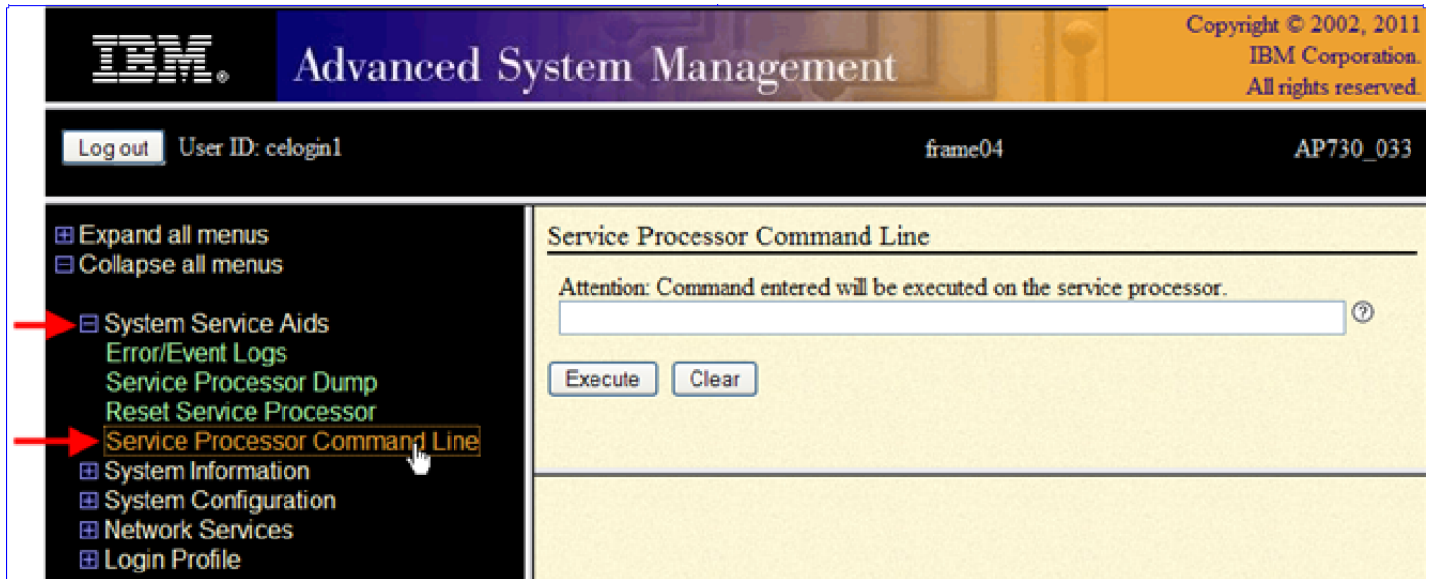

Figure 25 ASM Service Processor Command Line

11. The ASM BPC FSP Command line will be presented. Enter the commands defined in the paper service procedures at this command line and press the Enter key (or click the **Execute** button).

12. If you are not sure whether you are on the ASM **A_SIDE** or **B_SIDE** BPC FSP Command Line, then enter the command **bpccmd –m GET_SIDE** to query which BPC FSP is actively connected.

13. Return to the step of the paper service procedure that directed you to this Appendix A.

5.2   End of Appendix A: Power775 BPC FSP Command Line Procedure

6 END OF DOCUMENT