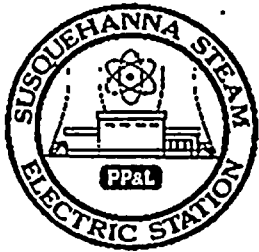


FOR INFORMATION ONLY

PROCEDURE COVER SHEET

	NUCLEAR DEPARTMENT PROCEDURE	OP-249-003 Revision 13 Page 1 of 20
	RHR OPERATION IN FUEL POOL COOLING MODE	

EFFECTIVE DATE: 4-7-94

PERIODIC REVIEW FREQUENCY: 2yr

PERIODIC REVIEW DUE DATE: 3-30-96

REVISED PERIODIC REVIEW DUE DATE: _____

PROCEDURE TYPE: QA Program () YES () NO

Plant Procedure () YES () NO

REVIEW METHOD:

() Alternate () Expedited

() PORC () ERC

Prepared by	<u>Joseph G. Fend</u>	Date	<u>3-30-94 3-25-94</u>
Reviewed by	<u>[Signature]</u> Supervisor	Date	<u>3-27-94</u>
Recommended	<u>[Signature]</u> Functional Unit Manager	Date	<u>3-30-94</u>
	<u>NA</u> PORC Committee Meeting No.	Date	_____
	<u>NA</u> ERC Committee Meeting No.	Date	_____
Approved by	<u>[Signature]</u>	Date	<u>3/30/94</u>

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1.0 PURPOSE

Provide instruction for operation of Residual Heat Removal System in Fuel Pool Cooling Mode.

2.0 REFERENCES

- 2.1 Technical Specification Section 3.4.4
- 2.2 Technical Specification Section 3.5.1
- 2.3 Technical Specification Section 3.5.2
- 2.4 Technical Specification Section 3.4.9.2
- 2.5 Technical Specification Section 3.9.11.1
- 2.6 Technical Specification Section 3.9.11.2
- 2.7 OP-216-001 Residual Heat Removal Service Water
- 2.8 OP-235-001 Fuel Pool Cooling and Cleanup System
- 2.9 OP-249-001 Residual Heat Removal System
- 2.10 OP-054-001 ESW System
- 2.11 OP-269-004 Liquid Radwaste Collection System
- 2.12 Electrical Schematic E-153
- 2.13 Electrical Schematic E-171
- 2.14 Electrical Schematic E-185
- 2.15 Elementary Diagram M1-E11-3
- 2.16 Elementary Diagram M1-E11-29
- 2.17 P&ID M-2111
- 2.18 P&ID M-2112
- 2.19 P&ID M-2141
- 2.20 P&ID M-2151
- 2.21 P&ID M-2153



- 2.22 P&ID M-2161
- 2.23 IOM 46 RHR Pump Motors
- 2.24 IOM 155 RHR Pump Motors
- 2.25 SIL NO. 69 Hydraulic Loop Interactions
- 2.26 SIL NO. 175 RHR/Recirc Sys Water Hammer During Primary Sys
Cooldown
- 2.27 SIL NO. 357 Control of Reactor Vessel Temperature/Pressure during
Shutdown
- (¹) 2.28 Loss of Fuel Pool Cooling Event Evaluation NE-092-002
- 2.29 Calc M-RHR-039, RHR Fuel Pool Cooling Assist Flow Evaluation

3.0 PROCEDURE

RHR OPERATION IN FUEL POOL COOLING MODE

3.1 Prerequisites

- 3.1.1 RHR System in standby alignment in accordance
with OP-249-001.
- 3.1.2 Fuel Pool Cooling System shutdown in accordance
with OP-235-001.
- 3.1.3 RHR Service Water System available in accordance with
OP-216-001.
- 3.1.4 Emergency Service Water System available in accordance
with OP-054-001.
- 3.1.5 Liquid Radwaste aligned for normal operation in
accordance with OP-269-004.
- 3.1.6 RHR Pump Room Coolers available in accordance
with OP-234-001.



3.2 Precautions

- 3.2.1 RHR Loop A is preferred loop for operation in Fuel Pool Cooling Mode. This is due to capability of RHR Loop A discharge to be aligned directly to Fuel Pool Cooling and Cleanup System. If RHR Loop B is used, RHR LOOP A CROSS-TIE HV-251-F010A and RHR LOOP B CROSS-TIE HV-251-F010B must be opened and discharge routed through RHR Loop A piping.
- 3.2.2 RHR PP A/C(B/D) MIN FLOW HV-251-F007A(B) will be prevented from auto opening to prevent routing water from Fuel Pool to Suppression Pool. Minimize time RHR Pump is running without flowpath to prevent pump damage.
- 3.2.3 Prior to starting first RHR Pump in a loop, loop must be checked filled and vented.
- 3.2.4 If manual operator for 3600 RPM motor operated valve with Limitorque actuator TYPE SM-0,1,2 or 3 is engaged, valve shall be evaluated for operability until stroked electrically. LCO shall be taken if applicable or valve controlled by yellow tag if it is not restored promptly. These valves are identified on Mechanical CL's by applicable footnotes.
- 3.2.5 When operating any RHR MOV, other than emergency conditions, place RHR LOOP A(B) MOV OL BYPS HS-E11-2S62A(B) keyswitch in TEST position to place MOV thermal overloads in circuit prior to operating valve and wait 2 minutes before returning to NORM position when valve operations are complete.
- 3.2.6 This procedure shall only be used when directed by Shift Supervisor.
- 3.2.7 Water quality may deteriorate due to stagnant water being injected.

- 3.3 COMPLY with Technical Specification Section 3.4.4, 3.4.9.2, 3.5.1, 3.5.2, 3.9.11.1 and/or 3.9.11.2.



3.4 PERFORM following as applicable:

3.4.1 If RHR Loop A to be placed in service, PLACE RHR LOOP A MOV OL BYPS HS-E11-2S62A keyswitch to TEST.

3.4.2 If RHR Loop B to be placed in service, PLACE RHR Loop B MOV OL BYPS HS-E11-2S62B to TEST.

3.5 To prevent inadvertently routing Fuel Pool water to Suppression Pool, DEFEAT minimum flow valve interlock for RHR Pump to be placed in service as follows:

NOTE (1): Those steps of this procedure designated by an asterisk (*) immediately to left of step number require entry(ies) to be recorded on Attachment A.

NOTE (2): Following will allow remote manual operation of RHR PP A/C(B/D) MIN FLOW HV-251-F007A(B) but defeats automatic opening and closing.

3.5.1 For RHR Pump A or RHR Pump C:

- a. CLOSE RHR PP A/C MIN FLOW HV-251-F007A.
- b. LIFT lead on terminal 11 on Terminal Board AAA6 inside RHR/HPCI/SBLC Relay Panel Division 1 2C617.
- c. PLACE Caution Tag stating "Loss of Automatic Minimum Flow Protection" on RHR Pump 2P202A and RHR Pump 2P202C control switches.

*

3.5.2 For RHR Pump B or RHR Pump D:

- a. CLOSE RHR PP B/D MIN FLOW HV-251-F007B.
- b. LIFT lead at terminal 18 on Terminal Board AAA5 inside RHR/RCIC Relay Panel Division 2 2C618.
- c. PLACE Caution Tag stating "Loss of Automatic Minimum Flow Protection" on RHR Pump 2P202B and RHR Pump 2P202D control switches.

*

3.6 To defeat pump start suction interlock for RHR Pump to be used:

NOTE: Since all normal suction valves to RHR Pump to be used will be closed, RHR Pump would trip immediately after starting unless interlock defeated.

3.6.1 For RHR Pump A or RHR Pump C, at RHR/HPCI/SBLC Relay Panel Division 1 2C617:

- * a. For RHR Pump A, LIFT lead on terminal 14 on Terminal Board EEE4.
- * b. For RHR Pump C, LIFT lead on terminal 2 on Terminal Board EEE3.

3.6.2 For RHR Pump B or RHR Pump D, at RHR/RCIC Relay Panel Division 2 2C618:

- * a. For RHR Pump B, LIFT lead on terminal 16 on Terminal Board DDD7.
- * b. For RHR Pump D, LIFT lead on terminal 4 on Terminal Board DDD6.

3.7 If Condensate Transfer is available, ESTABLISH following alignment and vent operations in preparation of placing Fuel Pool Cooling Mode of RHR in service. (PROCEED to Section 3.8 if Condensate Transfer is not available.)

3.7.1 CLOSE Fuel Pool Skimmer Surge Tk to Fuel Pool Clg Pumps 253001.

3.7.2 OPEN Fuel Pool Skimmer Surge Tk to RHR 253021.

3.7.3 If RHR Loop A to be used:

- a. CLOSE RHR PUMP A SUCT HV-251-F004A.
- b. CLOSE RHR PUMP C SUCT HV-251-F004C.
- c. OPEN SHUTDOWN CLG SUCT HV-251-F006A(C).

3.7.4 If RHR Loop B to be used:

- a. CLOSE RHR PUMP B SUCT HV-251-F004B.
- b. CLOSE RHR PUMP D SUCT HV-251-F004D.

- c. PLACE RHR LOOP A MOV OL BYPS HS-E11-2S62A keyswitch to TEST.
- d. CLOSE RHR PUMP A SUCT HV-251-F004A
- e. CLOSE RHR PUMP C SUCT HV-251-F004C
- f. OPEN SHUTDOWN CLG SUCT HV-251-F006B(D).
- g. Wait 2 minutes, then PLACE RHR LOOP A MOV OL BYPS HS-E11-2S62A keyswitch to NORM.

3.7.5 OPEN RHR Room B Drain Iso 261121.

3.7.6 OPEN S/D Cooling Ln Flush 251083.

CAUTION

PRIOR TO PERFORMING FOLLOWING STEP ASSURANCE SHOULD BE MADE THAT NO RHR SUCTION OR DISCHARGE FLOWPATH TO REACTOR VESSEL EXISTS.

- 3.7.7 FULL OPEN Shutdown Cooling Flush Valve HV-25186 using RHR SHUTDOWN CLG SUCTION FILL HIC-25186 controller.
- 3.7.8 OPEN S/D Cooling Ln Ib Vent 251F066.
- 3.7.9 UNCAP and OPEN S/D Cooling Ln Ob Vent 251090.
- 3.7.10 OBSERVE water flowing from S/D Cooling Ln Ob Vent 251090 with no air present.
- 3.7.11 CLOSE and CAP S/D Cooling Ln Ob Vent 251090.
- 3.7.12 CLOSE S/D Cooling Ln Ib Vent 251F066.
- 3.7.13 CLOSE RHR Room B Drain Iso 261121.
- 3.7.14 If RHR Loop B to be used:
 - a. RESTORE RHR LOOP A CROSS-TIE HV-251-F010A and RHR LOOP B CROSS-TIE HV-251-F010B to operable status as directed by Shift Supervision as follows:

- (1) ENSURE compliance with Technical Specification 3.5.1.

(2) To allow piping between cross-tie valves to pressurize, MANUALLY CRACK OPEN \geq 15% (approx 285 turns on the handwheel):

(a) RHR LOOP B CROSS-TIE HV-251-F010B.

(b) RHR LOOP A CROSS-TIE HV-251-F010A.

(3) CLOSE Loop A Crosstie Vlv HV251F010A supply breaker 2B216022.

(4) CLOSE Loop B Crosstie Vlv HV251F010B supply breaker 2B226064.

b. PLACE RHR LOOP A MOV OL BYPS HS-E11-2S62A keyswitch to TEST.

c. OPEN RHR LOOP A CROSS-TIE HV-251-F010A.

d. OPEN RHR LOOP B CROSS-TIE HV-251-F010B.

e. WAIT 2 minutes, then PLACE RHR LOOP A MOV OL BYPS HS-E11-2S62A keyswitch to NORM.

3.7.15 CHECK CLOSED Fuel Pool Fill from ESW 253090A.

3.7.16 CHECK CLOSED Fuel Pool Fill from ESW 253090B.

3.7.17 UNLOCK and OPEN RHR to Fuel Pool Clg and Clnup Return 251070.

NOTE: Next step will commence filling fuel pool. It will be necessary to fill to a level of less than 8 inches from top of curb around fuel pool or at Panel 2C644, \geq 817.7' (23.7 ft) on Fuel Pool Level/Temp Recorder LR/TR 25347 to obtain adequate level for RHR flow of approximately 6000 gpm.

CAUTION

CLOSELY MONITOR FUEL POOL LEVEL DURING FILLING. ADDITION OF COLD WATER CAN CAUSE LEVEL TO DROP.

3.7.18 Commence filling Fuel Pool as follows:

a. THROTTLE \approx one-third (1/3) OPEN Fuel Pool Fill Vlv from RHR 253070A,

AND

- b. THROTTLE \approx ONE-THIRD (1/3) OPEN Fuel Pool Fill Vlv from RHR 253070B.
- 3.7.19 When Skimmer Surge Tank level starts to increase, CLOSE Shutdown Cooling Flush Valve HV-25186 using RHR SHUTDOWN CLG SUCT FILL HIC-25186 controller.
- 3.7.20 UNLOCK and OPEN Fuel Pool Clg and Cleanup to RHR 251060.
- 3.7.21 REOPEN Shutdown Cooling Flush Valve HV-25186 using RHR SHUTDOWN CLG SUCT FILL HIC-25186 controller.
- 3.7.22 When fuel pool level is less than 8 inches from top of curb around fuel pool or at Panel 2C644, \geq 817.7' (23.7 ft) on LR/TR 25347, CLOSE Shutdown Cooling Flush Valve HV-25186 using RHR SHUTDOWN CLG SUCT FILL HIC-25186 controller.
- 3.7.23 CLOSE Fuel Pool Fill Vlv from RHR 253070A and 253070B.
- 3.8 If Condensate Transfer is not available, ESTABLISH following alignment and vent operations in preparation of placing Fuel Pool Cooling Mode of RHR in service.
 - 3.8.1 CLOSE Fuel Pool Skimmer Surge TK to Fuel Pool Clg Pumps 253001.
 - 3.8.2 If RHR Loop A to be used:
 - a. CLOSE RHR PUMP A SUCT HV-251-F004A.
 - b. CLOSE RHR PUMP C SUCT HV-251-F004C.
 - c. OPEN SHUTDOWN CLG SUCT HV-251-F006A(C).
 - 3.8.3 If RHR Loop B to be used:
 - a. CLOSE RHR PUMP B SUCT HV-251-F004B.
 - b. CLOSE RHR PUMP D SUCT HV-251-F004D.
 - c. PLACE RHR LOOP A MOV OL BYPS HS-E11-2S62A keyswitch to TEST.
 - d. CLOSE RHR PUMP A SUCT HV-251-F004A.
 - e. CLOSE RHR PUMP C SUCT HV-251-F004C.
 - f. OPEN SHUTDOWN CLG SUCT HV-251-F006B(D).

- g. RESTORE RHR LOOP A CROSS-TIE HV-251-F010A and RHR LOOP B CROSS-TIE HV-251-F010B to operable status as directed by Shift Supervision as follows:
- (1) ENSURE compliance with Technical Specification 3.5.1.
 - (2) To allow piping between cross-tie valves to pressurize, MANUALLY CRACK OPEN \geq 15% (approx 285 turns on handwheel):
 - (a) RHR LOOP B CROSS-TIE HV-251-F010B.
 - (b) RHR LOOP A CROSS-TIE HV-251-F010A.
 - (3) CLOSE Loop A Crosstie Vlv HV251F010A supply breaker 2B216022.
 - (4) CLOSE Loop B Crosstie Vlv HV251F010B supply breaker 2B226064.
- h. OPEN RHR LOOP A CROSS-TIE HV-251-F010A.
- i. OPEN RHR LOOP B CROSS-TIE HV-251-F010B.
- j. WAIT 2 minutes, then PLACE RHR LOOP A MOV OL BYPS HS-E11-2S62A keyswitch to NORM.
- 3.8.4 UNLOCK and OPEN Fuel Pool Clg and Cleanup to RHR 251060.
- 3.8.5 UNLOCK and OPEN RHR to Fuel Pool Clg and Cleanup Return 251070.
- 3.8.6 OPEN Fuel Pool Fill Vlv from RHR 253070A.
- 3.8.7 OPEN Fuel Pool Fill Vlv from RHR 253070B.
- 3.8.8 OPEN RHR Room B Drain Iso 261121.
- 3.8.9 SLOWLY OPEN Fuel Pool Skimmer Surge Tk to RHR 253021.

NOTE: Next step commences filling fuel pool. It will be necessary to fill to a level of less than 8 inches from top of curb around fuel pool or at Panel 2C644, $\geq 817.7'$ (23.7 ft) on Fuel Pool Level/Temp Recorder LR/TR 25347 to obtain adequate level for RHR flow of approximately 6000 gpm.

CAUTION

CLOSELY MONITOR FUEL POOL LEVEL DURING FILLING. ADDITION OF COLD WATER CAN CAUSE LEVEL TO DROP.

- 3.8.10 COMMENCE filling Fuel Pool using ESW in accordance with Section 3.6 of ON-235-001.
- 3.8.11 When Skimmer Surge Tank level reaches 100%, vent RHR piping as follows:
- a. OPEN S/D Cooling Ln Ib Vent 251F066.
 - b. UNCAP and OPEN S/D Cooling Ln Ob Vent 251090.
 - c. OBSERVE water flowing from S/D Cooling Ln Ob Vent 251090 with no air present.
 - d. CLOSE and CAP S/D Cooling Ln Ob Vent 251090.
 - e. CLOSE S/D Cooling Ln Ib Vent 251F066.
 - f. CHECK RHR LOOP A(B) discharge piping filled and vented in accordance with OP-249-001.
 - g. UNCAP and OPEN RHR Wtr Supply Line Vent 253808.
 - h. OBSERVE water flowing from RHR Wtr Supply Line Vent 253808 with no air present.
 - i. CLOSE and CAP RHR Wtr Supply Line Vent 253808.
 - j. CLOSE RHR Room B Drain Iso 261121.

3.8.12 STOP filling fuel pool when following conditions are met:

a. Fuel pool level is < 8 inches from top of curb around fuel pool.

OR

b. At Panel 2C644, $\geq 817.7'$ (23.7 ft.) on Fuel Pool Level/Temp Recorder LR/TR 25347.

AND

c. RHR is vented per step-3.8.11.

3.8.13 CHECK CLOSED Fuel Pool Fill from ESW 253090A.

3.8.14 CHECK CLOSED Fuel Pool Fill from ESW 253090B.

3.8.15 CLOSE Fuel Pool Fill Vlv from RHR 253070A and 253070B.

3.9 PLACE RHR in Fuel Pool Cooling assist mode as follows:

3.9.1 PLACE Emergency Service Water System in operation to supply RHR Pump and Room Cooler in accordance with OP-054-001.

3.9.2 PLACE RHR Service Water System to RHR Heat Exchanger to be used in accordance with OP-216-001.

3.9.3 CHECK RHR LOOP A(B) filled and vented and pumps ready for operation as follows:

a. Discharge piping and pumps in accordance with OP-249-001. Venting may be skipped if already performed in step 3.8.11.

b. Suction piping in accordance with steps 3.7.8 through 3.7.12 or step 3.8.11 of this procedure.

3.9.4 To prevent Keep Fill from filling Fuel Pool:

a. If RHR Loop A to be used, CLOSE Loop A Keep Fill 251F092A.

b. If RHR Loop B to be used, CLOSE Loop A and Loop B Keep Fill 251F092A and 251F092B.

3.9.5 NOTIFY I&C to fill and vent affected instruments.

CAUTION (1)

CLOSELY MONITOR FUEL POOL LEVEL WHEN RHR IS PLACED IN SERVICE. AS POOL IS COOLED, LEVEL MAY DECREASE.

CAUTION (2)

IN NEXT TWO STEPS, IF MINIMUM FLOW OF GREATER THAN 2000 GPM CANNOT BE OBTAINED WITHIN 60 SECONDS AFTER RHR PUMP START, IT MUST BE SHUTDOWN TO PREVENT PUMP DAMAGE.

3.9.6 START RHR Pump 2P202A(B) or RHR Pump 2P202C(D) as applicable.

3.9.7 ESTABLISH initial flow of 4000 GPM as follows:

a. THROTTLE OPEN Fuel Pool Fill Vlv from RHR 253070A.

AND

b. THROTTLE OPEN Fuel Pool Fill Vlv from RHR 253070B.

3.9.8 ADJUST fuel pool level to stabilize level to less than 8 inches from top of curb around fuel pool or $\geq 817.7'$ (23.7 ft) on Fuel Pool Level/Temp Recorder LR/TR 25347 as follows:

a. If Condensate Transfer is available, use RHR SHUTDOWN CLG SUCT FILL HIC-25186 controller.

b. If Condensate Transfer is not available, use A or B Loop of ESW per Section 3.6 of ON-235-001 as follows:

(1) THROTTLE CLOSED Fuel Pool Fill Vlv from RHR 253070A(B) and THROTTLE Open Fuel Pool Fill Vlv from RHR 253070B(A) to maintain stable flow.

(2) When Fuel Pool Fill Vlv from RHR 253070A(B) is full closed, FILL Fuel Pool using A(B) Loop of ESW per ON-235-001.

(3) STOP filling Fuel Pool using ESW per ON-235-001 when desired level is achieved.

- (4) CHECK CLOSED Fuel Pool Fill from ESW
253090A(B).

CAUTION

WHEN PERFORMING NEXT STEP DO NOT ALLOW RHR FLOW TO BE BELOW 2000 GPM.

3.9.9 EQUALLY POSITION following until desired flowrate achieved:

- a. Fuel Pool Fill Vlv from RHR 253070A.
- b. Fuel Pool Fill Vlv from RHR 253070B.

NOTE: If required, a maximum flow of 6000 gpm may be achieved by performing steps 3.9.7 thru 3.9.9 repeatedly, allowing stabilized conditions to be reached after each series of steps until desired flow is achieved.

3.9.10 When desired flow reached, ESTABLISH desired cooling by throttling HX A(B) SHELL SIDE BYPS HV-251-F048A(B).

3.9.11 CHECK RHR Pump Room Cooler 2V210A(B) or 2V210C(D) STARTED.

3.9.12 WAIT 2 minutes, then PLACE RHR LOOP A(B) MOV OL BYPS HS-E11-2S62A(B) keyswitch to NORM.

3.10 SHUT DOWN RHR Fuel Pool Cooling as follows:

- 3.10.1 STOP RHR PUMP 2P202A(B) or 2P202C(D) as applicable.
- 3.10.2 CLOSE and LOCK RHR to Fuel Pool Clg and Clnup Return 251070.
- 3.10.3 CLOSE and LOCK Fuel Pool Clg and Clnup to RHR 251060.
- 3.10.4 To restore Keep Fill System:
 - a. If RHR Loop A was used, OPEN Loop A Keep Fill 251F092A.
 - b. If RHR Loop B was used, OPEN Loop A and Loop B Keep Fill 251F092A and 251F092B.
- 3.10.5 CLOSE S/D Cooling Ln Flush Vlv 251083.
- 3.10.6 CHECK RHR Pump Room Cooler 2V210A(B) or 2V210C(D) STOPPED.
- 3.10.7 PLACE RHR LOOP A(B) MOV OL BYPS HS-E11-2S62A(B) keyswitch to TEST.
- 3.10.8 FULL OPEN HX A(B) SHELL SIDE BYPS HV-251-F048A(B).
- 3.10.9 If RHR Loop B was used:
 - a. PLACE RHR LOOP A MOV OL BYPS HS-E11-2S62A keyswitch to TEST.
 - b. CLOSE LOOP A CROSS-TIE HV-251-F010A.
 - c. CLOSE LOOP B CROSS-TIE HV-251-F010B.
 - d. WAIT 2 minutes, then PLACE RHR LOOP A MOV OL BYPS HS-E11-2S62A keyswitch to NORM.
 - e. RESTORE RHR LOOP A CROSS-TIE HV-251-F010A and RHR LOOP B CROSS-TIE HV-251-F010B to Standby alignment as directed by Shift Supervision as follows:
 - (1) OPEN Loop A Crosstie Vlv HV251F010A supply breaker 2B216022.
 - (2) OPEN Loop B Crosstie Vlv HV251F010B supply breaker 2B226064.

3.10.10 REPLACE leads lifted in step 3.5 for defeating minimum flow valve interlock as follows:

- * a. For RHR Pump A or RHR Pump C, REINSTALL lead on terminal 11 of Terminal Board AAA6 inside RHR/HPCI/SBLC Relay Panel Division 1 2C617.
- b. REMOVE Caution Tags for "Loss of Automatic Minimum Flow Protection" on RHR PUMP 2P202A and 2P202C control switches.
- * c. For RHR Pump B or RHR Pump D, REINSTALL lead on terminal 18 of Terminal Board AAA5 inside RHR/RCIC Relay Panel Division 2 RHR 2C618.
- d. REMOVE Caution Tags for "Loss of Automatic Minimum Flow Protection" on RHR Pump 2P202B and RHR Pump 2P202D control switches.

3.10.11 REPLACE leads lifted in step 3.6 for defeating Pump Start Suction interlock as follows:

- a. For RHR Pump A or RHR Pump C, at RHR/HPCI/SBLC Relay Panel Division 1 2C617.
 - * (1) For RHR Pump A, REINSTALL lead on terminal 14 on Terminal Board EEE4.
 - * (2) For RHR Pump C, REINSTALL lead on terminal 2 on Terminal Board EEE3.
- b. For RHR Pump B or RHR Pump D, at RHR/RCIC Relay Panel Division 2 2C618.
 - * (1) For RHR Pump B, REINSTALL lead on terminal 16 on Terminal Board DDD7.
 - * (2) For RHR Pump D, REINSTALL lead on terminal 4 on Terminal Board DDD6.

3.10.12 If desired, SHUT DOWN RHR Service Water System in accordance with OP-216-001.

3.10.13 If desired, SHUT DOWN Emergency Service Water System in accordance with OP-054-001.

3.10.14 WAIT 2 minutes, then PLACE RHR LOOP A(B) MOV OL BYPS HS-E11-2S62A(B) keyswitch to NORM.

- 3.10.15 REALIGN Fuel Pool Cooling and Cleanup System as follows:
- a. CLOSE Fuel Pool Fill from RHR 253070A.
 - b. CLOSE Fuel Pool Fill from RHR 253070B.
 - c. CLOSE Fuel Pool Skimmer Surg Tk to RHR 253021.
 - d. OPEN Fuel Pool Skimmer Surg Tk to Fuel Pool Clg Pumps 253001.
 - e. ADJUST Skimmer Surge Tank 2T208 level as necessary in accordance with OP-235-001.
- 3.10.16 RESTORE RHR System to normal standby alignment for Automatic Response in accordance with OP-249-001.
- 3.10.17 RESTORE Fuel Pool Cooling and Cleanup System to service in accordance with OP-235-001.

MINIMUM FLOW VALVE AND PUMP START SUCTION INTERLOCK

LEAD REMOVAL

PART A

Approval for lifting leads:

		Shift Supervision	Date	Time
			<u>CONFIRM</u>	<u>#INDEPENDENT VERIFICATION</u>
3.5	Defeat minimum flow valve interlock for RHR Pump to be used by lifting lead on following terminal:			
3.5.1.b	Terminal 11 on Terminal Board AAA6 in panel 2C617 for RHR Pumps A or C.			
3.5.2.b	Terminal 18 on Terminal Board AAA5 in panel 2C618 for RHR Pumps B or D.			
3.6	Defeat Pump start suction interlock for RHR Pump to be used by lifting lead on following terminal:			
3.6.1.a	Terminal 14 on Terminal Board EEE4 in panel 2C617 for RHR Pump A.			
3.6.1.b	Terminal 2 on Terminal Board EEE3 in panel 2C617 for RHR Pump C.			
3.6.2.a	Terminal 16 on Terminal Board DDD7 in panel 2C618 for RHR Pump B.			
3.6.2.b	Terminal 4 on Terminal Board DDD6 in panel 2C618 for RHR Pump D.			

Completed: _____
 Shift Supervision / Date / Time

Independent verifier may NOT accompany verifier (TYPE 2).

MINIMUM FLOW VALVE AND PUMP START SUCTION INTERLOCK

LEAD RESTORATION

PART B

Approval for restoration of leads: _____ / _____ / _____
 Shift Supervision / Date / Time

		<u>CONFIRM</u>	<u>#INDEPENDENT VERIFICATION</u>
3.10.10	Reestablishing minimum flow valve interlock for RHR Pump used by reinstalling lead on following terminal:		
3.10.10.a	Terminal 11 on Terminal Board AAA6 in panel 2C617 for RHR Pumps A or C.	_____	_____
3.10.10.c	Terminal 18 on Terminal Board AAA5 in panel 2C618 for RHR Pumps B or D.	_____	_____
3.10.11	Reestablishing Pump start suction interlock for RHR Pump used by reinstalling lead on following terminal:		
3.10.11.a(1)	Terminal 14 on Terminal Board EEE4 in panel 2C617 for RHR Pump A.	_____	_____
3.10.11.a(2)	Terminal 2 on Terminal Board EEE3 in panel 2C617 for RHR Pump C.	_____	_____
3.10.11.b(1)	Terminal 16 on Terminal Board DDD7 in panel 2C618 for RHR Pump B.	_____	_____
3.10.11.b(2)	Terminal 4 on Terminal Board DDD6 in panel 2C618 for RHR Pump D.	_____	_____

Completed: _____ / _____ / _____
 Shift Supervision / Date / Time

Independent verifier may NOT accompany verifier (TYPE 2).