

9602200

K02-007A

PROCEDURE COVER SHEET

PROCEDURE NUMBER: 545 60-201REVISION: 24PROCEDURE TITLE: Shifting Charging Pumps

SYSTEM STATUS DETERMINATION

Procedure Current (Changes Attached)

Clearance Order Log Reviewed

Current CKL Reviewed

Procedure Review

Equip Out Of Service Log Reviewed

Temp Mod Log Reviewed

INITIAL/DATE

13/26/96

13/26/96

13/26/96

13/26/96

13/26/96

13/26/96

REMARKS

Section 6.4 used to transfer from Accf to Bccf *Edwards*
 5-26-96

6.4

PERFORMED BY

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REVIEWED BY

Edwards
 Group Supervisor

3/26/96
 Date



SYS BG-201

SHIFTING CHARGING PUMPS

Responsible Manager

Manager Operations

Revision Number	28
Use Category	Continuous
Administrative Controls Procedure	No
Infrequently Performed Procedure	No
Program Number	21D

UC12 1-11-96

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1.0 PURPOSE

- 1.1 This procedure provides instructions for shifting between charging pumps.

2.0 SCOPE

- 2.1 This procedure provides instructions for shifting from the PDP to either CCP and adjusting letdown flow to 120 gpm.
- 2.2 This procedure provides instructions for shifting from either CCP to the PDP and adjusting letdown flow to 75 gpm.
- 2.3 This procedure provides instructions for shifting from one CCP to the other CCP.

3.0 REFERENCES

3.1 References

- 3.1.1 M-12BG03(Q)
- 3.1.2 Disposition To MWR 3990-92
- 3.1.3 Letter EN 93-0170
- 3.1.4 Vendor Information: Drawing 300-B49739, Section 8
- 3.1.5 OIR 95-BG-002, OPERATION OF CHARGING PUMPS AT CCW TEMPERATURES BELOW 60°F

3.2 Commitments

- 3.2.1 WM 90-0013 Updated response to NRC Bulletin 88-04, Engineering Disposition CWR 01404-90, Rev. 1 (Low Flow Cavitation)

4.0 PRECAUTIONS/LIMITATIONS

- 4.1 WHEN starting a charging pump, THEN ensure component cooling water is being supplied to the oil cooler.
- 4.2 Immediately stop a centrifugal charging pump if any of the following occur:
- * Oil leaving thrust bearing exceeds 160°F.
 - * Sudden drop in discharge pressure.
 - * Loss of component cooling water to a running pump.
 - * Lube oil pressure drops to zero.
- 4.3 Immediately stop the positive displacement pump if any of the following occur:
- * Pump bearing oil temperature reaches 180°F.
 - * Gyrol fluid drive temperature reaches 220°F.

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- * Pump bearing oil pressure drops to zero.
- * Gyrol fluid level falls below 1/4 in sightglass.

4.4 IF RCS temperature is greater than or equal to 200°F, THEN the CCP Discharge Header FCV-121 Inlet Isolation valve for the pump NOT aligned to the charging header must be locked closed. This does not apply during the time required to shift between CCPs.

- * BG-V8483A for CCP A
- * BG-V8483C for CCP B

4.5 WHEN any RCS cold leg temperature is less than 350°F, THEN only one CCP may be operable. This does not apply during the time required to shift between CCPs or when the reactor vessel head is removed. Refer to Technical Specification 3.5.3.

4.6 Each CCP's flow must be greater than or equal to 175 gpm for continuous operation. By maintaining the recirc valve open and greater than 115 gpm charging flow, the CCP will remain in the continuous operations region. Refer to Standing Order 17 for flow rates less than continuous flow values. The time involved in switching pumps does not count toward the low flow cavitation limits. [Commitment Step 3.2.1]

4.7 IF instrument air is lost to BG FCV-121 OR BG HV-182 when both CCPs are running, THEN close either BG HIS-8105 or BG HIS-8106 and stop either CCP.

4.8 IF the PDP oil temperature is less than 70°F, THEN the PDP should be run on recirc until the oil temperature is greater than 70°F. WHEN starting the PDP in emergency conditions, THEN the warmup to 70°F is not required. The warmup to 70°F may be waived at any time by the SS/80.

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5.0 PREREQUISITES

5.1 CVCS is operating in accordance with SYS BG-120,
CHEMICAL AND VOLUME CONTROL SYSTEM STARTUP.

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6.0 PROCEDURE

6.1 Shifting From PDP To CCP A

CAUTION

When shifting to the CCP, RCS parameters should be closely monitored for reactivity changes due to possible differences in CCP boron concentration and RCS boron concentration.

6.1.1 Verify Centrifugal Charging Pump Flow Control valve is in manual and set at 20%.

o BG FK-121 - IN MANUAL AND SET AT 20% ☐

6.1.2 Verify CCP A Recirc Valve is open.

o BG HIS-8110 - OPEN ☐

6.1.3 Verify component cooling water is being supplied to CCP A. ☐

NOTE

When BG-V8483A is manipulated, it should be logged in the Locked Valve Log for tracking purposes.

6.1.4 Lock open CCP A Discharge Header FCV-121 Inlet Isolation valve.

o BG-V8483A - LOCKED OPEN ☐

Verified ☐

6.1.5 Ensure CCP A Aux Lube Oil Pump in auto.

o BG HIS-1AX - IN AUTO ☐

6.1.6 Start CCP A.

o BG HIS-1A - STARTED ☐

6.1.7 Open CCP A Discharge PI-118 Isolation valve.

o BG-V090 - OPEN ☐

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		INIT/DATE
6.1.8	IF RCS temperature is greater than or equal to 200°F, THEN ensure CCP B Discharge Header FCV-121 Inlet Isolation valve is locked closed.	
	o BG-V8483C LOCKED CLOSED	<u> / </u>
	Verified	<u> / </u>
6.1.9	Place PDP Speed Controller in manual.	
	o BB SK-459A - IN MANUAL	<input type="checkbox"/>
6.1.10	Decrease PDP speed while maintaining a constant charging header flow by performing the following simultaneously:	
	o Lower PDP Speed to 30% output.	
	o BB SK-459A - LOWERED TO 30%	<input type="checkbox"/>
	AND	
	o Adjust CCP Flow control valve as necessary to maintain constant charging header flow.	
	o BG FK-121 - ADJUSTED	<input type="checkbox"/>
6.1.11	WHEN PDP speed at 30%, THEN stop the PDP.	
	o BG HIS-3 - STOPPED	<input type="checkbox"/>
6.1.12	Adjust CCP Discharge Flow Control valve as necessary to maintain PZR level at program.	
	o BG FK-121 - ADJUSTED TO MAINTAIN PZR LEVEL	<input type="checkbox"/>
6.1.13	Adjust Charging Header Back Pressure Control valve as necessary to maintain RCP seal injection flow between 8 gpm and 13 gpm. N/A if not required.	
	o BG FR-157 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-156 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-155 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-154 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>

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		INIT/DATE
6.1.14	Increase letdown flow to 120 gpm: N/A if not required.	
1.	Increase charging flow to 120 gpm.	
	o BG FI-121A - AT 120 GPM	<input type="checkbox"/>
2.	Place Letdown HX Outlet Pressure Controller in manual.	
	o BG PK-131 - IN MANUAL	<input type="checkbox"/>
3.	Adjust Letdown HX Outlet Pressure Controller to between 90% and 100% output.	
	o BG PK-131 - ADJUSTED TO BETWEEN 90% AND 100%	<input type="checkbox"/>
4.	Open Letdown Orifice A Valve.	
	o BG HIS-8149AA - OPEN	<input type="checkbox"/>
5.	Adjust Letdown HX Outlet Pressure Controller as necessary to establish Letdown HX Outlet Pressure at 350 psig.	
	o BG PI-131 - AT 350 PSIG	<input type="checkbox"/>
6.	Place Letdown HX Outlet Pressure Controller in auto.	
	o BG PK-131 - IN AUTO	<input type="checkbox"/>
7.	Verify Letdown HX Outlet Flow is 120 gpm.	
	o BG FI-132 - AT 120 GPM	<input type="checkbox"/>
6.1.15	Place CCP Discharge Flow Control valve in automatic.	
	o BG FK-121 - IN AUTO	<input type="checkbox"/>
6.1.16	Adjust PZR Level Master Controller for 120 gpm letdown: N/A if not required.	
1.	Place PZR Level Master Controller in manual.	
	o BB LK-459 - IN MANUAL	<input type="checkbox"/>

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		INIT/DATE
2.	Adjust PZR Level Master Controller to establish 120 gpm charging flow.	
	o BB LK-459 - ADJUSTED TO ESTABLISH 120 GPM CHARGING FLOW	<input type="checkbox"/>
3.	Place PZR Level Master Controller in auto.	
	o BB LK-459 - IN AUTO	<input type="checkbox"/>
6.1.17	IF charging flow is less than or equal to 115 gpm, <u>THEN</u> refer to Standing Order 17.	<input type="checkbox"/>
6.1.18	Verify pressurizer level is being maintained automatically.	<input type="checkbox"/>
6.1.19	Section 6.1 complete.	<u> / </u>

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6.2 Shifting From PDP To CCP B

CAUTION

When shifting to the CCP, RCS parameters should be closely monitored for reactivity changes due to possible differences in CCP boron concentration and RCS boron concentration.

6.2.1 Verify Centrifugal Charging Pump Flow Control valve is in manual and set at 20%.

o BG FK-121 - IN MANUAL AND SET AT 20% ☐

6.2.2 Verify CCP B Recirc Valve is open.

o BG HIS-8111 - OPEN ☐

6.2.3 Verify component cooling water is being supplied to CCP B. ☐

NOTE

When BG-V8483C is manipulated, it should be logged in the Locked Valve Log for tracking purposes.

6.2.4 Lock open CCP B Discharge Header FCV-121 Inlet Isolation valve.

o BG-V8483C - LOCKED OPEN /

Verified /

6.2.5 Ensure CCP B Aux Lube Oil Pump in auto.

o BG HIS-2AX - IN AUTO ☐

6.2.6 Start CCP B.

o BG HIS-2A - STARTED ☐

6.2.7 Open CCP B Discharge PI-119 Isolation valve.

o BG-V094 - OPEN ☐

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		INIT/DATE
6.2.8	IF RCS temperature is greater than or equal to 200°F, <u>THEN</u> ensure CCP A Discharge Header FCV-121 Inlet Isolation valve is locked closed.	
	o BG-V8483A LOCKED CLOSED	<u> / </u>
	Verified	<u> / </u>
6.2.9	Place PDP Speed Controller in manual.	
	o BB SK-459A - IN MANUAL	<input type="checkbox"/>
6.2.10	Decrease PDP speed while maintaining a constant charging header flow by performing the following simultaneously:	
	o Lower PDP Speed to 30% output.	
	o BB SK-459A - LOWERED TO 30%	<input type="checkbox"/>
	<u>AND</u>	
	o Adjust CCP Flow control valve as necessary to maintain constant charging header flow.	
	o BG FK-121 - ADJUSTED	<input type="checkbox"/>
6.2.11	<u>WHEN</u> PDP speed at 30%, <u>THEN</u> stop the PDP.	
	o BG HIS-3 - STOPPED	<input type="checkbox"/>
6.2.12	Adjust CCP Discharge Flow Control valve as necessary to maintain PZR level at program.	
	o BG FK-121 - ADJUSTED TO MAINTAIN PZR LEVEL	<input type="checkbox"/>
6.2.13	Adjust Charging Header Back Pressure Control valve as necessary to maintain RCP seal injection flow between 8 gpm and 13 gpm. N/A if not required.	
	o BG FR-157 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-156 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-155 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-154 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>

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6.2.14 Increase letdown flow to 120 gpm: N/A if not required.

1. Increase charging flow to 120 gpm.

o BG FI-121A - AT 120 gpm

☐

2. Place Letdown HX Outlet Pressure Controller in manual.

o BG PK-131 - IN MANUAL

☐

3. Adjust Letdown HX Outlet Pressure Controller to between 90% and 100% output.

o BG PK-131 - ADJUSTED TO BETWEEN 90% AND 100%

☐

4. Open Letdown Orifice A Valve.

o BG HIS-8149AA - OPEN

☐

5. Adjust Letdown HX Outlet Pressure Controller as necessary to establish Letdown HX Outlet Pressure at 350 psig.

o BG PI-131 - AT 350 PSIG

☐

6. Place Letdown HX Outlet Pressure Controller in auto.

o BG PK-131 - IN AUTO

☐

7. Verify Letdown HX Outlet Flow is 120 gpm.

o BG FI-132 - AT 120 GPM

☐

6.2.15 Place CCP Discharge Flow Control valve in automatic.

o BG FK-121 - IN AUTO

☐

6.2.16 Adjust PZR Level Master Controller for 120 gpm letdown: N/A if not required.

1. Place PZR Level Master Controller in manual.

o BB LK-459 - IN MANUAL

☐

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		INIT/DATE
2.	Adjust PZR Level Master Controller to establish 120 gpm charging flow.	
	o BB LK-459 - ADJUSTED TO ESTABLISH 120 GPM CHARGING FLOW	<input type="checkbox"/>
3.	Place PZR Level Master Controller in auto.	
	o BB LK-459 - IN AUTO	<input type="checkbox"/>
6.2.17	<u>IF</u> charging flow is less than or equal to 115 gpm, <u>THEN</u> refer to Standing Order 17.	<input type="checkbox"/>
6.2.18	Verify PZR level is being maintained automatically.	<input type="checkbox"/>
6.2.19	Section 6.2 complete.	<u> / </u>

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6.3 Shifting From Either CCP To PDP

CAUTION

When shifting to the PDP, RCS parameters should be closely monitored for reactivity changes due to possible differences in PDP boron concentration and RCS boron concentration.

NOTE

To fill the seal tank, 2 Operators should be utilized to prevent inadvertant overflow of seal tank. Seal tank should be considered contaminated.

- 6.3.1 Locally ensure the PDP seal tank is full. ☐
- 6.3.2 Verify component cooling water is being supplied to the PDP. ☐
- 6.3.3 On the PDP speed increaser, verify the Air Pressure Trip Valve is reset. ☐
- 6.3.4 Open PDP Recirc Valve.
 - o BG HIS-8109 - OPEN ☐
- 6.3.5 Place PDP Speed Controller in manual.
 - o BB SK-459A - IN MANUAL ☐
- 6.3.6 Adjust PDP Speed Controller to 38% output.
 - o BB SK-459A - AT 38% ☐

NOTE

If PDP is started during normal working hours, contact BG System Engineer to check if pump start needs to be observed.
[Reference Step [3.1.3]

- 6.3.7 Start the PDP.
 - o BG HIS-3 - STARTED ☐

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		INIT/DATE
6.3.8	IF the PDP output shaft does <u>NOT</u> begin rotating after pump start, <u>THEN</u> stop the PDP and prime the PDP using Attachment A.	<input type="checkbox"/>
6.3.9	IF the PDP is being started for pump seal run in after maintenance, <u>THEN</u> perform the following:	
	1. Adjust PDP speed to desired speed as directed by System Engineering.	
	o BB SK-459A - ADJUSTED TO DESIRED SPEED	<input type="checkbox"/>
	2. Run the PDP for the amount of time desired by System Engineering.	<input type="checkbox"/>
	3. Pump seal run in complete.	<input type="checkbox"/>
6.3.10	Adjust PDP speed controller output to 38%.	
	o BB SK-459A - AT 38%	<input type="checkbox"/>
6.3.11	Decrease letdown flow to 75 gpm: N/A if not required.	
	1. Close Letdown Orifice A Valve.	
	o BG HIS-8149AA - CLOSE	<input type="checkbox"/>
	2. Place Letdown HX Outlet Pressure Controller in manual.	
	o BG PK-131 - IN MANUAL	<input type="checkbox"/>
	3. Adjust Letdown HX Outlet Pressure Controller as necessary to establish Letdown HX Outlet Pressure at 350 psig.	
	o BG PI-131 - AT 350 PSIG	<input type="checkbox"/>
	4. Place Letdown HX Outlet Pressure Controller in auto.	
	o BG PK-131 - IN AUTO	<input type="checkbox"/>
	5. Verify Letdown HX Outlet Flow is 75 gpm.	
	o BG FI-132 - AT 75 GPM	<input type="checkbox"/>
6.3.12	Place CCP Discharge Flow Control valve in manual.	
	o BG FK-121 - IN MANUAL	<input type="checkbox"/>

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- 6.3.13 Adjust CCP Discharge Flow Control valve to maintain pressurizer level.

o BG FK-121 - ADJUSTED TO MAINTAIN PZR LEVEL



NOTE

When starting the PDP in emergency conditions, the warmup to 70°F is not required. The warmup to 70°F may be waived at any time by the SS/SO.

- 6.3.14 WHEN the PDP has run for 3 minutes AND PDP oil temperature is greater than 70°F, THEN close the PDP Recirc Valve.
[Reference Step 3.1.3]

o BG HIS-8109 - CLOSED



- 6.3.15 Increase PDP speed while maintaining charging header flow between 80 gpm and 100 gpm by performing the following simultaneously:

o Increase PDP speed to maintain flow.

o BB SK-459A - ADJUSTED



AND

o Lower CCP Discharge flow control valve to 20% output.

o BG FK-121 - AT 20%



- 6.3.16 WHEN CCP Discharge Flow Controller output is at 20%, THEN ensure the PDP is supplying the charging header by increasing PDP speed until an increase in charging header flow is observed.

o BB SK-459A - INCREASED UNTIL CHARGING FLOW INCREASED



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NOTE

BG FCV-121 should be left partially OPEN to ensure continuous RCP Seal Injection Flow in the event of PDP TRIP concurrent with CCP AUTO-START and loss of CCW to RCP Thermal Barriers (e.g. SI Signal).

6.3.17 STOP the running centrifugal charging pump.
N/A other pump.

- * BG HIS-1A for CCP A - STOPPED
- * BG HIS-2A for CCP B - STOPPED

☐
☐

6.3.18 Ensure CCP Discharge Flow Controller is in manual with 20% output.

- o BG FK-121 - IN MANUAL AT 20%

Verified

☐
☐

6.3.19 Adjust PDP Speed Controller to maintain PZR level at program.

- o BB SK-459A - ADJUSTED TO MAINTAIN PZR LEVEL

☐

6.3.20 Place PDP Speed Controller in auto.

- o BB SK-459A - IN AUTO

☐

6.3.21 Adjust PZR Lev Master Controller for 75 gpm letdown: N/A if not required.

1. Place PZR Level Master Controller in manual.

- o BB LK-459 - IN MANUAL

☐

2. Adjust PZR Level Master Controller to establish 75 gpm charging flow.

- o BB LK-459 - ADJUSTED TO ESTABLISH 75 GPM CHARGING FLOW

☐

3. Place PZR Level Master Controller in auto.

- o BB LK-459 - IN AUTO

☐

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6.3.22	Adjust Charging Header Back Pressure Control valve as necessary to maintain RCP seal injection flow between 8 gpm and 13 gpm. N/A if not required.	
	o BG FR-157 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-156 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-155 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-154 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
6.3.23	Verify pressurizer level is being maintained automatically.	<input type="checkbox"/>
6.3.24	Close the previously running CCP Discharge Gauge Isolation Valve. N/A other valve.	
	* BG-V090 for CCP A - CLOSED	<input type="checkbox"/>
	<u>OR</u>	
	* BG-V094 for CCP B - CLOSED	<input type="checkbox"/>
6.3.25	Section 6.3 complete.	<u> / </u>

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6.4 Shifting From CCP A To CCP BCAUTION

When shifting to the CCP, RCS parameters should be closely monitored for reactivity changes due to possible differences in CCP boron concentration and RCS boron concentration.

6.4.1 Verify CCP B Recirc Valve is open.

o BG HIS-8111 - OPEN ☒6.4.2 Verify component cooling water is being supplied to CCP B. ☒NOTE

When BG-V8483C is manipulated, it should be logged in the Locked Valve Log for tracking purposes.

6.4.3 Lock open CCP B Discharge Header FCV-121 Inlet Isolation valve.

o BG-V8483C - LOCKED OPEN

Verified

13-26-9614/13-26-96

6.4.4 Ensure CCP B Aux Lube Oil Pump in auto.

o BG HIS-2AX - IN AUTO ☒

6.4.5 Start CCP B.

o BG HIS-2A - STARTED ☒NOTE

Notify System Engineering if CCP is to be run at less than 175 gpm. [Commitment Step 3.2.1]

6.4.6 Monitor charging header flow, seal water injection flow, and CCP Discharge Flow Controller BG FK-121 for proper operation. ☒

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		INIT/DATE
6.4.7	STOP CCP A.	
	o BG HIS-1A - STOPPED	<input checked="" type="checkbox"/>
6.4.8	Open CCP B Discharge PI-119 Isolation valve.	
	o BG-V094 - OPEN	<input checked="" type="checkbox"/>
6.4.9	Close CCP A Discharge PI-118 Isolation valve.	
	o BG-V090 - CLOSED	<input checked="" type="checkbox"/>
<p style="text-align: center;"><u>NOTE</u></p> <p>When BG-V8483A is manipulated, it should be logged in the Locked Valve Log for tracking purposes.</p>		
6.4.10	IF RCS temperature is greater than or equal to 200°F, THEN ensure CCP A Discharge Header FCV-121 Inlet Isolation valve is locked closed.	
	o BG-V8483A LOCKED CLOSED	<u>OK 13-26-96</u>
	Verified	<u>7/4/13-26-96</u>
6.4.11	Ensure pressurizer level, charging header flow, and seal water injection flow are being maintained normally.	<input checked="" type="checkbox"/>
6.4.12	Section 6.4 complete.	<u>OK 13/26/96</u>

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6.5 Shifting From CCP B To CCP A

CAUTION

When shifting to the CCP, RCS parameters should be closely monitored for reactivity changes due to possible differences in CCP boron concentration and RCS boron concentration.

6.5.1 Verify CCP A Recirc Valve is open.

o BG HIS-8110 - OPEN

☐

6.5.2 Verify component cooling water is being supplied to CCP A.

☐

NOTE

When BG-V8483A is manipulated, it should be logged in the Locked Valve Log for tracking purposes.

6.5.3 Lock open CCP A Discharge Header FCV-121 Inlet Isolation valve.

o BG-V8483A - LOCKED OPEN

____/____

Verified

____/____

6.5.4 Ensure CCP A Aux Lube Oil Pump in auto.

o BG HIS-1AX - IN AUTO

☐

6.5.5 Start CCP A.

o BG HIS-1A - STARTED

☐

NOTE

Notify System Engineering if CCP is to be run at less than 175 gpm. [Commitment Step 3.2.1]

6.5.6 Monitor charging header flow, seal water injection flow, and CCP Discharge Flow Controller BG FK-121 for proper operation.

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		INIT/DATE
6.5.7	STOP CCP B.	
	o BG HIS-2A - STOPPED	<input type="checkbox"/>
6.5.8	Open CCP A Discharge PI-118 Isolation valve.	
	o BG-V090 - OPEN	<input type="checkbox"/>
6.5.9	Close CCP B Discharge PI-119 Isolation valve.	
	o BG-V094 - CLOSED	<input type="checkbox"/>
<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p><u>NOTE</u></p> <p>When BG-V8483C is manipulated, it should be logged in the Locked Valve Log for tracking purposes.</p> </div>		
6.5.10	IF RCS temperature is greater than or equal to 200°F, THEN ensure CCP B Discharge Header FCV-121 Inlet Isolation valve is locked closed.	
	o BG-V8483C LOCKED CLOSED	<u> / </u>
	Verified	<u> / </u>
6.5.11	Ensure pressurizer level, charging header flow, and seal water injection flow are being maintained normally.	<input type="checkbox"/>
6.5.12	Section 6.5 complete.	<u> / </u>
7.0	<u>RECORDS</u>	
7.1	The following QA records are generated by this procedure:	
7.1.1	Section 5.0	
7.1.2	Section 6.0	
-END-		

IMAGED 04/10/95

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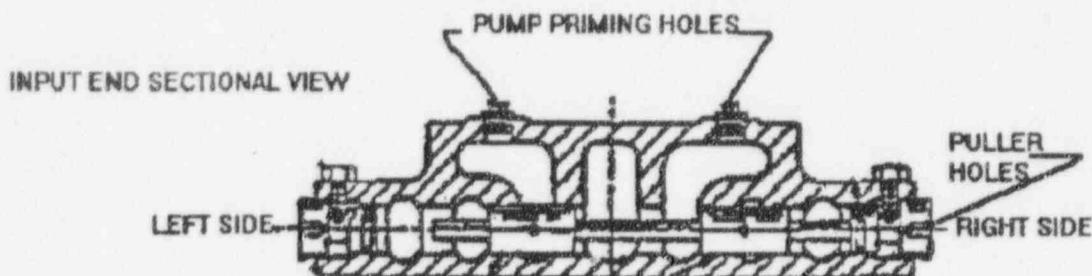
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ATTACHMENT A
(Page 1 of 1)
PRIMING THE PDP

- 1) Check oil level and add oil if necessary.
- 2) Prime the pump.



- 1) Remove the pipe plugs from the two pump priming holes on top of the input end bell.
- 2) Pour oil into either hole until the oil rises to the other hole and remains there.
- 3) Replace and tighten the pipe plugs.

-END-

9602200

K02-007A

APF 15C-002-01 REV 01

PROCEDURE COVER SHEET

PROCEDURE NUMBER: SYS BG-201REVISION: 28PROCEDURE TITLE: Shifting Charging Pumps

SYSTEM STATUS DETERMINATION

INITIAL/DATE

Procedure Current (Changes Attached)
 Clearance Order Log Reviewed
 Current CKL Reviewed
 Procedure Review
 Equip Out Of Service Log Reviewed
 Temp Mod Log Reviewed

<i>B</i>	13/23/96
<i>B</i>	13/23/96
<i>B</i>	13/23/96
<i>B</i>	13/23/96
<i>B</i>	13/23/96
<i>B</i>	13/23/96

REMARKS

*Used to surge from "A" to "B" ccl and then
 from "B" to "A" ccl using sections 5.0, 6.4 & 6.5*

6.4, 6.5

PERFORMED BY

Name (Print)	Init	Date
<i>Dale L. Berry</i>	<i>KB</i>	<i>13-23-96</i>
<i>SON STONE</i>	<i>pr</i>	<i>13/24/96</i>
<i>Mark Jenkins</i>	<i>J</i>	<i>13-23-96</i>
<i>Mari Lehman</i>	<i>M</i>	<i>13-24-96</i>

Name (Print)	Init.	Date

REVIEWED BY

[Signature]
 Group Supervisor

3/24/96
 Date

98-01-10-033041



SYS BG-201

SHIFTING CHARGING PUMPS

Responsible Manager

Manager Operations

Revision Number	28
Use Category	Continuous
Administrative Controls Procedure	No
Infrequently Performed Procedure	No
Program Number	21D

UC12 1-11-96

Revision: 28

SHIFTING CHARGING PUMPS

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1.0 PURPOSE

1.1 This procedure provides instructions for shifting between charging pumps.

2.0 SCOPE

2.1 This procedure provides instructions for shifting from the PDP to either CCP and adjusting letdown flow to 120 gpm.

2.2 This procedure provides instructions for shifting from either CCP to the PDP and adjusting letdown flow to 75 gpm.

2.3 This procedure provides instructions for shifting from one CCP to the other CCP.

3.0 REFERENCES

3.1 References

3.1.1 M-12BG03 (Q)

3.1.2 Disposition To MWR 3990-92

3.1.3 Letter EN 93-0170

3.1.4 Vendor Information: Drawing 300-B49739, Section 8

3.1.5 OIR 95-BG-002, OPERATION OF CHARGING PUMPS AT CCW TEMPERATURES BELOW 60°F

3.2 Commitments

3.2.1 WM 90-0013 Updated response to NRC Bulletin 88-04, Engineering Disposition CWR 01404-90, Rev. 1 (Low Flow Cavitation)

4.0 PRECAUTIONS/LIMITATIONS

4.1 WHEN starting a charging pump, THEN ensure component cooling water is being supplied to the oil cooler.

4.2 Immediately stop a centrifugal charging pump if any of the following occur:

- * Oil leaving thrust bearing exceeds 160°F.
- * Sudden drop in discharge pressure.
- * Loss of component cooling water to a running pump.
- * Lube oil pressure drops to zero.

4.3 Immediately stop the positive displacement pump if any of the following occur:

- * Pump bearing oil temperature reaches 180°F.
- * Gyrol fluid drive temperature reaches 220°F.

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- * Pump bearing oil pressure drops to zero.
- * Gyrol fluid level falls below 1/4 in sightglass.

4.4 IF RCS temperature is greater than or equal to 200°F, THEN the CCP Discharge Header FCV-121 Inlet Isolation valve for the pump NOT aligned to the charging header must be locked closed. This does not apply during the time required to shift between CCPs.

- * BG-V8483A for CCP A
- * BG-V8483C for CCP B

4.5 WHEN any RCS cold leg temperature is less than 350°F, THEN only one CCP may be operable. This does not apply during the time required to shift between CCPs or when the reactor vessel head is removed. Refer to Technical Specification 3.5.3.

4.6 Each CCP's flow must be greater than or equal to 175 gpm for continuous operation. By maintaining the recirc valve open and greater than 115 gpm charging flow, the CCP will remain in the continuous operations region. Refer to Standing Order 17 for flow rates less than continuous flow values. The time involved in switching pumps does not count toward the low flow cavitation limits. [Commitment Step 3.2.1]

4.7 IF instrument air is lost to BG FCV-121 OR BG HV-182 when both CCPs are running, THEN close either BG HIS-8105 or BG HIS-8106 and stop either CCP.

4.8 IF the PDP oil temperature is less than 70°F, THEN the PDP should be run on recirc until the oil temperature is greater than 70°F. WHEN starting the PDP in emergency conditions, THEN the warmup to 70°F is not required. The warmup to 70°F may be waived at any time by the SS/SO.

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5.0 PREREQUISITES

- 5.1 CVCS is operating in accordance with SYS BG-120,
CHEMICAL AND VOLUME CONTROL SYSTEM STARTUP.

/ 13-24-96

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INIT/DATE

6.0 PROCEDURE

6.1 Shifting From PDP To CCP A

CAUTION

When shifting to the CCP, RCS parameters should be closely monitored for reactivity changes due to possible differences in CCP boron concentration and RCS boron concentration.

6.1.1 Verify Centrifugal Charging Pump Flow Control valve is in manual and set at 20%.

o BG FK-121 - IN MANUAL AND SET AT 20% ☐

6.1.2 Verify CCP A Recirc Valve is open.

o BG HIS-8110 - OPEN ☐

6.1.3 Verify component cooling water is being supplied to CCP A. ☐

NOTE

When BG-V8483A is manipulated, it should be logged in the Locked Valve Log for tracking purposes.

6.1.4 Lock open CCP A Discharge Header FCV-121 Inlet Isolation valve.

o BG-V8483A - LOCKED OPEN ☐

Verified ☐

6.1.5 Ensure CCP A Aux Lube Oil Pump in auto.

o BG HIS-1AX - IN AUTO ☐

6.1.6 Start CCP A.

o BG HIS-1A - STARTED ☐

6.1.7 Open CCP A Discharge PI-118 Isolation valve.

o BG-V090 - OPEN ☐

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		INIT/DATE
6.1.8	IF RCS temperature is greater than or equal to 200°F, <u>THEN</u> ensure CCP B Discharge Header FCV-121 Inlet Isolation valve is locked closed.	
	o BG-V8483C LOCKED CLOSED	<u> / </u>
	Verified	<u> / </u>
6.1.9	Place PDP Speed Controller in manual.	
	o BB SK-459A - IN MANUAL	<input type="checkbox"/>
6.1.10	Decrease PDP speed while maintaining a constant charging header flow by performing the following simultaneously:	
	o Lower PDP Speed to 30% output.	
	o BB SK-459A - LOWERED TO 30%	<input type="checkbox"/>
	<u>AND</u>	
	o Adjust CCP Flow control valve as necessary to maintain constant charging header flow.	
	o BG FK-121 - ADJUSTED	<input type="checkbox"/>
6.1.11	<u>WHEN</u> PDP speed at 30%, <u>THEN</u> stop the PDP.	
	o BG HIS-3 - STOPPED	<input type="checkbox"/>
6.1.12	Adjust CCP Discharge Flow Control valve as necessary to maintain PZR level at program.	
	o BG FK-121 - ADJUSTED TO MAINTAIN PZR LEVEL	<input type="checkbox"/>
6.1.13	Adjust Charging Header Back Pressure Control valve as necessary to maintain RCP seal injection flow between 8 gpm and 13 gpm. N/A if not required.	
	o BG FR-157 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-156 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-155 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-154 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>

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		INIT/DATE
6.1.14	Increase letdown flow to 120 gpm: N/A if not required.	
1.	Increase charging flow to 120 gpm.	
	o BG FI-121A - AT 120 GPM	<input type="checkbox"/>
2.	Place Letdown HX Outlet Pressure Controller in manual.	
	o BG PK-131 - IN MANUAL	<input type="checkbox"/>
3.	Adjust Letdown HX Outlet Pressure Controller to between 90% and 100% output.	
	o BG PK-131 - ADJUSTED TO BETWEEN 90% AND 100%	<input type="checkbox"/>
4.	Open Letdown Orifice A Valve.	
	o BG HIS-8149AA - OPEN	<input type="checkbox"/>
5.	Adjust Letdown HX Outlet Pressure Controller as necessary to establish Letdown HX Outlet Pressure at 350 psig.	
	o BG PI-131 - AT 350 PSIG	<input type="checkbox"/>
6.	Place Letdown HX Outlet Pressure Controller in auto.	
	o BG PK-131 - IN AUTO	<input type="checkbox"/>
7.	Verify Letdown HX Outlet Flow is 120 gpm.	
	o BG FI-132 - AT 120 GPM	<input type="checkbox"/>
6.1.15	Place CCP Discharge Flow Control valve in automatic.	
	o BG FK-121 - IN AUTO	<input type="checkbox"/>
6.1.16	Adjust PZR Level Master Controller for 120 gpm letdown: N/A if not required.	
1.	Place PZR Level Master Controller in manual.	
	o BB LK-459 - IN MANUAL	<input type="checkbox"/>

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2. Adjust PZR Level Master Controller to establish 120 gpm charging flow.
 - o BB LK-459 - ADJUSTED TO ESTABLISH 120 GPM CHARGING FLOW ☐
3. Place PZR Level Master Controller in auto.
 - o BB LK-459 - IN AUTO ☐
- 6.1.17 IF charging flow is less than or equal to 115 gpm, THEN refer to Standing Order 17. ☐
- 6.1.18 Verify pressurizer level is being maintained automatically. ☐
- 6.1.19 Section 6.1 complete. /

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6.2 Shifting From PDP To CCP B

CAUTION

When shifting to the CCP, RCS parameters should be closely monitored for reactivity changes due to possible differences in CCP boron concentration and RCS boron concentration.

6.2.1 Verify Centrifugal Charging Pump Flow Control valve is in manual and set at 20%.

o BG FK-121 - IN MANUAL AND SET AT 20% ☐

6.2.2 Verify CCP B Recirc Valve is open.

o BG HIS-8111 - OPEN ☐

6.2.3 Verify component cooling water is being supplied to CCP B. ☐

NOTE

When BG-V8483C is manipulated, it should be logged in the Locked Valve Log for tracking purposes.

6.2.4 Lock open CCP B Discharge Header FCV-121 Inlet Isolation valve.

o BG-V8483C - LOCKED OPEN /

Verified /

6.2.5 Ensure CCP B Aux Lube Oil Pump in auto.

o BG HIS-2AX - IN AUTO ☐

6.2.6 Start CCP B.

o BG HIS-2A - STARTED ☐

6.2.7 Open CCP B Discharge PI-119 Isolation valve.

o BG-V094 - OPEN ☐

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		INIT/DATE
6.2.8	IF RCS temperature is greater than or equal to 200°F, <u>THEN</u> ensure CCP A Discharge Header FCV-121 Inlet Isolation valve is locked closed.	
	o BG-V8483A LOCKED CLOSED	<u> / </u>
	Verified	<u> / </u>
6.2.9	Place PDP Speed Controller in manual.	
	o BB SK-459A - IN MANUAL	<input type="checkbox"/>
6.2.10	Decrease PDP speed while maintaining a constant charging header flow by performing the following simultaneously:	
	o Lower PDP Speed to 30% output.	
	o BB SK-459A - LOWERED TO 30%	<input type="checkbox"/>
	<u>AND</u>	
	o Adjust CCP Flow control valve as necessary to maintain constant charging header flow.	
	o BG FK-121 - ADJUSTED	<input type="checkbox"/>
6.2.11	<u>WHEN</u> PDP speed at 30%, <u>THEN</u> stop the PDP.	
	o BG HIS-3 - STOPPED	<input type="checkbox"/>
6.2.12	Adjust CCP Discharge Flow Control valve as necessary to maintain PZR level at program.	
	o BG FK-121 - ADJUSTED TO MAINTAIN PZR LEVEL	<input type="checkbox"/>
6.2.13	Adjust Charging Header Back Pressure Control valve as necessary to maintain RCP seal injection flow between 8 gpm and 13 gpm. N/A if not required.	
	o BG FR-157 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-156 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-155 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-154 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>

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		INIT/DATE
6.2.14	Increase letdown flow to 120 gpm: N/A if not required.	
1.	Increase charging flow to 120 gpm.	
	o BG FI-121A - AT 120 gpm	<input type="checkbox"/>
2.	Place Letdown HX Outlet Pressure Controller in manual.	
	o BG PK-131 - IN MANUAL	<input type="checkbox"/>
3.	Adjust Letdown HX Outlet Pressure Controller to between 90% and 100% output.	
	o BG PK-131 - ADJUSTED TO BETWEEN 90% AND 100%	<input type="checkbox"/>
4.	Open Letdown Orifice A Valve.	
	o BG HIS-8149AA - OPEN	<input type="checkbox"/>
5.	Adjust Letdown HX Outlet Pressure Controller as necessary to establish Letdown HX Outlet Pressure at 350 psig.	
	o BG PI-131 - AT 350 PSIG	<input type="checkbox"/>
6.	Place Letdown HX Outlet Pressure Controller in auto.	
	o BG PK-131 - IN AUTO	<input type="checkbox"/>
7.	Verify Letdown HX Outlet Flow is 120 gpm.	
	o BG FI-132 - AT 120 GPM	<input type="checkbox"/>
6.2.15	Place CCP Discharge Flow Control valve in automatic.	
	o BG FK-121 - IN AUTO	<input type="checkbox"/>
6.2.16	Adjust PZR Level Master Controller for 120 gpm letdown: N/A if not required.	
1.	Place PZR Level Master Controller in manual.	
	o BB LK-459 - IN MANUAL	<input type="checkbox"/>

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2. Adjust PZR Level Master Controller to establish 120 gpm charging flow.

o BB LK-459 - ADJUSTED TO ESTABLISH 120 GPM CHARGING FLOW

☐

3. Place PZR Level Master Controller in auto.

o BB LK-459 - IN AUTO

☐

- 6.2.17 IF charging flow is less than or equal to 115 gpm, THEN refer to Standing Order 17.

☐

- 6.2.18 Verify PZR level is being maintained automatically.

☐

- 6.2.19 Section 6.2 complete.

_____/

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6.3 Shifting From Either CCP To PDPCAUTION

When shifting to the PDP, RCS parameters should be closely monitored for reactivity changes due to possible differences in PDP boron concentration and RCS boron concentration.

NOTE

To fill the seal tank, 2 Operators should be utilized to prevent inadvertant overflow of seal tank. Seal tank should be considered contaminated.

- 6.3.1 Locally ensure the PDP seal tank is full. ☐
- 6.3.2 Verify component cooling water is being supplied to the PDP. ☐
- 6.3.3 On the PDP speed increaser, verify the Air Pressure Trip Valve is reset. ☐
- 6.3.4 Open PDP Recirc Valve.
 - o BG HIS-8109 - OPEN ☐
- 6.3.5 Place PDP Speed Controller in manual.
 - o BB SK-459A - IN MANUAL ☐
- 6.3.6 Adjust PDP Speed Controller to 38% output.
 - o BB SK-459A - AT 38% ☐

NOTE

If PDP is started during normal working hours, contact BG System Engineer to check if pump start needs to be observed.
[Reference Step [3.1.3]]

- 6.3.7 Start the PDP.
 - o BG HIS-3 - STARTED ☐

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- 6.3.8 IF the PDP output shaft does NOT begin rotating after pump start, THEN stop the PDP and prime the PDP using Attachment A. ☐
- 6.3.9 IF the PDP is being started for pump seal run in after maintenance, THEN perform the following:
1. Adjust PDP speed to desired speed as directed by System Engineering.
 - o BB SK-459A - ADJUSTED TO DESIRED SPEED ☐
 2. Run the PDP for the amount of time desired by System Engineering. ☐
 3. Pump seal run in complete. ☐
- 6.3.10 Adjust PDP speed controller output to 38%. ☐
- o BB SK-459A - AT 38%
- 6.3.11 Decrease letdown flow to 75 gpm: N/A if not required. ☐
1. Close Letdown Orifice A Valve.
 - o BG HIS-8149AA - CLOSE ☐
 2. Place Letdown HX Outlet Pressure Controller in manual.
 - o BG PK-131 - IN MANUAL ☐
 3. Adjust Letdown HX Outlet Pressure Controller as necessary to establish Letdown HX Outlet Pressure at 350 psig.
 - o BG PI-131 - AT 350 PSIG ☐
 4. Place Letdown HX Outlet Pressure Controller in auto.
 - o BG PK-131 - IN AUTO ☐
 5. Verify Letdown HX Outlet Flow is 75 gpm.
 - o BG FI-132 - AT 75 GPM ☐
- 6.3.12 Place CCP Discharge Flow Control valve in manual. ☐
- o BG FK-121 - IN MANUAL ☐

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- 6.3.13 Adjust CCP Discharge Flow Control valve to maintain pressurizer level.

o BG FK-121 - ADJUSTED TO MAINTAIN PZR LEVEL



NOTE

When starting the PDP in emergency conditions, the warmup to 70°F is not required. The warmup to 70°F may be waived at any time by the SS/SO.

- 6.3.14 WHEN the PDP has run for 3 minutes AND PDP oil temperature is greater than 70°F, THEN close the PDP Recirc Valve.
[Reference Step 3.1.3]

o BG HIS-8109 - CLOSED



- 6.3.15 Increase PDP speed while maintaining charging header flow between 80 gpm and 100 gpm by performing the following simultaneously:

o Increase PDP speed to maintain flow.

o BB SK-459A - ADJUSTED



AND

o Lower CCP Discharge flow control valve to 20% output.

o BG FK-121 - AT 20%



- 6.3.16 WHEN CCP Discharge Flow Controller output is at 20%, THEN ensure the PDP is supplying the charging header by increasing PDP speed until an increase in charging header flow is observed.

o BB K-459A - INCREASED UNTIL CHARGING FLOW INCREASED



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NOTE

BG FCV-121 should be left partially OPEN to ensure continuous RCP Seal Injection Flow in the event of PDP TRIP concurrent with CCP AUTO-START and loss of CCW to RCP Thermal Barriers (e.g. SI Signal).

- 6.3.17 STOP the running centrifugal charging pump.
N/A other pump.

- * BG HIS-1A for CCP A - STOPPED
- * BG HIS-2A for CCP B - STOPPED

☐

- 6.3.18 Ensure CCP Discharge Flow Controller is in manual with 20% output.

- o BG FK-121 - IN MANUAL AT 20%

Verified

☐

- 6.3.19 Adjust PDP Speed Controller to maintain PZR level at program.

- o BB SK-459A - ADJUSTED TO MAINTAIN PZR LEVEL

☐

- 6.3.20 Place PDP Speed Controller in auto.

- o BB SK-459A - IN AUTO

☐

- 6.3.21 Adjust PZR Lev Master Controller for 75 gpm letdown: N/A if not required.

1. Place PZR Level Master Controller in manual.

- o BB LK-459 - IN MANUAL

☐

2. Adjust PZR Level Master Controller to establish 75 gpm charging flow.

- o BB LK-459 - ADJUSTED TO ESTABLISH 75 GPM CHARGING FLOW

☐

3. Place PZR Level Master Controller in auto.

- o BB LK-459 - IN AUTO

☐

IMPROVED CHARTING

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6.3.22	Adjust Charging Header Back Pressure Control valve as necessary to maintain RCP seal injection flow between 8 gpm and 13 gpm. N/A if not required.	
	o BG FR-157 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-156 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-155 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
	o BG FR-154 - BETWEEN 8 GPM AND 13 GPM	<input type="checkbox"/>
6.3.23	Verify pressurizer level is being maintained automatically.	<input type="checkbox"/>
6.3.24	Close the previously running CCP Discharge Gauge Isolation Valve. N/A other valve.	
	* BG-V090 for CCP A - CLOSED	<input type="checkbox"/>
	<u>OR</u>	
	* BG-V094 for CCP B - CLOSED	<input type="checkbox"/>
6.3.25	Section 6.3 complete.	<u> / </u>

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6.4 Shifting From CCP A To CCP B

CAUTION

When shifting to the CCP, RCS parameters should be closely monitored for reactivity changes due to possible differences in CCP boron concentration and RCS boron concentration.

6.4.1 Verify CCP B Recirc Valve is open.

o BG HIS-8111 - OPEN



6.4.2 Verify component cooling water is being supplied to CCP B.



NOTE

When BG-V8483C is manipulated, it should be logged in the Locked Valve Log for tracking purposes.

6.4.3 Lock open CCP B Discharge Header PCV-121 Inlet Isolation valve.

o BG-V8483C - LOCKED OPEN

Verified

13/24/96
13/29/96

6.4.4 Ensure CCP B Aux Lube Oil Pump in auto.

o BG HIS-2AX - IN AUTO



6.4.5 Start CCP B.

o BG HIS-2A - STARTED



NOTE

Notify System Engineering if CCP is to be run at less than 175 gpm. [Commitment Step 3.2.1]

6.4.6 Monitor charging header flow, seal water injection flow, and CCP Discharge Flow Controller BG FK-121 for proper operation.



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- | | | INIT/DATE |
|-------|---|-------------------------------------|
| 6.4.7 | STOP CCP A. | |
| | o BG HIS-1A - STOPPED | <input checked="" type="checkbox"/> |
| 6.4.8 | Open CCP B Discharge PI-119 Isolation valve. | |
| | o BG-V094 - OPEN | <input checked="" type="checkbox"/> |
| 6.4.9 | Close CCP A Discharge PI-118 Isolation valve. | |
| | o BG-V090 - CLOSED | <input checked="" type="checkbox"/> |

NOTE

When BG-V8483A is manipulated, it should be logged in the Locked Valve Log for tracking purposes.

- 6.4.10 IF RCS temperature is greater than or equal to 200°F, THEN ensure CCP A Discharge Header FCV-121 Inlet Isolation valve is locked closed.
- o BG-V8483A LOCKED CLOSED
- Verified
- 6.4.11 Ensure pressurizer level, charging header flow, and seal water injection flow are being maintained normally.
- 6.4.12 Section 6.4 complete.

W 1324/96
M 1329/96

☒
W 1324/96

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6.5 Shifting From CCP B To CCP A

INIT/DATE

CAUTION

When shifting to the CCP, RCS parameters should be closely monitored for reactivity changes due to possible differences in CCP boron concentration and RCS boron concentration.

6.5.1 Verify CCP A Recirc Valve is open.

o BG HIS-8110 - OPEN



6.5.2 Verify component cooling water is being supplied to CCP A.



NOTE

When BG-V8483A is manipulated, it should be logged in the Locked Valve Log for tracking purposes.

6.5.3 Lock open CCP A Discharge Header FCV-121 Inlet Isolation valve.

o BG-V8483A - LOCKED OPEN

Verified

for 13/24/96
m 13/29/96

6.5.4 Ensure CCP A Aux Lube Oil Pump in auto.

o BG HIS-1AX - IN AUTO



6.5.5 Start CCP A.

o BG HIS-1A - STARTED



NOTE

Notify System Engineering if CCP is to be run at less than 175 gpm. [Commitment Step 3.2.1]

6.5.6 Monitor charging header flow, seal water injection flow, and CCP Discharge Flow Controller BG FK-121 for proper operation.



		INIT/DATE
6.5.7	STOP CCP B.	
	o BG HIS-2A - STOPPED	<input checked="" type="checkbox"/>
6.5.8	Open CCP A Discharge PI-118 Isolation valve.	
	o BG-V090 - OPEN	<input checked="" type="checkbox"/>
6.5.9	Close CCP B Discharge PI-119 Isolation valve.	
	o BG-V094 - CLOSED	<input checked="" type="checkbox"/>

NOTE

When BG-V8483C is manipulated, it should be logged in the Locked Valve Log for tracking purposes.

6.5.10	IF RCS temperature is greater than or equal to 200°F, THEN ensure CCP B Discharge Header FCV-121 Inlet Isolation valve is locked closed.	
	o BG-V8483C LOCKED CLOSED	
	Verified	<u>W 13/24/96</u> <u>W 13/24/96</u>
6.5.11	Ensure pressurizer level, charging header flow, and seal water injection flow are being maintained normally.	<input checked="" type="checkbox"/>
6.5.12	Section 6.5 complete.	<u>W 13/24/96</u>

7.0 RECORDS

7.1 The following QA records are generated by this procedure:

- 7.1.1 Section 5.0
- 7.1.2 Section 6.0

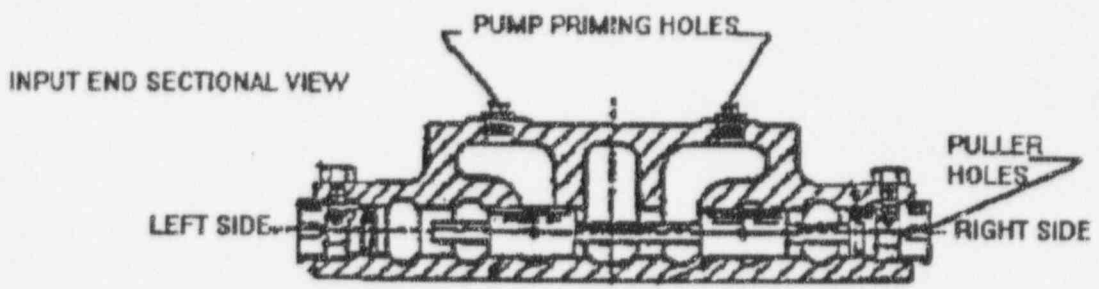
-END-

IMAGED 04/14/96

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ATTACHMENT A
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PRIMING THE PDP

- 1) Check oil level and add oil if necessary.
- 2) Prime the pump.



- 1) Remove the pipe plugs from the two pump priming holes on top of the input end bell.
 - 2) Pour oil into either hole until the oil rises to the other hole and remains there.
 - 3) Replace and tighten the pipe plugs.
- END-