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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

PLANT PROCEDURES MANUAL

WNP-2

PROCEDURE NUMBER	APPROVED	DATE
*5.0.0	JW Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.0	PRECAUTIONS	
TITLE		
*5.0.0	EMERGENCY PROCEDURE GENERAL PRECAUTIONS	

The following Emergency Procedure Cautions are generally applicable at all times.

CAUTION #1

Use these Emergency Procedures with the Emergency Procedure Flow Chart. Observe the boxed requirements for exiting one procedure and entering another.

CAUTION #2

Monitor the general state of the plant. If an entry condition for an Emergency Procedure occurs, enter that procedure. When it is determined that an emergency no longer exists, return to normal plant operating procedures.

CAUTION #3

Monitor RPV water level and pressure and primary containment temperature and pressure from multiple indications.

CAUTION #4

If a safety function initiates automatically, assume a true initiating event has occurred unless otherwise confirmed by at least two independent indications.

CAUTION #5

Whenever RHR is in the LPCI mode, inject through the heat exchangers as soon as possible.

CAUTION #6

Whenever the following instruments read below the Limiting Level in the Table, the actual RPV water level may be anywhere below the elevation of the lower instrument tap.

Instrument	Range	Limiting Level
MS-LI-605, Shutdown	0-400 in.	197 in.
RFW-LR-608, Upset	0-180 in.	160 in.

CAUTION #7

If HPCS SUCTION SWITCHOVER SUPPRESSION POOL LEVEL HIGH or HPCS/RCIC SUCTION SWITCHOVER CST LEVEL LOW alarms occur, confirm automatic transfer of or manually transfer HPCS and RCIC suction from the condensate storage tank to the suppression pool. RCIC suction will not auto transfer on high suppression pool level.

CAUTION #8

Notify the Shift Manager to classify any entry into these Emergency Procedures in accordance with PPM 13.1.1, Classifying The Emergency, and initiate the appropriate action plan.

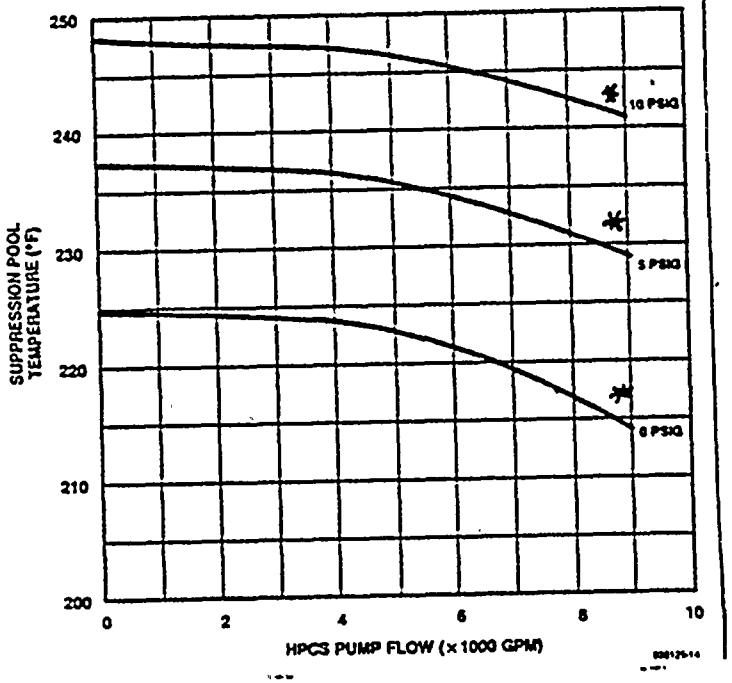
CAUTION #9

If during execution of these procedures, core damage is indicated and cooldown to cold shutdown is required, use PPM 5.3.5, Alternate Shutdown Cooling.

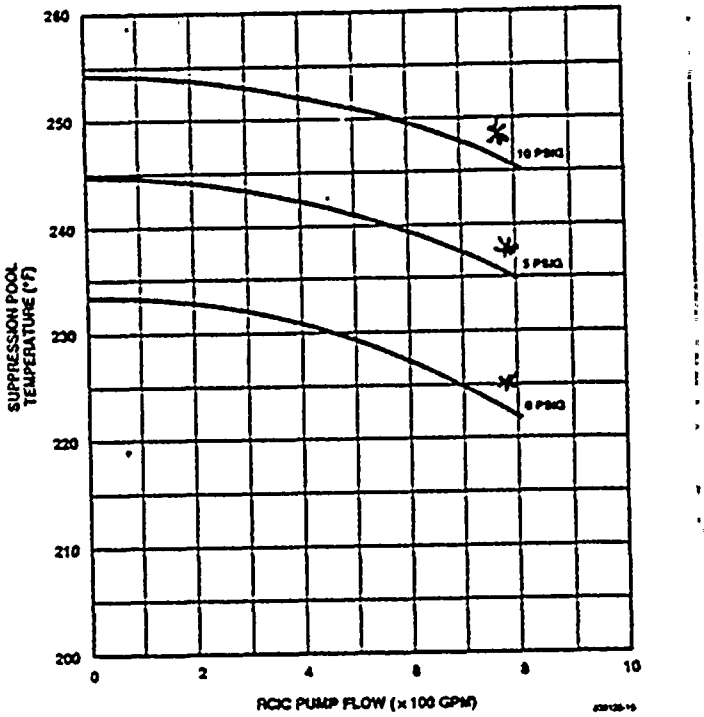
CAUTION #10

Observe NPSH requirements for pumps taking suction from the suppression pool. If core cooling is adequate, throttle pump flows to pressure NPSH.

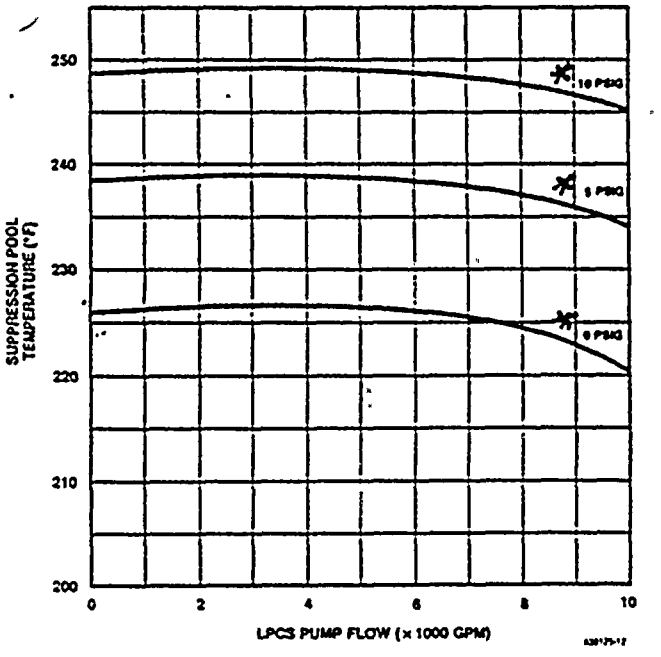
HPCS NPSH LIMIT



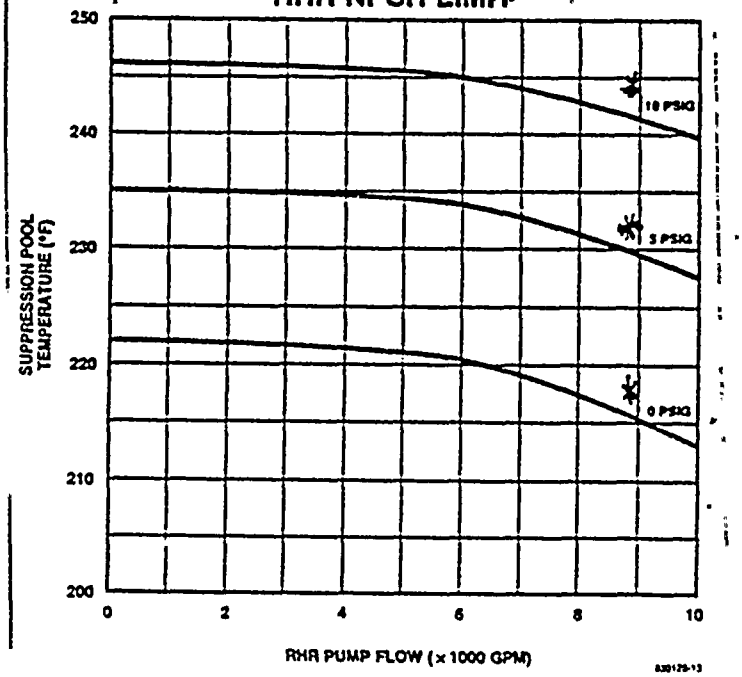
RCIC NPSH LIMIT



LPCS NPSH LIMIT



RHR NPSH LIMIT



* - Suppression Chamber Pressure (psig)
Suppression Pool at Normal Level

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

PLANT PROCEDURES MANUAL

WNP-2

PROCEDURE NUMBER	APPROVED	DATE
*5.0.1	J Martin	03/14/84

VOLUME NAME: 5 EMERGENCY PROCEDURES

SECTION: 5.0 PRECAUTIONS

TITLE: *5.0.1 EMERGENCY OPERATING PROCEDURE FLOW CHART

The controlled copies of the "Emergency Operating Procedure Flow Chart" are located in the Main Control Room, Technical Support Center and WNP-2 Simulator.

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PROCEDURE NUMBER	APPROVED	DATE
*5.1.1	GW Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.1	RPV CONTROL	
TITLE		
*5.1.1	RPV LEVEL CONTROL (RPV/L)	

5.1.1.1 Purpose

The purpose of this procedure is to restore and maintain RPV water level within a satisfactory range.

5.1.1.2 Entry Conditions

Entry conditions for this procedure are any of the following:

1. RPV water level below + 13.0 in.,
2. RPV pressure above 1037 psig,
3. Drywell pressure above 1.65 psig,
4. A condition which requires MSIV isolation,
5. A condition which requires reactor scram and reactor power is above 5% or cannot be determined.

5.1.1.3 Operator Actions

1. If reactor scram has not been initiated, initiate reactor scram.
2. Place the reactor mode switch in SHUTDOWN.
3. Irrespective of the entry condition, execute this procedure concurrently with:
   a. PPM 5.1.2, RPV Pressure Control (RPV/P)
   b. PPM 5.1.3, Reactor Power Control (RPV/Q)

4. Monitor and control RPV water level using the following level instrumentation:

Indicator/Recorder	Range
MS-LR-615	Fuel
MS-LI-610	Fuel
MS-LR-623A	Wide
MS-LR-623B	Wide
MS-LI-604	Wide
RFW-LI-606A	Narrow
RFW-LI-606B	Narrow
RFW-LI-606C	Narrow

5. Confirm initiation of any of the following:

   a. MSIV Closure

   b. ECCS

   c. Emergency Diesel Generators

   Initiate any of those which should have initiated but did not.

If while executing Step 6:

1. Boron injection is required, exit this procedure and enter contingent PPM 5.3.7, Level/Power Control.

2. RPV water level cannot be determined, exit this procedure and enter contingent, PPM 5.3.6, RPV Flooding.

3. RPV Flooding is required, exit this procedure and enter contingent PPM 5.3.6, RPV Flooding.

CAUTION

If HPCS SUCTION SWITCHOVER SUPP POOL LEVEL HIGH or HPCS (or RCIC) SUCTION SWITCHOVER CST LEVEL LOW alarms occur, confirm automatic transfer of or manually transfer HPCS and RCIC suction from the condensate storage tanks to the suppression pool. RCIC suction will not auto transfer on high suppression pool level.

RPV/L

CAUTION

Do not secure or place an ECCS in MANUAL mode unless by at least two independent indications, 1) misoperation in AUTOMATIC mode is confirmed or 2) adequate core cooling is assured. If an ECCS is placed in MANUAL mode, it will not initiate automatically. Make frequent checks of the initiating or controlling parameter; when manual operation is no longer required, restore the system to AUTOMATIC/STANDBY mode if possible.

CAUTION

If a high drywell pressure ECCS initiation signal (1.65 psig) occurs or exists while depressurizing, prevent injection from those LPCS and LPCI pumps not required to assure adequate core cooling prior to reaching their maximum injection pressures. When the high drywell pressure ECCS initiation signal clears, restore LPCS and LPCI to AUTOMATIC/STANDBY mode.

6. Restore and maintain RPV water level between +13.0 in. and +54.5 in. with one or more of the following systems:

System	RPV Pressure Range
a. Feedwater	1130-160 psig
b. CRD	1130-0 psig

CAUTION

Do not throttle the RCIC turbine below 1000 rpm.

c. RCIC	1130-57 psig
d. HPCS	1130-0 psig
e. Condensate Booster	460-0 psig
f. LPCS	360-0 psig
g. LPCI	220-0 psig
h. Condensate	160-0 psig

RPV/L

7. If RPV water level cannot be restored and maintained above +13.0 in. maintain RPV water level above -161 in.

8. If RPV water level can be maintained above - 161 in., (TAF), prevent automatic RPV depressurization by inhibiting ADS.

9. If degraded core conditions exist, close feedwater block valves RFW-V-65A and RFW-V-65B within 20 minutes following cessation of feedwater flow.

10. If high drywell pressure is indicated, manually initiate the MSLC System when the RPV has depressurized to 35 psig. Refer to PPM 2.2.6, Main Steam, Section B.

If RPV water level cannot be maintained above -161 in., exit this procedure and enter PPM 5.3.1, Level Restoration.

If alternate shutdown cooling is required, exit this procedure and enter PPM 5.3.5, Alternate Shutdown Cooling.

11. Proceed to cold shutdown in accordance with PPM 3.2.1, Normal Shutdown to Cold Shutdown when level is restored to above + 13.0 in.

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PROCEDURE NUMBER	APPROVED	DATE
*5.1.2	GW Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.1	RPV CONTROL	
TITLE		
*5.1.2	RPV PRESSURE CONTROL (RPV/P)	

5.1.2.1 Purpose

The purpose of this procedure is to control pressure and cool down the RPV to cold shutdown conditions (100°F - 200°F).

5.1.2.2 Entry Conditions

Entry conditions for this procedure are any of the following:

1. RPV water level below +13.0 in.,
2. RPV pressure above 1037 psig,
3. Drywell pressure above 1.65 psig,
4. A condition which requires MSIV isolation,
5. A condition which requires reactor scram and reactor power is above 5% or cannot be determined.

5.1.2.3 Operator Actions

1. If reactor scram has not been initiated, initiate a reactor scram.
2. Place the reactor mode switch in SHUTDOWN.
3. Irrespective of the entry condition, execute this procedure concurrently with:
   a. PPM 5.1.1, RPV Level Control (RPV/L)
   b. PPM 5.1.3, Reactor Power Control (RPV/Q)
4. Monitor and control reactor pressure.

CAUTION

Cooldown rates above 100°F/hr may be required to accomplish the following step.

5. If while executing the following steps emergency depressurization is anticipated, and boron injection is not required, rapidly depressurize the RPV with the main turbine bypass valves.

If while executing the following steps:

1. Emergency RPV depressurization or RPV flooding is required and less than 7 SRVs are open, exit this procedure and enter PPM 5.3.2, Emergency RPV Depressurization.

2. RPV flooding is required and at least 7 SRVs are open, exit this procedure and enter PPM 5.3.6, RPV Flooding.

6. If any SRV is cycling, manually open SRVs until RPV pressure drops to 930 psig.

CAUTION

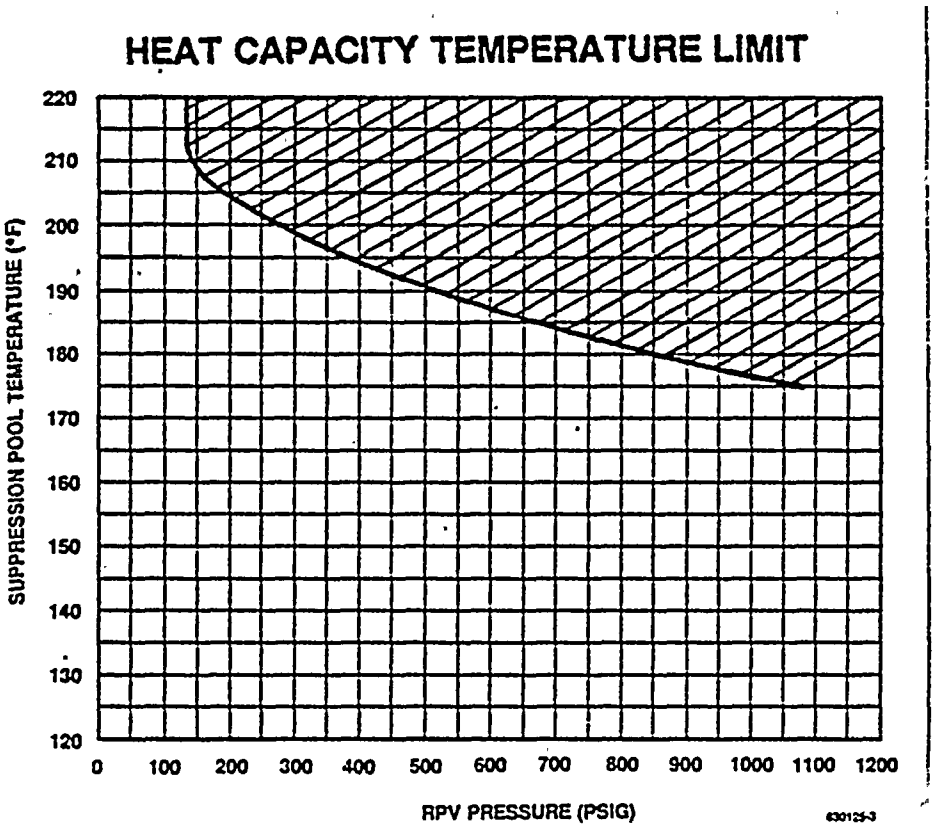
Cooldown rates above 100°F/hr may be required to accomplish the following step.

CAUTION

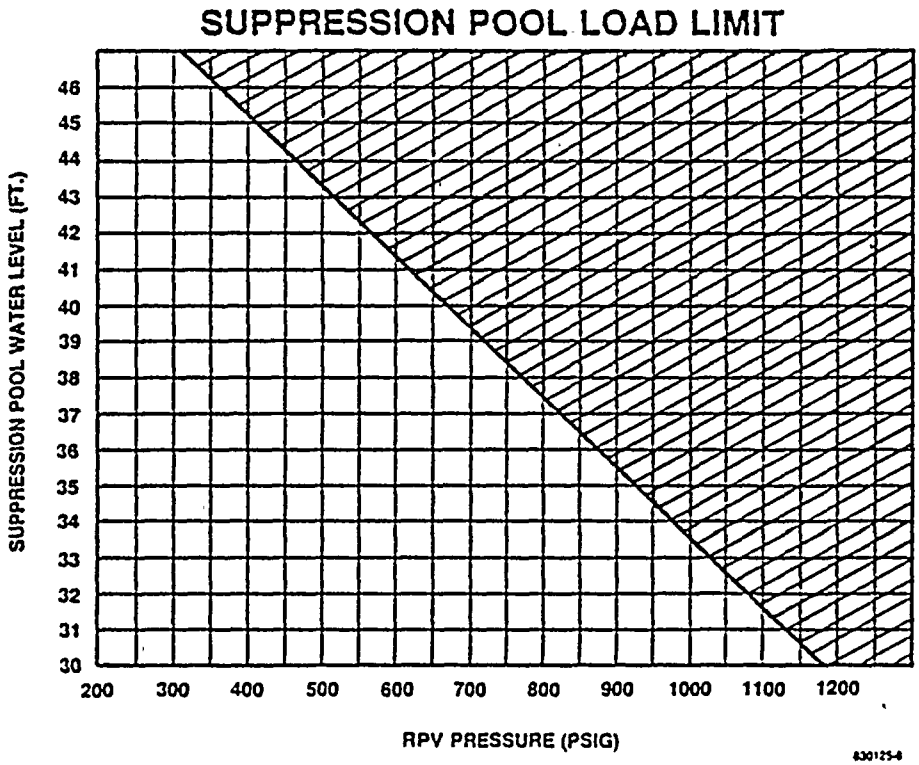
Do not depressurize the RPV below 60 psig unless motor driven pumps sufficient to maintain RPV water level are running and available for injection.

7. If while executing the following steps:

   a. Suppression pool temperature cannot be maintained below the Heat Capacity Temperature Limit, maintain RPV pressure below the Limit.



b. Suppression pool water level cannot be maintained below the Suppression Pool Load Limit, maintain RPV pressure below the Limit.



If while executing the following steps, steam cooling is required, exit this procedure and enter PPM 5.3.3, Steam Cooling.

8. If while executing the following steps:

- o boron injection is required and
- o the main condenser is available, and
- o there has been no indication of gross fuel failure or steam line break

open MSIVs to re-establish the main condenser as a heat sink.

CAUTION

Bypassing RPV low water level MSIV isolation interlocks may be required to accomplish the following step.

8.1 If required, bypass RPV low water level MSIV isolation interlocks by installing the following jumpers:

Location	Relay	Contact
H13-P609	K1A	1-2
H13-P609	K1C	1-2
H13-P611	K1B	1-2
H13-P611	K1D	1-2

8.2 Isolate and pressurize MS lines.

a. Close or confirm MS drain line trap bypass/isolation valves closed:

MS-V-71
MS-V-68
MS-V-69
MS-V-21
MS-V-156

b. Open outboard MSIV's

MS-V-28A
MS-V-28B
MS-V-28C
MS-V-28D

c. Open MS line drains to initiate inboard MSIV pressure equalization.

MS-V-16
MS-V-19
MS-V-20

d. Close SJAE Steam Supply Valves

MS-V-110A
MS-V-110B

e. Close offgas valves to save condenser vacuum

OG-V-125A
OG-V-125B

f. Close offgas preheater steam supply valves

MS-V-115A
MS-V-115B

8.3 When MS lines have repressurized and inboard MSIV differential pressure is 200 psid or less, open:

MS-V-22A
MS-V-22B
MS-V-22C
MS-V-22D

8.4 Return Air Removal and Offgas Systems to service.

CAUTION

Do not depressurize the RPV below 60 psig unless motor driven pumps sufficient to maintain RPV water level are running and available for injection.

9. Control RPV pressure below 1075 psig with the main turbine bypass valves. RPV pressure control may be augmented by one or more of the following systems:

CAUTION

The recommended SRV opening sequence is:

1.	MS-RV-5B	8.	MS-RV-1A	15.	MS-RV-2D
2.	MS-RV-3D	9.	MS-RV-2B	16.	MS-RV-2A
3.	MS-RV-5C	10.	MS-RV-1C	17.	MS-RV-3B
4.	MS-RV-4D	11.	MS-RV-1B	18.	MS-RV-3A
5.	MS-RV-4B	12.	MS-RV-2C		
6.	MS-RV-4A	13.	MS-RV-1D		
7.	MS-RV-4C	14.	MS-RV-3C		

a. SRV's; only if suppression pool water level is above 17'. If the CIA System (including nitrogen backup bottles) is or becomes unavailable, depressurize with sustained SRV opening.

b. RCIC

c. SJAE

d. Sealing Steam

e. RFW Turbines

f. Off Gas Preheaters

g. RWCU (recirculation through the heat exchanger) if no boron has been injected into the RPV.

h. Main steam line drains. Open MS-V-16, MS-V-19 and MS-V-21.

i. RWCU (blowdown mode) if no boron has been injected into the RPV. Instruct the HP/Chemist to sample the RPV coolant in accordance with PPM 12.10.7, Post Accident Sampling and Analysis and report results to the Control Room prior to initiating blowdown. Do not blowdown if sample results indicate core damage.

10. If while executing the following steps, the reactor is not shutdown, return to Step 9 for RPV pressure control.

CAUTION

Do not depressurize the RPV below 60 psig unless motor driven pumps sufficient to maintain RPV water level are running and available for injection.

CAUTION

Cooldown rates above 100°F/hr may be required to conserve RPV water inventory, protect primary containment integrity, or limit radioactive release to the enviro-ment.

11. When either:

    a. All control rods are inserted beyond position 06, or

    b. SLC-TK-1 or 2050 lb. of boric acid and 2130 lb. of borax in solution have been injected into the RPV, or

    c. The reactor is shutdown and no boron has been injected in the RPV,

    d. Depressurize the RPV and maintain the cooldown rate below 100°F/hr.

CAUTION

If continuous LPCI operation is required to assure adequate core cooling, do not divert all RHR pumps from LPCI mode.

12. When the RHR shutdown cooling interlocks clear, initiate the shutdown cooling mode of RHR.

13. If the RHR shutdown cooling mode cannot be established and further cooldown is required, continue to cooldown using one or more of the systems used for depressurization (in Step 9).

If RPV cooldown is required but cannot be accomplished and all control rods are inserted beyond position 06, alternate shutdown cooling is required; exit this procedure and enter PPM 5.3.5, Alternate Shutdown Cooling.

14. Proceed to cold shutdown in accordance with PPM 3.2.1, Normal Shutdown to Cold Shutdown.

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PROCEDURE NUMBER	APPROVED	DATE
*5.1.3	JW Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.1	RPV CONTROL	
TITLE		
*5.1.3	REACTOR POWER CONTROL (RPV/Q)	

5.1.3.1 Purpose

The purpose of this procedure is to control power and shutdown the reactor.

5.1.3.2 Entry Condition

Any condition which requires reactor scram and reactor power remains above 5% on the APRMs or cannot be determined.

5.1.3.3 Operator Actions

1. If auto scram has not been initiated, initiate manual scram.
2. Place the reactor mode switch in SHUTDOWN.
3. Execute this procedure concurrently with:
   a. PPM 5.1.1, RPV Level Control (RPV/L)
   b. PPM 5.1.2, RPV Pressure Control (RPV/P)
4. Monitor and control reactor power.

If while executing the following steps:

1. All control rods are inserted beyond position 06, terminate boron injection exit this procedure and enter PPM 3.3.1, Reactor Scram.

2. The reactor is shutdown and no boron has been injected into the RPV, exit this procedure and enter PPM 3.3.1, Reactor Scram.

5. If the MSIV's are open and the T-G is on line, confirm or initiate recirculation FCV runback to minimum.

6. If reactor power is above 5% after FCV runback or cannot be determined, trip the recirculation pumps to off.

NOTE

Execute Step 7 and Step 8 concurrently.

CAUTION

Manually trip the SLC pumps when SLC-TK-1 level drops to 100 gal.

7. If the reactor cannot be shutdown before suppression pool temperature reaches 110°F, boron injection is required; inject boron into the RPV with SLC and prevent automatic initiation of ADS.

7.1 Monitor reactor power and SLC-TK-1 level. If boron cannot be injected into the RPV with SLC, perform:

a. Step 8.7 if RCIC is operable, or

b. Step 8.8 if RWCU is operable and RCIC is not.

7.2 If boron is not being injected into the RPV by RWCU, confirm automatic isolation or manually isolate RWCU.

7.3 Continue to inject boron until 2050 lb boric acid and 2130 lb borax in solution with 3000 gal. (minimum) of water have been injected into the RPV.

RPV/Q

Exit this procedure and enter PPM 3.3.1, Reactor Scram.

8. Insert control rods as follows:

8.1 If any scram valve is not open:

a. Remove the following RPS fuses:

Fuse	Location
C72-F18A	H13-P609
C72-F18C	H13-P609
C72-F18E	H13-P609
C72-F18G	H13-P609
C72-F18B	H13-P611
C72-F18D	H13-P611
C72-F18F	H13-P611
C72-F18H	H13-P611

b. Close scram air header supply valve CRD-V-95 and open header vent valve CRD-V-64.

c. When control rods are not moving inward:

Replace RPS fuses
Close CRD-V-64
Open CRD-V-95

8.2 Reset the reactor scram. If the reactor scram cannot be reset:

a. Start both CRD pumps. If no CRD pump can be started, continue in this procedure at Step 8.6.

b. Close HCU accumulator charging water header valve CRD-V-34.

CAUTION

Defeating RSCS interlocks may be required to accomplish this step.

RPV/Q

c. Rapidly insert control rods manually until the reactor scram can be reset. If required, bypass the RWM and RSCS; bypass RSCS using individual CRD bypass switches at H13-P659.

d. Reset the reactor scram.

c. Open charging water valve CRD-V-34.

8.3 If the scram discharge volume vent and drain valves are open, initiate a manual scram.

a. If control rods moved inward, return to Step 8.2.

b. Reset the reactor scram. If the scram cannot be reset, continue in this procedure at Step 8.5.a.

c. Open the scram discharge volume vent and drain valves.

8.4 Scram control rods from the HCUs:

a. Establish communications between the HCUs and the Control Room.

b. Individually open the scram test switches for control rods not inserted beyond position 06.

c. When a control rod is not moving inward, close its scram test switch.

8.5 Reset the reactor scram. If the reactor scram cannot be reset.

a. Start both CRD pumps. If no CRD pump can be started, continue in this procedure at Step 8.6.

b. Close HCU accumulator charging water header valve CRD-V-34.

CAUTION

Defeating RSCS interlocks may be required to accomplish this step.

c. Rapidly insert control rods manually until the reactor scram can be reset. If required, bypass the RWM and RSCS; bypass RSCS using individual CRD bypass switches at H13-P659.

RPV/Q

8.6 If any control rod cannot be inserted beyond position 06:

a. Individually, direct the effluent from withdraw line vent valve CRD-V-102 to a contained liquid radwaste drain and open CRD-V-102.

b. When a control rod is not moving inward, close the associated CRD-V-102.

8.7 Inject boron using the RCIC System.

a. Execute Step b and Step c concurrently. If SLC-TK-1 level is less than 3000 gal., initiate Step d.

b. With a Port-A-Band saw, grinder or cutting torch, cut the gooseneck from the open end of the RCIC suction line 2 in. standpipe on the 471 ft. elevation.

c. Connect SLC-TK-1 discharge to the RCIC suction standpipe.

1) Verify SLC-V-1A and SLC-V-1B closed.
2) Remove either SLC-RV-29A or SLC-RV-29B.
3) Install a flanged hose adaptor to the mating discharge flange where the relief valve was removed.
4) Attach a 5/8 in. hose to the adaptor, route through the Reactor Building acess well to the 471 ft. elevation and insert approximately 3 ft. into the open standpipe.
5) Remove the orifice from the flanged joint (RHR-P-2C room above the sump). Replace with a 2-inch 150-lb Style CG flexatallic gasket and tighten flange.

d. Mix a sodium-pentaborate solution.

1) Verify SLC-V-1A and SLC-V-1B closed.
2) Add demineralized water to SLC-TK-1 in 1000 gal. quantities as required for a total tank volume of 3000 gal. minimum.
3) Turn on the mixing air and mixing heater.
4) Add 710 lb borax and 683 lb boric acid for each 1000 gal. of water added to SLC-TK-1.

e. Inject boron with RCIC.

1) Close DW-V-159 or stop DW-P-1A and DW-P-1B.
2) RCIC-V-10 must be open for SLC injection; if necessary, open the breaker at MC-S1-1D then manually open RCIC-V-10.
3) Open either SLC-V-1A or SLC-V-1B.
4) Operate the RCIC System as required by contingent PPM 5.3.7, Level/Power Control but with positive RPV injection.

8.8 Inject boron using the RWCU System.

a. Perform Step b and Step c concurrently.

b. Backwash both RWCU demineralizers; refer to PPM 2.2.3, Reactor Water Cleanup System.

c. Defeat RWCU isolation interlocks and restart RWCU pumps:

1) Defeat Interlocks:

Location	Relay	Block Open Contacts	Jumper Contacts	For Valve
H13-P622	H22B-K26	3-4	7-8	RWCU-V-1
H13-P623	H22B-k27	3-4	7-8	RWCU-V-4

CAUTION

All isolation functions of RWCU-V-1 and RWCU-V-4 have been defeated at Step c.1.

2) Open RWCU-V-1 and RWCU-V-4.

3) Open RWCU-V-44.

4) Start both RWCU pumps. Jog closed RWCU-V-44 to maintain pump discharge pressure approximately 150 psig higher than RPV pressure.

d. Confirm both RWCU demineralizers in SHUTDOWN:

1) At the RWCU demineralizer control panel, and for both demineralizers, confirm:

a) SHUTDOWN lights illuminated.
b) All demineralizer vessel valves closed.

RPV/Q.

e. Modify demineralizer control for boron injection.

1) At the RWCU demineralizer control panel, change the following timers to the indicated settings:

N-52, Prewash- - - - - - - - - -0 min.
N-53, Backwash - - - - - - - - -0
N-54, Drain- - - - - - - - - - -0
N-55, Fill and Wash- - - - - - -0
N-56, Rewash - - - - - - - - - -0
N-57, Drain- - - - - - - - - - -0
N-58, Fill - - - - - - - - - - -0
N-59, Finish Fill- - - - - - - -1/2
N-60, Precoat Introduction - - -0
N-61, Precoat- - - - - - - - - -10

CAUTION

Continuous Health Physics coverage is required at the RWCU precoat tank area for subsequent steps.

f. Borate either demineralizer:

1) Verify the OMIT-RUN switch is turned to RUN.

2) Depress the demineralizer PRECOAT pushbutton and after approximately 1/2 minute, verify the precoat pump running with recirculation through the precoat tank.

3) At approximately equal rates add 200 lb each of borax and boric acid to the precoat tank.

4) Complete borax and boric acid addition to the precoat tank in 10 min. or terminate addition and proceed to Step g when the PRECOAT COMPLETE alarm is received.

g. Place the borated demineralizer on-line.

1) Turn the ISOLATE - DEISOLATE switch to DEISOLATE and observe the following valves open:

A_B, Influent
E_B, Effluent

2) Depress the RETURN TO HOLD pushbutton and observe:

Hold pump starts
Hold pump discharge valve H opens
Precoat pump stops

3) Close the following manual valves:

RWCU-V-225, Vent
RWCU-V-230, Air
RWCU-V-233, Backwash out
RWCU-V-234, Precoat and Wash
RWCU-V-238, Precoat supply
RWCU-V-239, Vent

4) Set RWCU-FRC-74 to 130 gpm.

5) Depress the FILTER pushbutton and observe demineralizer effluent valve FCV-E opens.

h. Close RWCU-V-44.

i. Repeat Steps 8.6.f and 8.6.g to borate and place the second demineralizer on line.

j. Reborate and return demineralizers to service:

1) Depress the HOLD pushbutton; observe demineralizer outlet FCV-E, closes and hold pump starts.

2) Turn the ISOLATE - DEISOLATE switch to ISOLATE; observe the following valves close:

A_B, Inlet
E_B, Outlet

3) Open manual isolation valves RWCU-V-234 and RWCU-V-238.

RPV/Q

4) Depress the BACKWASH pushbutton and observe the SHUTDOWN light illuminates.

5) Depress the demineralizer PRECOAT pushbutton and observe the precoat pump starts and recirculates through the precoat tank.

6) At approximately equal rates, add 200 lb each of borax and boric acid to the precoat tank. Complete this addition in 10 min. or terminate and proceed to Step 8) when the PRECOAT COMPLETE ALARM is received.

7) Confirm the PRECOAT COMPLETE alarm is illuminated.

8) Depress the the RETURN TO HOLD pushbutton and observe the hold pump starts and precoat pump stops.

9) Close manual isolation valves RWCU-V-234 and RWCU-V-238.

10) Turn the ISOLATE - DEISOLATE switch to DEISOLATE and observe the following valves open:

A_B, Influent
A_1, Influent
E_B, Effluent

11) Depress the FILTER pushbutton and observe demineralizer effluent valve FCV-E opens.

k. Repeat Steps 8.6.j until either:

1) All rods are inserted, or

2) 2130 lb. of borax and 2050 lb. of boric acid have been injected into the RPV.

Exit this procedure and enter PPM 3.3.1, Reactor Scram.

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PROCEDURE NUMBER	APPROVED	DATE
*5.2.1	J W Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.2	CONTAINMENT CONTROL	
TITLE		
*5.2.1	SUPPRESSION POOL TEMPERATURE CONTROL (SP/T)	

5.2.1.1 Purpose

The purpose of this procedure is to maintain primary containment integrity by controlling suppression pool temperature.

5.2.1.2 Entry Condition

This procedure is entered whenever the suppression pool average water temperature is above 90°F.

5.2.1.3 Operator Actions

1. Monitor and control suppression pool temperature.
2. Irrespective of the entry condition, execute this procedure concurrently with:
   a. PPM 5.2.2, Drywell Temperature Control (DW/T)
   b. PPM 5.2.3, Primary Containment Pressure Control (PC/P)
   c. PPM 5.2.4, Suppression Pool Level Control (SP/L)
3. Close any open SRV or scram the reactor within 2 minutes.

CAUTION

If continuous LPCI operation is required to assure adequate core cooling, do not divert all RHR pumps from LPCI mode.

4. When suppression pool average temperature exceeds 90°F, operate available suppression pool cooling.

SP/T

5. Before suppression pool temperature reaches 110°F, scram the reactor and place the mode switch in SHUTDOWN.

CAUTION

Do not depressurize the RPV below 60 psig unless motor driven pumps sufficient to maintain RPV water level are running and available for injection.

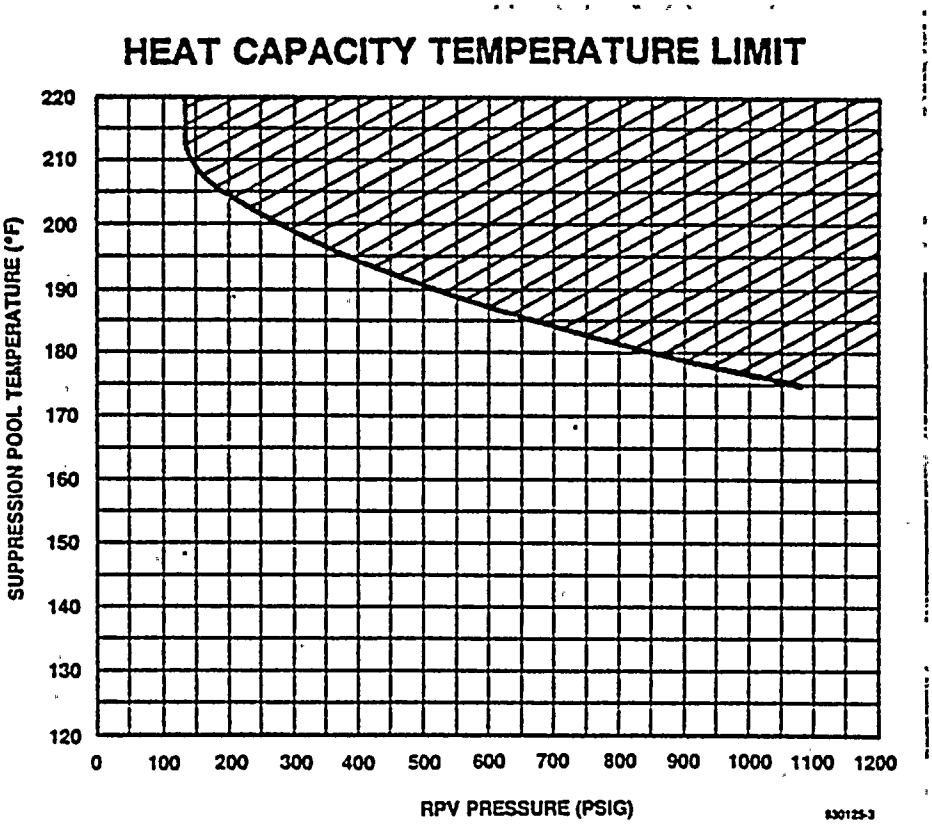
CAUTION

Cooldown rates above 100°F/hr may be required to accomplish the following step.

CAUTION

Observe NPSH requirements for pumps taking suction from the suppression pool. Refer to PPM 5.0.0.

6. If suppression pool temperature cannot be maintained below the Heat Capacity Temperature Limit, maintain RPV pressure below the Limit.



SP/T

7. If suppression pool temperature and RPV pressure cannot be restored and maintained below the Heat Capacity Temperature Limit, emergency RPV depressurization is required, enter PPM 5.1.2, RPV Pressure Control (RPV/P):

   Concurrently, execute PPM 5.1.1 RPV Level Control (RPV/L) and PPM 5.1.3, Reactor Power Control (RPV/Q).

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PROCEDURE NUMBER	APPROVED	DATE
*5.2.2	J W Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.2	CONTAINMENT CONTROL	
TITLE		
*5.2.2	DRYWELL TEMPERATURE CONTROL (DW/T)	

5.2.2.1 Purpose

The purpose of this procedure is to maintain primary containment integrity and protect equipment in the primary containment.

5.2.2.2 Entry Condition

This procedure is entered whenever the average drywell temperature is above 135°F or any local temperature is above 150°F.

5.2.2.3 Operator Actions

1. Monitor and control drywell temperature.
2. Irrespective of the entry conditions, execute this procedure concurrently with:
   a. PPM 5.2.1, Suppression Pool Temperature Control (SP/T)
   b. PPM 5.2.3, Primary Containment Pressure Control (PC/P)
   c. PPM 5.2.4, Suppression Pool Level Control (SP/L)
3. If at any time RPV water level was below - 161 inches and containment pressure is below 18 psig, initiate both CAC systems. Refer to PPM 2.3.3, Containment Atmosphere Control.

4. When average drywell temperature exceeds 135°F or any local temperature exceeds 150°F, operate available drywell cooling.

NOTE

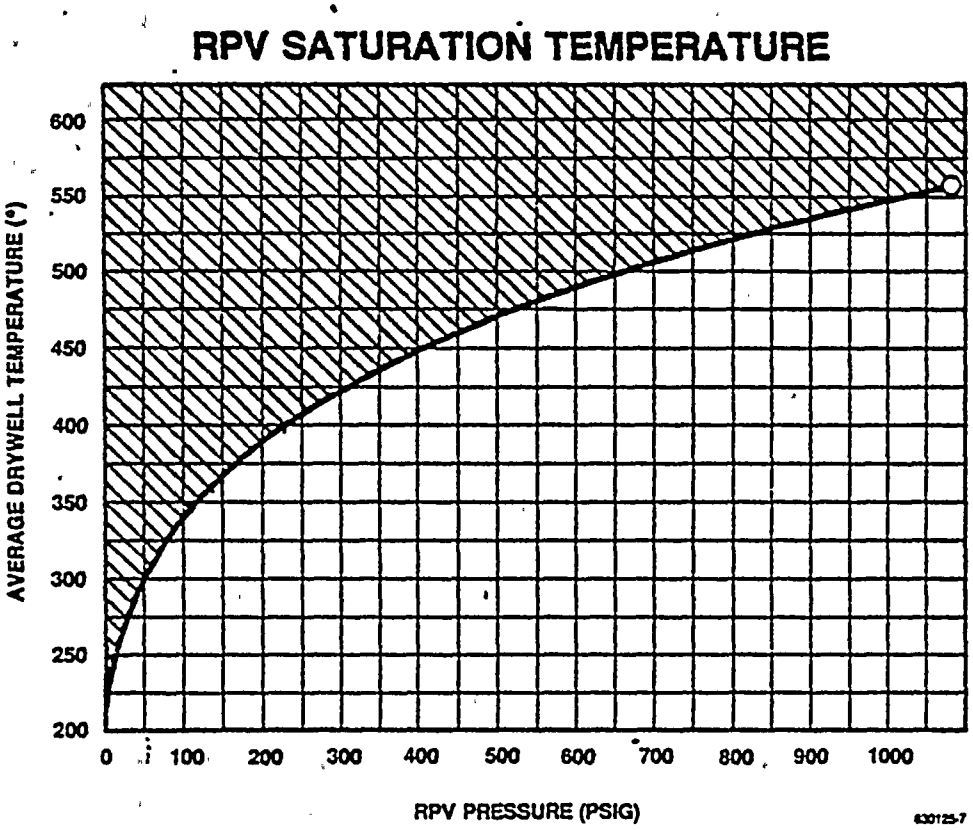
Execute the following steps concurrently.

5. If drywell temperature reaches the RPV Saturation Temperature, RPV flooding is requred; enter:

   a. PPM 5.1.1, RPV Level Control (RPV/L)

   b. PPM 5.1.2, RPV Pressure Control (RPV/P)

   and execute them concurrently with this procedure.



DW/T

CAUTION

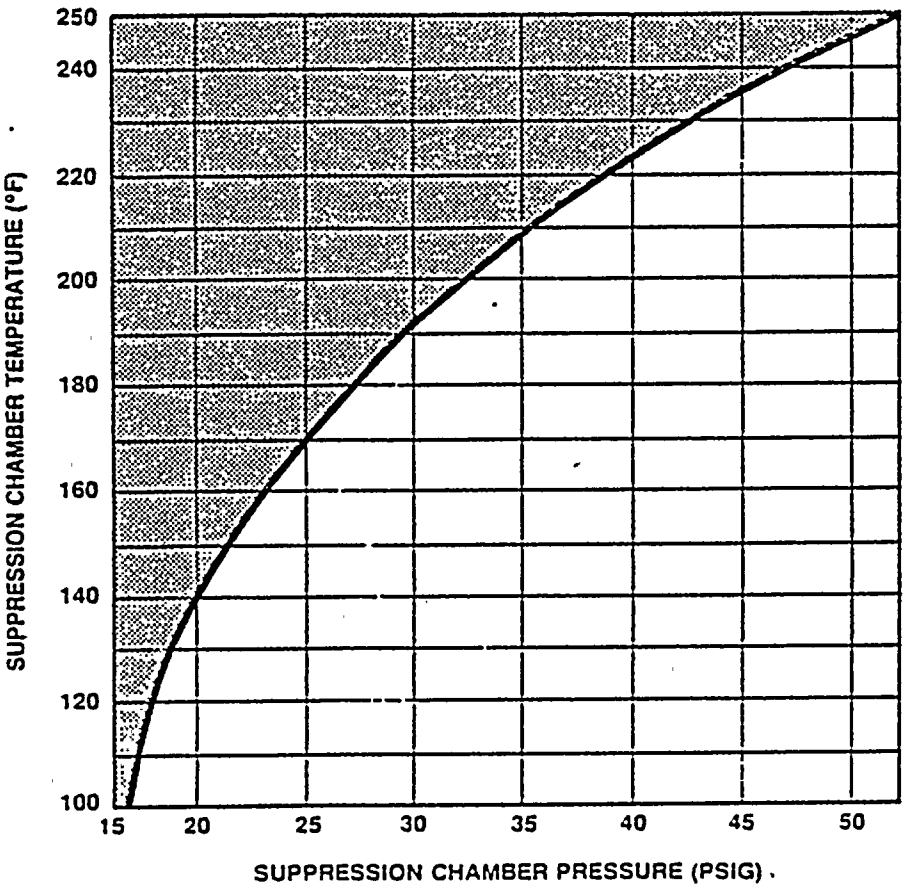
If continuous LPCI operation is required to assure adequate core cooling, do not divert all RHR pumps from LPCI mode.

6. Before drywell temperature reaches 340°F, but only if suppression chamber temperature and drywell pressure are below the Drywell Spray Initiation Pressure Limit:

   a. Stop RRC pumps, drywell circulating fans and drywell cooling fans.

   b. Open drywell spray valves RHR-V-16B(A) and RHR-V-17B(A). Use a single spray header (header B if possible).

DRYWELL SPRAY INITIATION PRESSURE LIMIT



DW/T

7. If drywell temperature cannot be maintained below 340°F, emergency RPV depressurization is required; enter PPM 5.1.2, RPV Pressure control (RPV/P). Concurrently, execute PPM 5.1.1, RPV Level Control (RPV/L) and PPM 5.1.3, Reactor Power Control (RPV/Q).

DW/T

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PLANT PROCEDURES MANUAL

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PROCEDURE NUMBER	APPROVED	DATE
*5.2.3	J W Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.2	CONTAINMENT CONTROL	
TITLE		
*5.2.3	PRIMARY CONTAINMENT PRESSURE CONTROL (PC/P)	

5.2.3.1 Purpose

The purpose of this procedure is to maintain primary containment integrity.

5.2.3.2 Entry Condition

This procedure is entered whenever primary containment pressure exceeds 1.65 psig.

5.2.3.3 Operator Actions

1. Monitor and control primary containment pressure.
2. Execute this procedure concurrently with:
   a. PPM 5.2.1, Suppression Pool Temperature Control (SP/T)
   b. PPM 5.2.2, Drywell Temperature Control (DW/T)
   c. PPM 5.2.4, Suppression Pool Level Control (SP/L)

CAUTION

High suppression chamber pressure (25 psig) may trip the RCIC turbine on high exhaust pressure.

3. Operate SBGT. Open drywell and suppression chamber 2-inch purge exhaust valves but only when the space being vented is below 212°F. Refer to PPM 2.3.1, Primary Containment Venting, Purging and Inerting, Section B.

PC/P

4. If an RPV low level indication occurred or is present, manually initiate the MSLC System when the RPV has depressurized to 35 psig. Refer to PPM 2.2.6, Main Steam, Section B.

5. If at any time, RPV water level was below - 161 inches and containment pressure is below 18 psig, initiate both CAC systems. Refer to PPM 2.3., Containment Atmospheric Control.

CAUTION

Observe NPSH requirements for pumps taking suction from the suppression pool. Refer to General Cautions #8, PPM 5.0.0.

CAUTION

If continuous LPCI operation is required to assure adequate core cooling, do not divert all RHR pumps from LPCI mode.

6. Before suppression chamber pressure reaches 16.5 psig, but only if suppression pool water level is below the elevation of the spray header (53 ft.), initiate suppression pool sprays.

PC/P

CAUTION

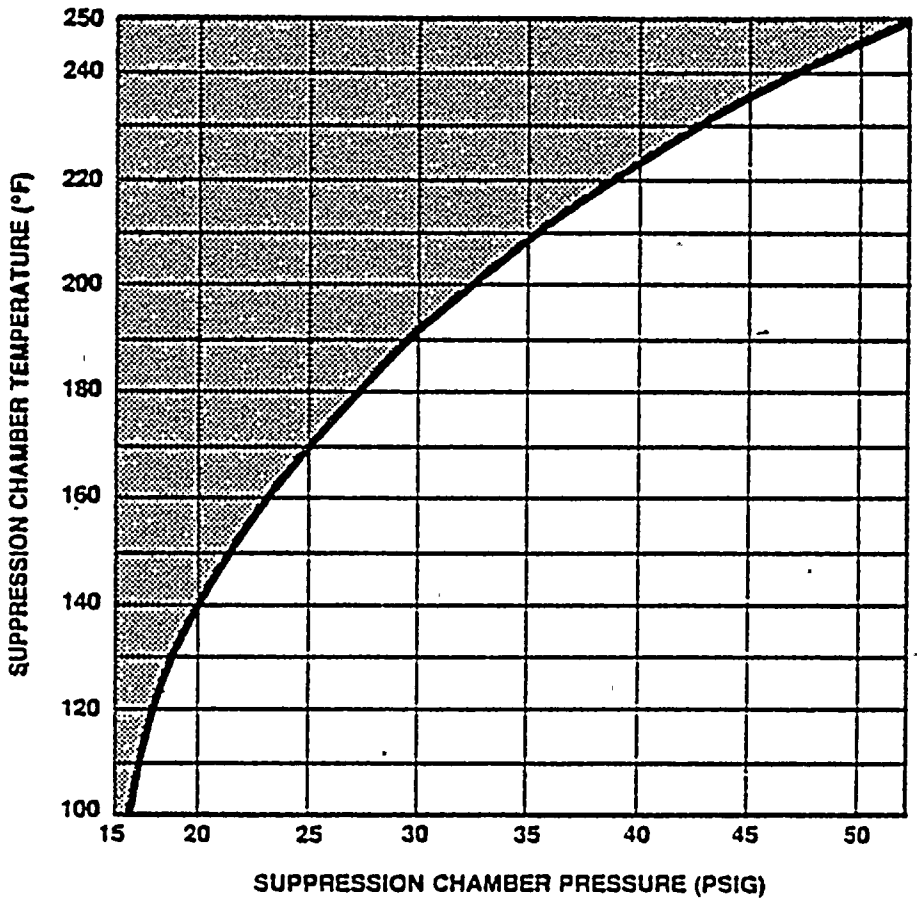
If continuous LPCI operation is required to assure adequate core cooling, do not divert all RHR pumps from the LPCI mode.

7. If suppression chamber pressure exceeds 16.5 psig, but only if suppression chamber temperature and drywell pressure are below the Drywell Spray Initiation Pressure Limit:

   a. Stop RRC pumps, drywell circulating fans and drywell cooling fans.

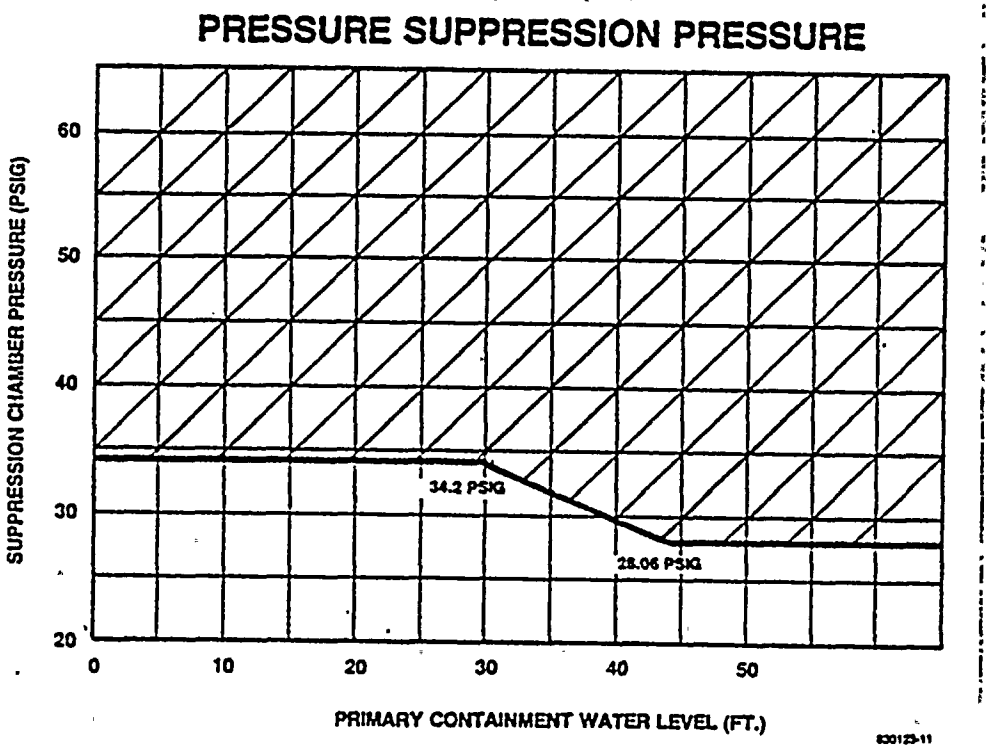
   b. Open drywell spray valves RHR-V-16B(A) and RHR-V-17B(A). Use a single spray header (header B if possible).

DRYWELL SPRAY INITIATION PRESSURE LIMIT



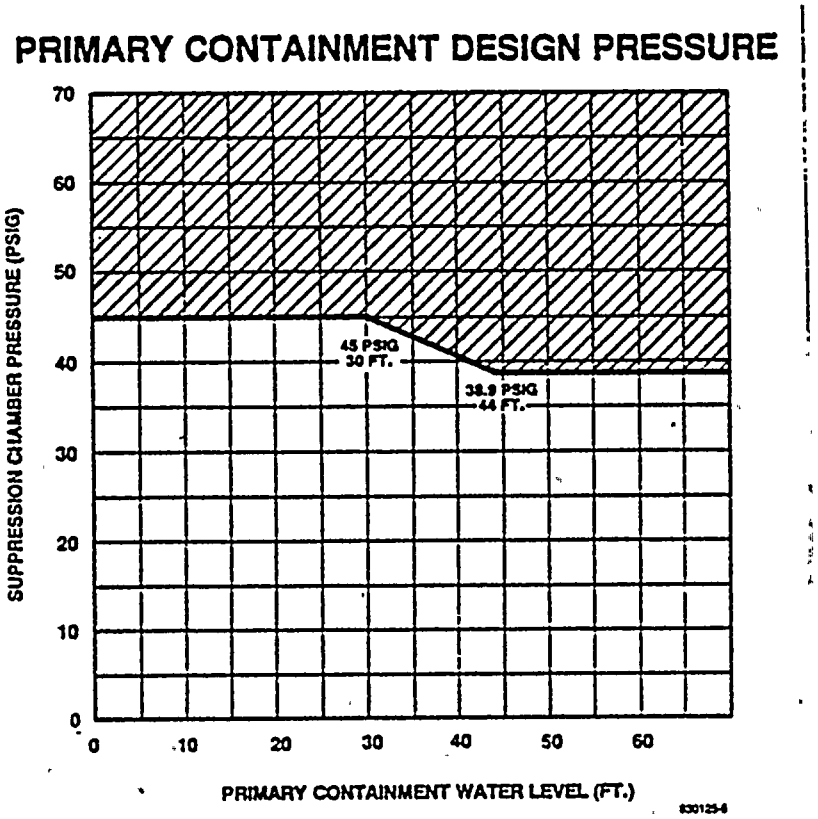
PC/P

8. If suppression chamber pressure cannot be maintained below the Pressure Suppression Pressure, emergency RPV depressurization is required, enter PPM 5.1.2, RPV Pressure Control (RPV/P). Concurrently, execute PPM 5.1.1, RPV Level Control (RPV/L) and PPM 5.1.3, Reactor Power Control.



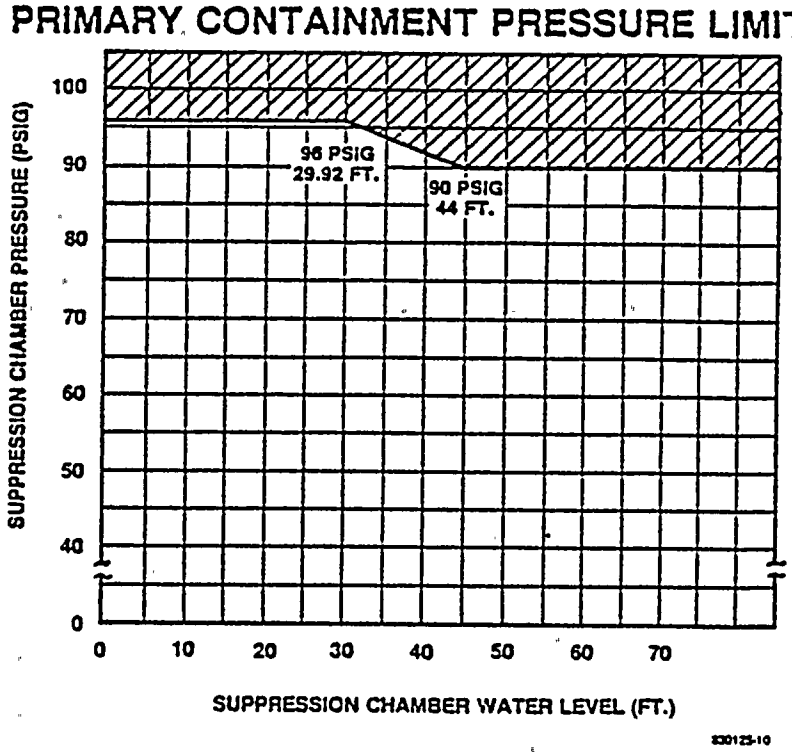
PC/P

9. If suppression chamber pressure cannot be maintained below the Primary Containment Design Pressure, RPV flooding is required, enter contingent PPM 5.3.6, RPV Flooding and execute concurrently with this procedure.



PC/P

10. If suppression chamber pressure cannot be maintained below the Primary Containment Pressure Limit,



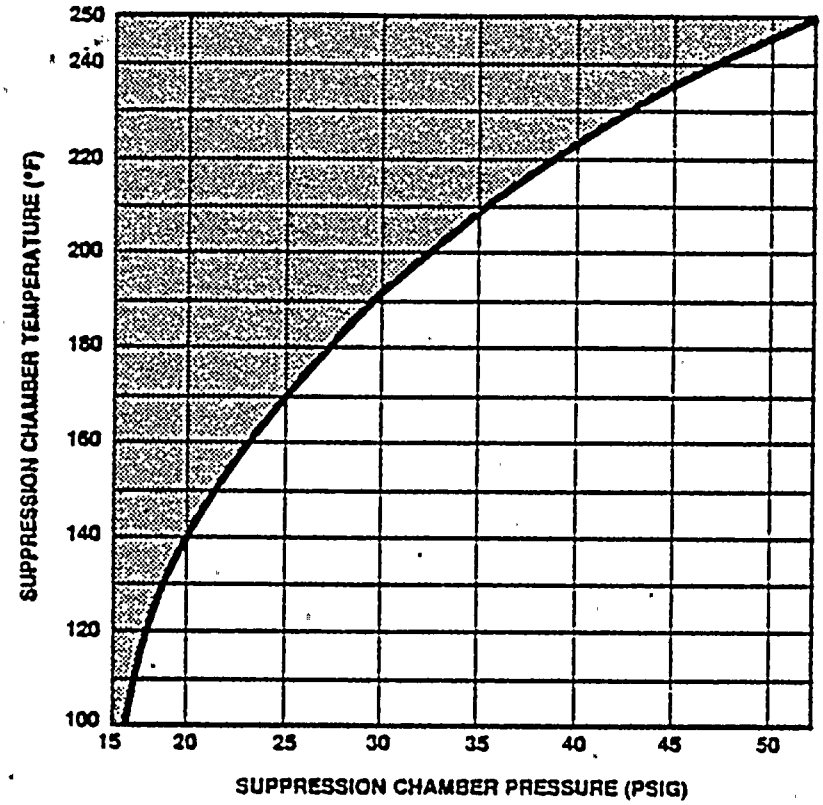
then irrespective of whether adequate core cooling is assured:

10.1 If suppression pool water level is below the elevation of the spray header (53 ft.), initiate suppression pool sprays.

PC/P

10.2 If suppression chamber temperature and drywell pressure are below the Drywell Spray Initiation Pressure Limit:

DRYWELL SPRAY INITIATION PRESSURE LIMIT



a. Stop RRC, drywell circulating fans and drywell cooling fans.

b. Open drywell spray valves RHR-V-16B(A) and RHR-V-17B(A). Use a single spray header (header B if possible).

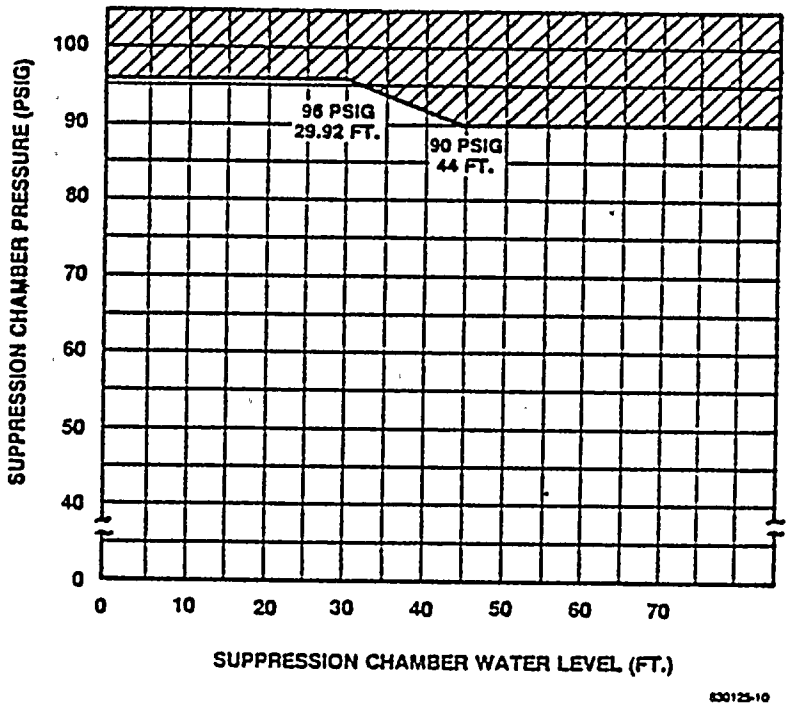
PC/P

CAUTION

Two-inch suppression chamber and drywell purge exhaust valve isolation interlocks are defeated by holding control switches to the OPEN position.

11. If suppression chamber pressure exceeds the Primary Containment Pressure Limit, vent the primary containment through the 2-inch purge exhaust in accordance with PPM 2.3.1, Primary Containment Venting, Purging and Inerting, Section B to reduce and maintain pressure below the Primary Containment Pressure Limit.

PRIMARY CONTAINMENT PRESSURE LIMIT



PC/P

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PROCEDURE NUMBER	APPROVED	DATE
*5.2.4	J W Baker	06/13/85

VOLUME NAME: 5 EMERGENCY PROCEDURES

SECTION: 5.2 CONTAINMENT CONTROL

TITLE: *5.2.4 SUPPRESSION POOL LEVEL CONTROL (SP/L)

5.2.4.1 Purpose

The purpose of this procedure is to maintain primary containment integrity and protect equipment in the primary containment.

5.2.4.2 Entry Conditions

This procedure is entered whenever suppression pool water level:

1. Goes above 31 ft. 1-3/4 in. (+1-3/4 in. on CMS-LR-3 or 4) or,
2. Drops below 30 ft. 9-3/4 in. (-2-1/4 in. on CMS-LR-3 or 4).

5.2.4.3 Operator Actions

1. Monitor and control suppression pool level.
2. Execute this procedure concurrently with:
   a. PPM 5.2.1, Suppression Pool Temperature Control (SP/T)
   b. PPM 5.2.2, Drywell Temperature Control (DW/T)
   c. PPM 5.2.3, Primary Containment Pressure Control (PC/P)

CAUTION

Observe NPSH requirements for pumps taking suction from the suppression pool. Refer to PPM 5.0.0.

SP/L

CAUTION

If HPCS SUCTION SWITCHOVER SUPPRESSION POOL LEVEL HIGH or HPCS/RCIC SUCTION SWITCHOVER CST LEVEL LOW alarms occur, confirm automatic transfer of or manually transfer HPCS and RCIC suction from the condensate storage tank to the suppression pool. RCIC suction will not auto transfer on high suppression pool level.

3. Maintain suppression pool water level between +1-3/4 in. and -2-1/4 in. on CMS-LR-3 or 4.

3.1 Lower suppression pool level using RHR Loop B:

a. Operate RHR-P-2B

b. Request the HP/Chemist sample RHR Loop B. Refer to PPM 12.10.1, Post Accident Sampling and Analysis.

c. Request the Radwaste Control Operator to line up either the Waste Surge or Floor Drain Collector Tanks for reject from RHR.

d. Confirm sample results permit discharge.

e. Open RHR-V-49

f. Open RHR-V-40

g. Monitor suppression pool level. Stop reject when level is lowered to 0 in. on CMS-LR-3 or 4.

3.2 Raise suppression pool water level as follows:

3.2.1 If HPCS has not auto started:

a. Verify HPCS suction from CST, HPCS-V-1, is open.

b. With HPCS-P-1 operating, throttle open test valve HPCS-V-23.

3.2.2 If HPCS is not available:

a. Verify Reactor Building condensate supply header pressurized.

SP/L

b. Install pipe spool between RHR-V-106 (RHR-P-2C suction piping) and COND-V-28.

c. Open COND-V-28.

d. Open RHR-V-106.

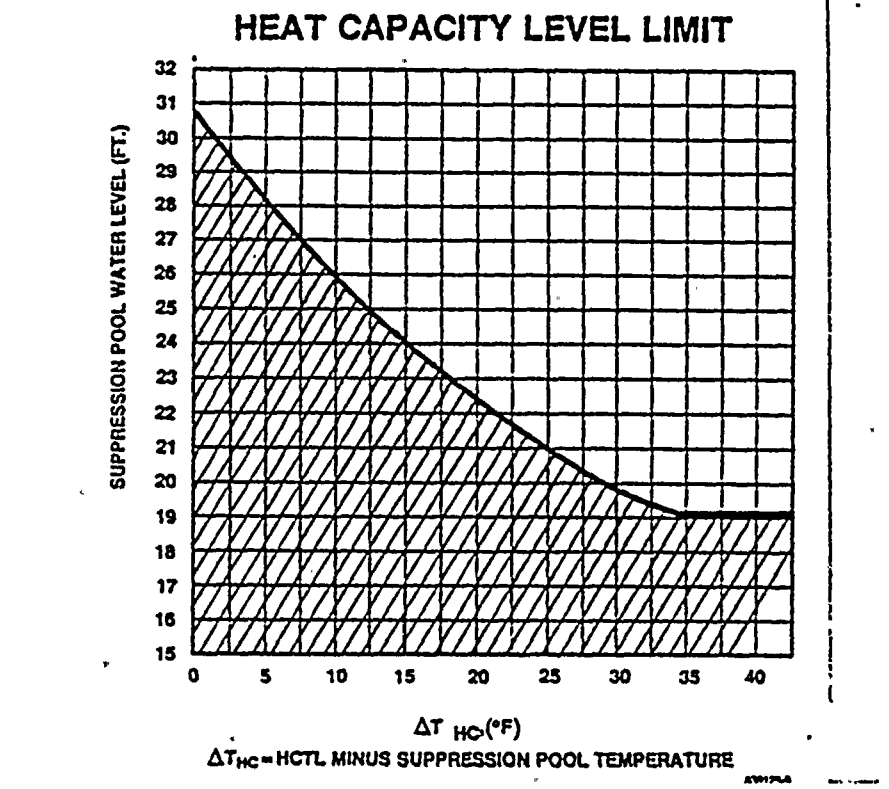
e. Monitor suppression pool level. Close RHR-V-106 when level is restored to 0 in. on CMS-LI-3 of 4.

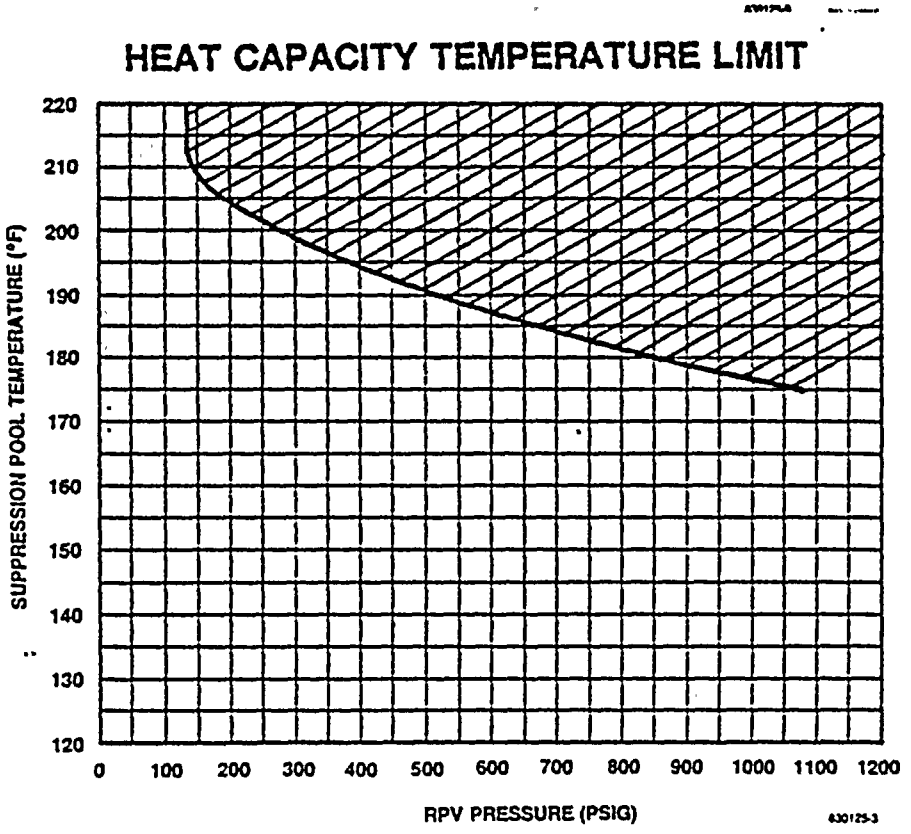
4. If suppression pool water level cannot be maintained above 30 ft. 9-3/4 in., (-2-1/4 in on CMS-LR-3 or 4) proceed to Step 6.

5. If suppression pool water level cannot be maintained below 31 ft, 1-3/4 in. (+ 1-3/4 in. on CMS-LR-3 or 4), proceed to steps 7 and 8 and execute those steps concurrently.

6. If suppression pool water level cannot be maintained above 30 ft. 9-3/4 in. (-2-1/4 in. on CMS-LR-3 or 4):

6.1 Maintain level above the Heat Capacity Level Limit

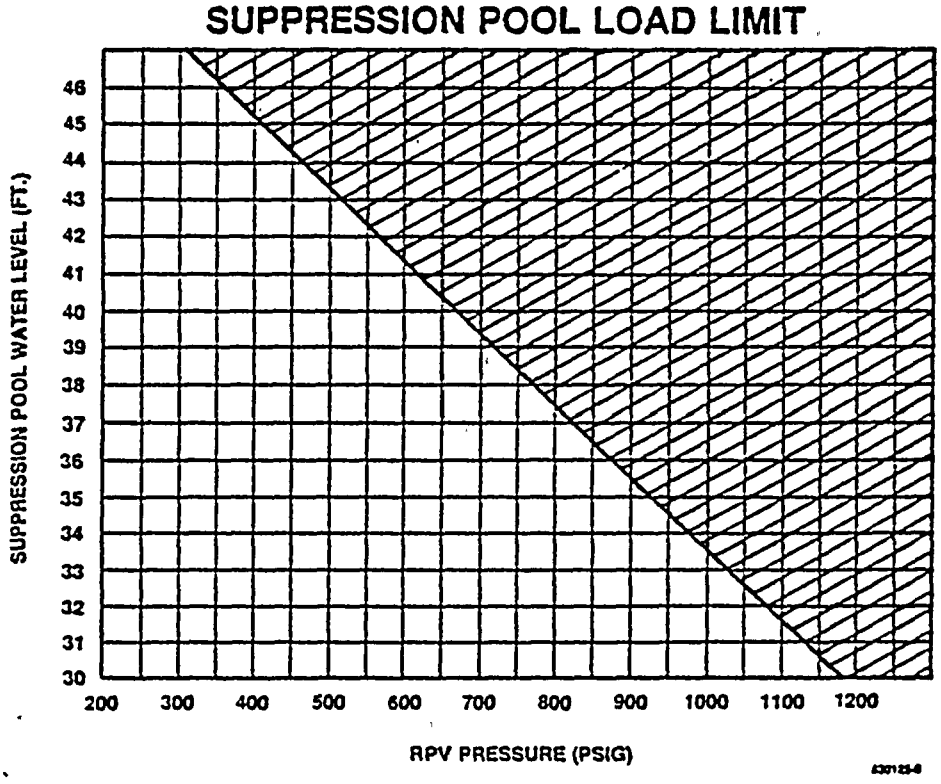




SP/L

6.2 If level cannot be maintained above the Heat Capacity Level Limit, emergency RPV depressurization is required; enter PPM 5.1.2, RPV Pressure Control (RPV/P). Concurrently, execute PPM 5.1.1, RPV Level Control (RPV/L) and PPM 5.1.3 Reactor Power Control (RPV/Q).

7. Maintain suppression pool water level below the Suppression Pool Load Limit.



SP/L

CAUTION

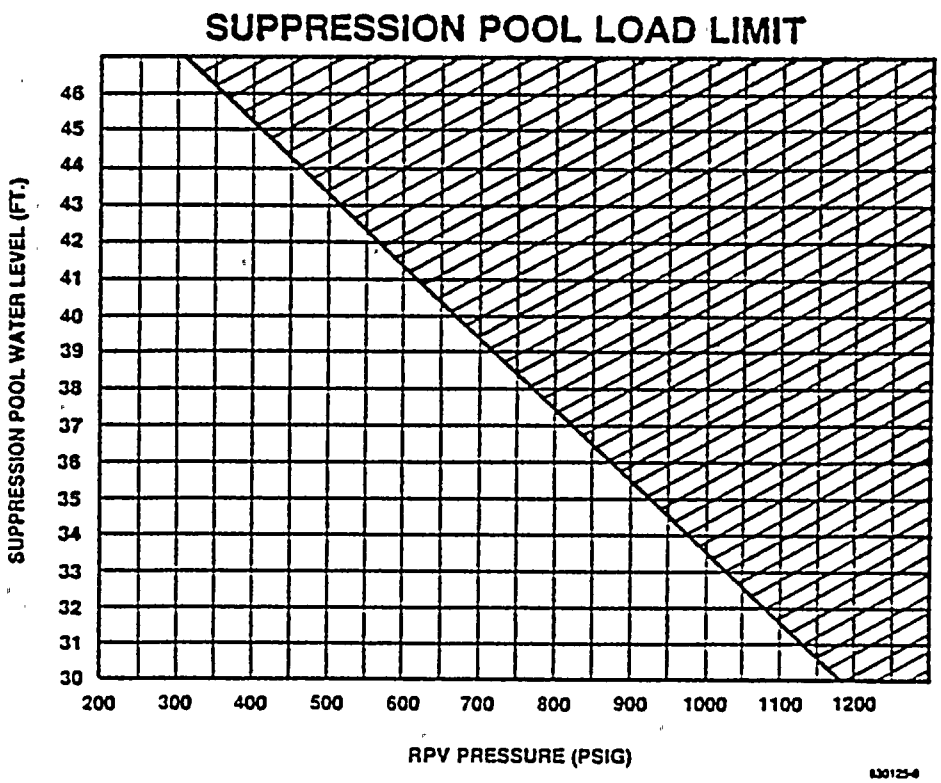
Do not depressurize the RPV below 60 psig unless motor-driven pumps sufficient to maintain RPV water level are running and available for injection.

CAUTION

Cooldown rates above 100°F/hr may be required to accomplish the following step.

7.1 If suppression pool water level cannot be maintained below the Suppression Pool Load Limit, maintain RPV pressure below the Limit.

7.2 If suppression pool water level and RPV pressure cannot be maintained below the Suppression Pool Load Limit, but only if adequate core cooling is assured, terminate injection into the RPV from sources external to the primary containment except from boron injection systems and CRD.



SP/L

7.3 If suppression pool water level and RPV pressure cannot be restored and maintained below the Suppression Pool Load Limit, emergency RPV depressurization is required, enter PPM 5.1.2, RPV Pressure Control (RPV/P). Concurrently, execute PPM 5.1.1, RPV Level Control (RPV/L) and PPM 5.1.3 Reactor Power Control (RPV/Q).

8. Before suppression pool water level reaches the bottom of the drywell vacuum breakers (54 ft. 6 in.), but only if adequate core cooling is assured, terminate injection into the RPV from sources external to the primary containment except from boron injection systems and CRD.

CAUTION

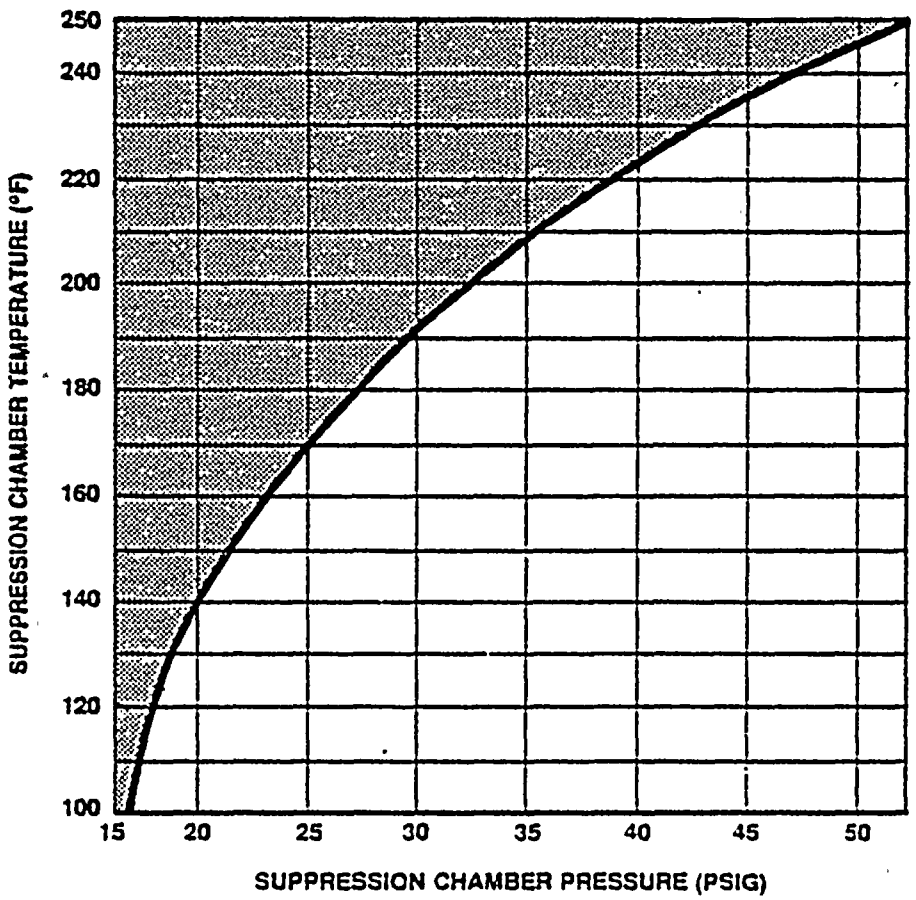
If continuous LPCI operation is required to assure adequate core cooling, do not divert all RHR pumps from LPCI mode.

8.1 When suppression pool water level reaches the bottom of the drywell vacuum breakers (54 ft. 6 in.) but only if suppression chamber temperature and drywell pressure are below the Drywell Spray Initiation Pressure Limit:

a. Stop recirculation pumps, drywell circulating fans and drywell cooling fans.

b. Open drywell spray valves RHR-V-16B(A) and RHR-V-17B(A). Use a single spray header (header B if possible).

DRYWELL SPRAY INITIATION PRESSURE LIMIT



SP/L

CAUTION

Do not initiate drywell sprays if suppression pool water level is above the bottom of the drywell vacuum breakers (54 ft. 6 in).

8.2 If suppression pool water level exceeds the bottom of the drywell vacuum breakers (54 ft. 6 in.), continue to operate drywell sprays.

8.3 When primary containment water level reaches the 551 ft. elevation, terminate injection into the RPV from sources external to the primary containment irrespective of whether adequate core cooling is assured.

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PROCEDURE NUMBER	APPROVED	DATE
*5.2.5	JW Baker	06/13/85

VOLUME NAME	
5	EMERGENCY PROCEDURES
SECTION	
5.2	PRECAUTIONS
TITLE	
*5.2.5	SECONDARY CONTAINMENT CONTROL

5.2.5.1 Purpose

The purpose of this procedure is to:

1. Protect equipment in the secondary containment.
2. Limit radioactivity release to the secondary containment, and either:
   a. Maintain secondary containment integrity, or
   b. Limit radioactivity release from the secondary containment.

5.2.5.2 Entry Conditions

Entry conditions for this procedure are any of the following:

1. Secondary containment differential pressure at or above 0 in. of water.
2. An area temperature (Table 1) above the maximum normal operating temperature.
3. A HVAC cooler differential temperature in the alarm state.
4. A HVAC exhaust radiation level above the maximum normal operating radiation level.
5. An area radiation level (Table 2) above the maximum normal operating radiation level.
6. An area water level (Table 3) above the alarm level.

5.2.5.3 Operator Actions

NOTE:

If, while executing the following steps, Reactor Building HVAC exhaust plenum radiation level exceeds 13 mr/hr:

a. Confirm or manually initiate isolation of Reactor Building HVAC and,

b. Confirm initiation of or manually initiate SBGT.

NOTE:

If, while executing the following steps:

a. Reactor Building HVAC isolates, and

b. Reactor Building HVAC exhaust radiation level is below 13 mr/hr,

restart secondary containment HVAC. If required, jumper interlocks at individual equipment pieces; do not jumper high drywell or low RPV water level trips. Refer to E514, sheet 33.

1. Monitor and Control Secondary Containment Temperatures.

   1.1 Operate available area coolers.

   1.2 If Reactor Building HVAC exhaust plenum radiation level is below 13 mr/hr, operate available HVAC.

   1.3 If any area temperature exceeds its maximum normal operating temperature (Table 1), isolate all systems that are discharging into the area except systems required to shut down the reactor, assure adequate core cooling, or suppress a working fire.

   1.4 If a primary system is discharging into an area, then before an area temperature reaches its maximum safe operating temperature (Table 1), enter PPM 5.1.2, RPV Pressure Control (RPV/P), and execute concurrently with this procedure.

   1.5 If a primary system is discharging into an area, and an area temperature exceeds it maximum safe operating temperature in more than one area, emergency depressurization is required; enter PPM 5.1.2, RPV Pressure Control (RPV/P).

2. Monitor and Control Secondary Containment Radiation Levels.

2.1 If a primary system is discharging into an area, then before an area radiation level reaches the alarm level (Table 2), enter PPM 5.1.2, RPV Pressure Control (RPV/P), and execute concurrently with this procedure.

2.2 If any area radiation level exceeds the alarm level, isolate all systems that are discharging into the area except systems required to shutdown the reactor, assure adequate core cooling or suppress a working fire.

2.3 If a primary system is discharging into an area and an area radiation level exceeds the alarm level (Table 2) in more than one area, emergency RPV depressurization is required; enter PPM 5.1.2, RPV Pressure Control (RPV/P).

3. Monitor and Control Secondary Containment Water Levels.

3.1 If any floor drain sump water level is above the alarm level, operate available sump pumps to restore and maintain the water level below the maximum normal operating water level.

If any floor drain sump level cannot be restored and maintained below the alarm level, isolate all systems discharging water into the sump except systems required to shut down the reactor, assure adequate core cooling, or suppress a working fire.

3.2 If a primary system is discharging into an area, and any water level reaches the Above Floor Level water level (Table 3), enter PPM 5.1.2, RPV Pressure Control (RPV/P), and execute concurrently with this procedure.

3.3 If a primary system is discharging into an area and an area water level exceeds the Maximum Safe Operating Level (Table 3) in more than one area, emergency RPV depressurization is required; enter PPM 5.1.2, RPV Pressure Control (RPV/P).

TABLE 1

Secondary Containment Temperature Control

Location	Alarm °F	Maximum Normal Operating Value, °F	Maximum Safe Operating Value, °F
LPCS Pump Room	104	104	212
HPCS Pump Room	104	104	150
CRD Pump Room	105	104	128
RHR Pump Room B	138	104	205
RHR Pump Room A	132	104	205
RCIC Pump Room	130	104	150
DC MCC Room	104	104	106
Steam Tunnel	150		200
522' Elevation	100	104	128
Div. 2 MCC Room	104	104	106
RWCU Pump Room	130	104	245
Div. 1 MCC Room	104	104	106
RWCU HX Room	135	120	200
SR-13/14 (H_2O_2 Anal)	104	104	
RHR HX Room B	145/173	120	200
FPC Pump Room	104	104	128
RHR HX Room A	135/185	120	212
MC-7B-8 Room	104	104	106
MC-8B-8 Room	104	104	106

TABLE 2

Secondary Containment Radiation Control

Location	Alarm (mr/hr)
ARM-RIS-4 CRD HCUS, East	15
ARM-RIS-5 CRD HCUS, West	15
ARM-RIS-7 TSP Drive Room	15
ARM-RIS-9 RHR-P-2A Room	25
ARM-RIS-10 RHR-P-2B Room	25
ARM-RIS-11 RHR-P-2C Room	25
ARM-RIS-12 RCIC-P-1 Room	25
ARM-RIS-13 HPCS-P-1 Room	15
ARM-RIS-23 CRD Pump Room	20
ARM-RIS-24 Rx 471', West	15
ARM-RIS-32 Rx 471', NE	50
ARM-RIS-33 Rx 501', NW	50

TABLE 3

Secondary Containment Water Level Control

Location	Above Floor Level Alarm (In.)	Maximum Safe Operating Level (Inches Above Floor Level)
LPCS Pump Room	6	58
HPCS Pump Room	6	69
RHR Pump Room B	6	72
RHR Pump Room A	6	36
RCIC Pump Room	6	6
RHR Pump Room C	6	67
CRD Pump Room	(*)	45

(*) EDR-R-5 alarm level at 420'9", floor level is 422'3".

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

PLANT PROCEDURES MANUAL

WNP-2

PROCEDURE NUMBER	APPROVED	DATE
*5.2.6	G W Baker	06/13/85

VOLUME NAME: 5 EMERGENCY PROCEDURES

SECTION: 5.0 PRECAUTIONS

TITLE: *5.2.6 RADIOACTIVITY RELEASE CONTROL

5.2.6.1 Purpose

The purpose of this procedure is to limit radioactivity release into areas outside the primary and secondary containments.

5.2.6.2 Entry Conditions

The entry condition for this procedure is:

Offsite radioactivity release rate (determined by STA) above 1/2 mr/hr (Site Alert)

5.2.6.3 Operator Actions

1. Isolate all primary systems that are discharging into areas outside the primary and secondary containments except those required to assure adequate core cooling or shutdown the reactor.

2. If offsite radioactivity release rate approaches or exceeds 1 R/hr (General Emergency) and a primary system is discharging into an area outside the primary and secondary containments, emergency RPV depressurization is required; enter PPM 5.1.2, RPV Pressure Control (RPV/P) and execute concurrently with this procedure.

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PROCEDURE NUMBER	APPROVED	DATE
*5.3.1	GW Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.3	EMERGENCY PROCEDURE CONTINGENCIES	
TITLE		
*5.3.1	LEVEL RESTORATION (CONTINGENCY)	

If while executing the following steps:

1. Boron injection is required, exit this procedure and enter contingent PPM 5.3.7, Level/Power Control.

2. RPV water level cannot be determined, RPV flooding is required; exit this procedure and enter contingent PPM 5.3.6, RPV Flooding.

3. RPV flooding is required, exit this procedure and enter contingent PPM 5.3.6, RPV Flooding.

1. Line up for injection and start pumps in 2 or more of the following injection subsystems:

   a. Condensate - Condensate Booster

   b. HPCS

   c. LPCI - A

   d. LPCI - B

   e. LPCI - C

   f. LPCS

2. If less than 2 of the injection subsystems can be lined up, commence lining up as many of the following alternate injection subsystems as possible:

C-LR

2.1 RHR Service Water Crosstie

2.2 Fire Water to Condensate Tie:

a. String fire hose from nearest outside hydrant to COND-P-2A.

b. Attach hose to adapter at COND-P-2C suction.

2.3 ECCS Condensate Flush Connections. Install removable pipe spools between the Condensate Supply System and any one of the following ECCS injection subsystems having an inoperable pump. Open the related Condensate Supply Valve.

a. LPCS (COND-V-26)

b. LPCI-A (COND-V-36)

c. LPCI-B (COND-V-35)

d. LPCI-C (COND-V-37)

2.4 SLC (test tank)

2.5 SLC (boron tank)

3. Monitor RPV pressure and water level. Continue in this procedure at the step indicated in the following Table:

(360 psig)[1] RPV Pressure Region (60 psig)[2]

RPV LEVEL		HIGH	INTERMEDIATE	LOW
	Increasing	5	6	7
	Decreasing	8		9

[1](RPV pressure at which LPCS Shutoff head is reached.)

[2](RCIC low pressure isolation setpoint.)

C-LR

4. If while executing Steps 5 through 9:

   4.1 The RPV water level trend reverses or changes region, return to Step 3.

   4.2 RPV water level drops below -129 in., inhibit ADS.

5. RPV Water Level Increasing, RPV Pressure High

Exit this procedure and enter PPM 5.1.1, RPV Level Control, (RPV/L) Step 3. Concurrently, execute PPM 5.1.2, RPV Pressure Control (RPV/P) Step 5.

6. RPV Water Level Increasing, RPV Pressure Intermediate

   If RCIC is not available and RPV pressure is increasing, emergency RPV depressurization is required. Enter contingent PPM 5.3.2, Emergency RPV Depressurization and execute concurrently with this procedure.

When RPV pressure is decreasing, exit this procedure and enter PPM 5.1.1, RPV Level Control (RPV/L) at Step 3.

If RCIC is not available and RPV pressure is not increasing, exit this procedure and enter PPM 5.1.1, RPV Level Control (RPV/L) Step 3.

When RPV water level reaches +13.0 inches, exit this procedure and enter PPM 5.1.1, RPV Level Control (RPV/L) at Step 3.

7. RPV Water Level Increasing, RPV Pressure Low

If RPV pressure is increasing, emergency RPV depressurization is required. Enter contingent PPM 5.3.2, Emergency RPV Depressurization and execute concurrently with this procedure.

When RPV pressure is decreasing, exit this procedure and enter PPM 5.1.1, RPV Level Control (RPV/L) at Step 3.

If RPV pressure is not increasing, exit this procedure and enter PPM 5.1.1, Level Control (RPV/L) at Step 3.

8. RPV Water Level Decreasing, RPV Pressure High or Intermediate

8.1 If HPCS or RCIC is not operating, restart whichever is not operating.

8.2 If no injection subsystem is lined up for injection with at least one pump running start pumps in alternate injection subsystems which are lined up for injection.

8.3 When RPV water level drops to -161 in. (TAF):

a. If no system, injection subsystem or alternate injection subsystem is lined up with at least one pump running, steam cooling is required. Enter contingent PPM 5.3.3, Steam Cooling and execute concurrently with this procedure.

b. When any system, injection subsystem or alternate injection subsystem is lined up with least one pump running, return to Step 3 of this procedure.

c. When any source of makeup water is available, emergency depressurization is required. Enter PPM 5.3.2, Emergency RPV Depressurization and execute concurrently with this procedure.

CAUTION

If the Condensate Supply System is valved to any ECCS injection subsystem, do not leave the connecting ECCS valve unattended and open.

d. When RPV pressure decreases to 100 psig, valve the condensate supply system to that ECCS subsystem with an installed pipe spool by opening the related valve.

1) LPCS (LPCS-V-25)

2) LPCI-A (RHR-V-63A)

3) LPCI-B (RHR-V-63B)

4) LPCI-C (RHR-V-63C)

e. When RPV water level is increasing or RPV pressure drops below 60 psig, return to Step 3 of this procedure.

9. RPV Water Level Decreasing, RPV Pressure Low

9.1 If no HPCS or LPCS subsystem is operating, start pumps in alternate injection subsystems which are lined up for injection.

9.2 If RPV pressure is increasing, emergency RPV depressurization is required. Enter PPM 5.3.2, Emergency Depressurization and execute concurrently with this procedure.

CAUTION

If the Condensate Supply System is valved to any ECCS injection subsystem, do not leave the connecting ECCS valve unattended and open.

9.3 When RPV pressure decreases to 100 psig, valve the condensate supply system to that ECCS subsystem with an installed pipe spool by opening the related valve.

1) LPCS (LPCS-V-25)

2) LPCI-A (RHR-V-63A)

3) LPCI-B (RHR-V-63B)

4) LPCI-C (RHR-V-63C)

When RPV water level drops to -161 in. (TAF), exit this procedure and enter contingent PPM 5.3.4, Core Cooling Without Level Restoration.

C-LR

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PROCEDURE NUMBER	APPROVED	DATE
*5.3.2	JW Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.3	EMERGENCY PROCEDURE CONTINGENCIES	
TITLE		
*5.3.2	EMERGENCY RPV DEPRESSURIZATION (CONTINGENCY)	

CAUTION

Cooldown rates above 100°F/hr may be required to accomplish this contingent procedure.

CAUTION

Do not depressurize the RPV below 60 psig unless motor driven pumps sufficient to maintain RPV water level are running and available for injection.

1. When either:

   a. Boron injection is required and all injection into the RPV except from boron injection systems and CRD has been terminated and prevented, or

   b. Boron injection is not required,

1.1 If suppression pool water level is above 17 ft.:

   a. Open all ADS valves.

   b. If any ADS valve cannot be opened, open other SRV's until 7 valves are open.

CAUTION

Defeating isolation interlocks may be required to accomplish the following step.

C-ED

1.2 If less than 3 SRV's are open, rapidly depressurize the RPV using one or more of the following systems:

a. Main Condenser

If required, bypass RPV low water level MSIV and steam line drain isolation interlocks by installing the following jumpers:

Location	Relay	Contact
H13-P609	K1A	1-2
H13-P609	K1C	1-2
H13-P611	K1B	1-2
H13-P611	K1D	1-2

b. Main steam line drains. Open MS-V-16, MS-V-19 and MS-V-21

c. SJAE

d. Sealing Steam

e. RFW Turbines

f. Off Gas Preheaters

g. RWCU (recirculation through the heat exchanger) if no boron has been injected into the RPV.

h. RWCU (blowdown mode) if no boron has been injected into the RPV. Instruct the HP/Chemist to sample the RPV coolant in accordance with PPM 12.10.7, Post Accident Sampling and Analysis and report results to the Control Room prior to initiating blowdown. Do not blowdown if sample results indicate core damage.

i. Head vents. Open MS-V-1 and MS-V-2

If RPV flooding is required, exit this procedure and enter contingent PPM 5.3.6, RPV Flooding.

Exit this procedure and enter PPM 5.1.2, RPV Pressure Control (RPV/P) Step 14.

C-ED

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PROCEDURE NUMBER	APPROVED	DATE
*5.3.3	J W Baker	06/13/85

VOLUME NAME
5 EMERGENCY PROCEDURES

SECTION
5.3 EMERGENCY PROCEDURE CONTINGENCIES

TITLE
*5.3.3 STEAM COOLING (CONTINGENCY)

If while executing the following steps, emergency RPV depressurization is required or any system, injection subsystem or alternate injection subsystem is lined up with at least one pump running, exit this procedure and enter PPM 5.3.2, Emergency RPV Depressurization.

When RPV water level drops to -278 in. or if RPV water level cannot be determined, open one SRV.

When RPV pressure drops below 700 psig exit this procedure and enter PPM 5.3.2, Emergency RPV Depressurization.

C-STM

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

PLANT PROCEDURES MANUAL

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PROCEDURE NUMBER	APPROVED	DATE
*5.3.4	J W Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.3	EMERGENCY PROCEDURE CONTINGENCIES	
TITLE		
*5.3.4	CORE COOLING WITHOUT LEVEL RESTORATION (CONTINGENCY)	

CAUTION

Cooldown rates above 100°F/hr may be required to accomplish this step.

1. Open all 7 ADS valves.

2. If all ADS valves cannot be opened, open other SRVs until 7 valves are open.

3. Operate HPCS and LPCS with suction from the suppression pool.

When:

a. Either HPCS or LPCS is operating with suction from the suppression pool and,

b. RPV pressure is below 122 psig,

Terminate injection into the RPV from sources external to the primary containment.

When RPV water level is restored to -161 in. (TAF), exit this procedure and enter PPM 5.1.1, RPV Level Control, (RPV/L) Step 6.

C-W/O LR

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PROCEDURE NUMBER	APPROVED	DATE
*5.3.5	JW Baker	06/13/85
VOLUME NAME		
5	EMERGENCY PROCEDURES	
SECTION		
5.3	EMERGENCY POROCEDURE CONTINGENCIES	
TITLE		
*5.3.5	ALTERNATE SHUTDOWN COOLING (CONTINGENCY)	

1. Initiate suppression pool cooling.
2. Close:
   - 2.1 RPV Head Vents
     - MS-V-1
     - MS-V-2
   - 2.2 MSIV's
   - 2.3 Main Steam Line Drains
     - MS-V-16
     - MS-V-19
   - 2.4 RCIC Steam Isolation Valves
     - RCIC-V-8
     - RCIC-V-63
     - RCIC-V-76
3. Place the control switch for 2 SRVs in the OPEN position.
4. Slowly raise the RPV water level to establish a flow path through the open SRVs back to the suppression pool.
5. Start LPCS or one RHR pump with suction from the suppression pool.

C-ASC

6. Slowly increase LPCS or RHR injection flow into the RPV to maximum.

   6.1 If RPV pressure does not stabilize at least 76 psig above suppression chamber pressure, start the LPCS or another RHR pump.

   6.2 If RPV pressure does not stablize below 120 psig, open another SRV.

   6.3 If the cooldown rate exceeds 100°F/hr, reduce LPCS or RHR injection into the RPV until the cooldown rate decreases below 100°F/hr.

7. Control suppression pool temperature to maintain RPV water temperature above 80°F.

8. Proceed to cold shutdown in accordance with PPM 3.2.1, Normal Shutdown to Cold Shutdown.

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PROCEDURE NUMBER	APPROVED	DATE
*5.3.6	JW Baker	06/13/85

VOLUME NAME 5	EMERGENCY PROCEDURES
SECTION 5.3	EMERGENCY PROCEDURE CONTINGENCIES
TITLE *5.3.6	RPV FLOODING (CONTINGENCY)

1. If at least 3 SRV's are open or if the HPCS pump is available for injection, close:

   a. MSIV's

   b. Main Steam Line Drains:

      MS-V-16

      MS-V-19

   c. RCIC Steam Isolation Valves:

      RCIC-V-8

      RCIC-V-63

      RCIC-V-76

C-FLD

2. If any control rod is not inserted beyond position 06:

2.1 Terminate and prevent all injection into the RPV except from boron injection systems and CRD until RPV pressure is below the Minimum Alternate RPV Flooding Pressure.

Number of open SRV's	Minimum Alternate RPV Flooding Pressure (psig)
7 or more	185
6	215
5	265
4	330
3	445
2	675

NOTE

Even if less than 2 SRVs can be opened, continue in this procedure.

If while executing the following step, RPV water level can be determined and RPV flooding is not required, exit this procedure and enter:

1. PPM 5.3.7, Level/Power Control (Contingency)

2. PPM 5.1.2, RPV Pressure Control, (RPV/P) Step 12.

and execute those procedures concurrently.

C-FLD

CAUTION

A rapid increase in injection into the RPV may induce a large power excursion and result in substantial core damage.

2.2 Commence and slowly raise injection flow into the RPV with the following systems until at least two SRV's are open and RPV pressure is above the Minimum Alternate RPV Flooding Pressure:

a. CRD - 1130-0 psig

b. Condensate/Condensate Booster - - - - - - 460-0 psig

1) Verify RFW-LIC-620 in MANUAL and RFW-FCV-10 closed.

2) Open:

RFW-V-117A

RFW-V-117B

RFW-V-118

3) Close:

RFW-V-112A

RFW-V-112B

4) Start at least one condensate pump and one condenstate booster pump.

5) Slowly open RFW-FCV-10 while monitoring RPV pressure.

6) If RFW-LIC-620 output exceeds 90%, verify RFW-FCV-15 is closed.

7) Start another condensate/condensate booster pump.

8) Jog RFW-V-109 open.

2.3 If at least 2 SRV's are not open or RPV pressure cannot be increased above the Minimum Alternate RPV Flooding Pressure, commence and slowly raise injection flow into the RPV with the following systems until at least two SRVs are open and RPV pressure is above the Minimum Alternate RPV Flooding Pressure:

a. HPCS - 1130-0 psig

1) Align HPCS to take suction from the suppression pool.

2) At H13-P625, block open contacts 1-2 of relay E22A-K3.

3) Verify HPCS-V-4 is closed.

4) Start HPCS-P-1.

5) Open HPCS-V-23.

6) Open HPCS-V-4.

7) Jog HPCS-V-23 closed while monitoring RPV pressure.

b. LPCS - 360-0 psig

c. RHR Service Water - - - - - - - - - - - - - 160-0 psig

1) Use only if RHR-P-2B is inoperable.

2) Close RHR-V-42B.

3) At H13-P623, block open contacts 9-10 of relay B22H-K30.

4) Verify SW-P-1B operating.

5) Open RHR-V-115 and RHR-V-116.

6) Jog open RHR-V-53B while monitoring RPV pressure.

7) Close RHR-V-68B.

d. Fire Water - - - - - - - - - - - - - - - - - - 90-0 psig

1) String fire hose from nearest outside hydrant to COND-P-2A.

2) Attach hose to adaptor at COND-P-2A suction.

3) Open hydrant and adaptor shutoff valves.

C-FLD

2.4 Maintain at least 2 SRV's open and RPV pressure above the Minimum Alterate RPV Flooding Pressure by throttling injection.

Number of open SRV's	Minimum Alternate RPV Flooding Pressure (psig)
7 or more	185
6	215
5	265
4	330
3	445
2	675

2.5 When:

a. All control rods are inserted beyond position 06 or,

b. The reactor is shutdown and no boron has been injected into the RPV,

continue in this procedure.

3. If RPV water level cannot be determined:

3.1 Commence and increase injection into the RPV with the following systems while verifying:

a. At least 3 SRV's are open and,

b. RPV pressure is not decreasing and,

c. RPV pressure is at least 98 psig above suppression chamber pressure.

d. HPCS - - - - - - - - - - - - - - - 1130-0 psig

e. CRD- - - - - - - - - - - - - - - - 1130-0 psig

f. Condensate/Condensate Boosters 460-0 psig

g. LPCS - - - - - - - - - - - - - - - 360-0 psid

h. LPCI - - - - - - - - - - - - - - - 220-0 psid

i. RHR Service Water- - - - - - - - 160-0 psig

1) Use only if RHR-P-2B is inoperable

2) Verify SW-P-1B operating

3) Open RHR-V-115 and RHR-V-116

4) Open RHR-V-42B

5) Close RHR-V-68B

j. SLC (test tank if DW-P-1A or DW-P-1B is operating)

k. SLC (boron tank)

3.2 Maintain at least 3 SRV's open and RPV pressure at least 98 psig above suppression chamber pressure by throttling injection.

C-FLD

4. If RPV water level can be determined, commence and increase injection into the RPV with the following systems until RPV water level is increasing:

   a. HPCS - - - - - - - - - - - - - - - 1130-0 psig

   b. CRD- - - - - - - - - - - - - - - - 1130-0 psig

   c. Condensate/Condensate Boosters 460-0 psig

   d. LPCS - - - - - - - - - - - - - - - 360-0 psid

   e. LPCI - - - - - - - - - - - - - - - 220-0 psid

   f. RHR Service Water- - - - - - - - 160-0 psig

      1) Use only if RHR-P-2B is inoperable

      2) Verify SW-P-1B operating

      3) Open RHR-V-115 and RHR-V-116

      4) Open RHR-V-42B

      5) Close RHR-V-68B

   g. Fire Water - - - - - - - - - - - - 90-0 psig

      1) String fire hose from nearest outside hydrant to COND-P-2A.

      2) Attach hose to adaptor at COND-P-2A suction.

      3) Open hydrant and adaptor shutoff valves.

h. ECCS Condensate Flush connections 40-0 psig

1) Install the removable pipe spool between the condensate supply system header and any one of the following ECCS injection subsystems having an inoperable pump:

Subsystem	Tie Valves
LPCS	COND-V26/LPCS-V-25
LPCI-A	COND-V-36/RHR-V-63A
LPCI-B	COND-V-35/RHR-V-63B
LPCI-C	COND-V-37/RHR-V-63C

2) When RPV pressure is less than 100 psig and decreasing, open the Condensate/ECCS valves associated with the installed spool.

i. ECCS Keep Full Pumps - - - - - - - 30-0 psig

1) HPCS-P-2

2) LPCS-P-2

3) RHR-P-3

j. SLC (test tank if DW-P-1A or DW-P-1B is operating).

k. SLC (boron tank)

C-FLD

5. If RPV water level cannot be determined:

5.1 Commence backfilling RPV level instrumentation reference columns using the I&C Shop Sprague pump or hand pumps.

Indicator/Recorder	Range	Transmitter	Location
MS-LR-615	Fuel	LITS-N044A	H22-P010
MR-LI-610	Fuel	LITS-N044B	H22-P009
MS-LR-623A	Wide	LITS-N026A	H22-P004
MS-LR-623B	Wide	LITS-N026D	H22-P026
MS-LI-604	Wide	LITS-N026C	H22-P005
LI-606A	Narrow	dPT-N004A	H22-P004
LI-606B	Narrow	dPT-N004B	H22-P027
LI-606C	Narrow	dPT-N004C	H22-P005

CAUTION

Reference columns for the following instruments are located in the drywell. General CAUTION #6 is applicable.

RFW-LR-608	Upset	dPT-N017	H22-P017
MS-LI-605	Shutdown	LT-N027	H22-P027

5.2 Continue injecting water into the RPV until water level instrumentation is available.

5.3 If while executing the following steps, RPV water level can be determined, continue in this procedure at Step 6.

5.4 Determine the RPV is filled by three or more of the following methods:

a. RPV level indications upscale on fuel zone, wide range and narrow range channels.

b. RPV skin temperature drop coincident to initiation of flooding with sustained downward trend.

c. SRV acoustic monitors on open SRVs indicate flow.

d. SRV tailpipe temperature comparison indicates flow.

e. Restart of RRC-P-1A or RRC-P-1B provides stable jet pump flow indication.

5.5 If it can be determined that the RPV is filled or RPV pressure is at least 98 psig above suppression chamber pressure, terminate all injection into the RPV and reduce RPV water level

Terminated Injection _____
Time

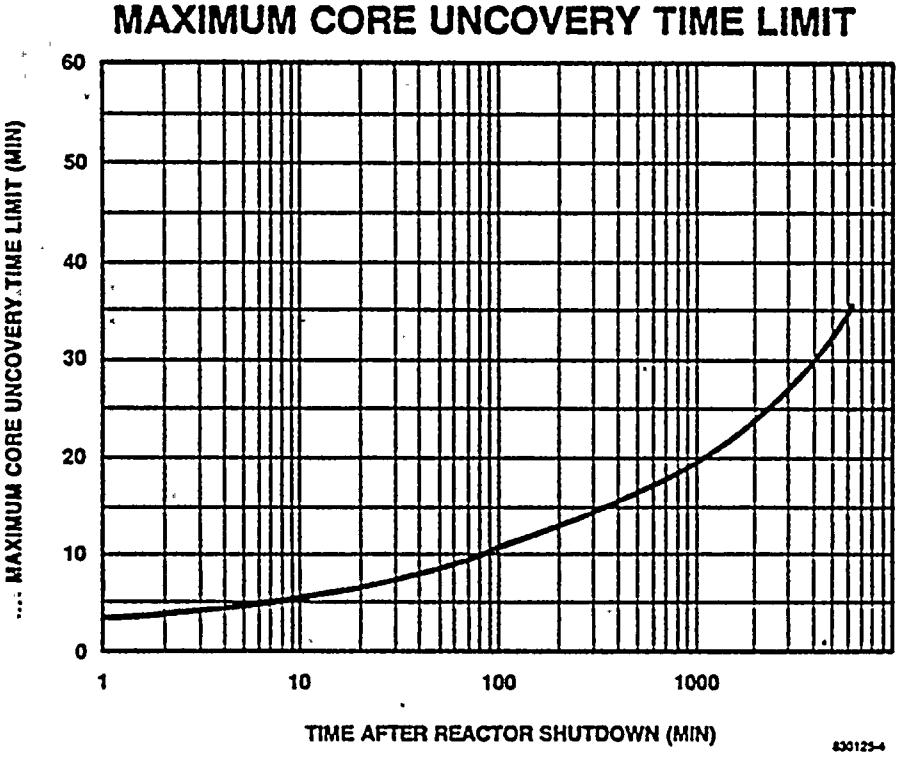
a. Open RPV head vents MS-V-1 and MS-V-2.

b. Confirm SRV's open.

c. Open RHR-V-67 until approximately 6 additional inches of stem have been exposed.

d. Open RHR-V-8 and RHR-V-9.

e. Close RHR-V-8, RHR-V-9, and RHR-V-67 when either level indication comes on scale or before exceeding the Maximum Core Uncovery Time Limit.



5.6 If RPV water level indication is not restored within the Maximum Core Uncovery Time Limit after commencing termination of injection into the RPV, return to Step 3.

C-FLD

6.

When suppression chamber pressure can be maintained below the Primary Containment Design Pressure, exit this procedure and enter:

1. PPM 5.1.1, RPV Level Control, (RPV/L) Step 6 and,

2. PPM 5.1.2, RPV Pressure Control, (RPV/P) Step 14

and execute those procedures concurrently.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

PLANT PROCEDURES MANUAL

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PROCEDURE NUMBER	APPROVED	DATE
*5.3.7	G W Baker	06/13/85

VOLUME NAME	
5	EMERGENCY PROCEDURES
SECTION	
5.3	EMERGENCY PROCEDURE CONTINGENCIES
TITLE	
*5.3.7	LEVEL/POWER CONTROL

1. If while executing the following steps, RPV flooding is required or RPV water level cannot be determined, control injection into the RPV to maintain reactor power above 8% but as low as practicable.

If reactor power cannot be determined or maintained above 8%, RPV flooding is required, enter contingent PPM 5.3.6, RPV Flooding.

C-PWR

CAUTION

Large reactor power oscillations may be observed while executing this step.

2. If:

   a. Reactor power is above 5% or cannot be determined and,

   b. Suppression pool temperature is above 110°F and,

   c. Either an SRV is open or opens or drywell pressure is above 1.65 psig,

   Lower RPV water level by terminating and preventing all injection into the RPV except from boron injection systems and CRD until either:

   a. Reactor power drops below 5% or,

   b. RPV water level drops to -161 in. (TAF) or,

   c. All SRV's remain closed and drywell pressure remains below 1.65 psig.

NOTE

If while executing the following steps, emergency RPV depressurization is required, continue in this procedure at Step 4.2.

3. If while executing the following step:

   a. Reactor power is above 5% or cannot be determined and,

   b. RPV water level is above -161 in. (TAF) and,

   c. Suppression pool temperature is above 110°F and,

   d. Either an SRV is open or opens or drywell pressure is above 1.65 psig,

   return to Step 2.

C-PWR

CAUTION

If HPCS SUCTION SWITCHOVER SUPPRESSION POOL HIGH or HPCS/RCIC SUCTION SWITCHOVER CST LEVEL LOW alarms occur, confirm automatic transfer of or manually transfer HPCS and RCIC suction from the condensate storage tank to the suppression pool. RCIC suction will not auto transfer on high suppression pool level.

CAUTION

Do not secure or place an ECCS in MANUAL mode unless by at least two independent indications: 1) misoperation in AUTOMATIC mode is confirmed or 2) adequate core cooling is assured. If an ECCS is placed in MANUAL mode, it will not initiate automatically. Make frequent checks of the initiating or controlling parameter. When manual operation is no longer required, restore the system to AUTOMATIC/STANDBY mode if possible.

CAUTION

If a high drywell pressure ECCS initiation signal (1.65 psig) occurs or exists while depressurizing, prevent injection from those LPCS and LPCI pumps not required to assure adequate core cooling prior to reaching their maximum injection pressures. When the high drywell pressure ECCS initiation signal clears, restore LPCS and LPCI to AUTOMATIC/STANDBY mode.

4. Maintain RPV water level at either:

   a. The level to which it was deliberately lowered in Step 2 or,

   b. Between +13.0 in. and +54.0 in. if RPV level was not deliberately lowered

   with the following systems:

   a. CRD - 1130-0 psig

   CAUTION

   Do not throttle the RCIC turbine below 1000 rpm.

   b. RCIC - - - - - - - - - - - - - - - - - - - 1130-60 psig

   c. Condensate Booster Pumps - - - - - - - - - 460-0 psig

      1) Verify RFW-LIC-620 in MANUAL with 0% output.

      2) Open RFW-V-117A, RFW-V-117B and RFW-V-118.

      3) Close RFW-V-112A and RFW-V-112B.

      4) Start one each COND-P-1 and COND-P-2.

      5) Slowly open RFW-V-10 while monitoring RPV water level and power.

4.1 If RPV water level cannot be maintained as required in Step 4, maintain RPV water level above -161 in. (TAF).

4.2 If RPV water level cannot be maintained above -161 in. (TAF), emergency RPV depressurization is required; enter contingent PPM 5.3.2, Emergency RPV Depressurization and execute concurrently with this procedure through Step 4.6.

4.3 Terminate and prevent all injection into the RPV except from boron injection systems and CRD until RPV pressure is below the Minimum Alternate RPV Flooding Pressure.

Number of open SRV's	Minimum Alternate RPV Flooding Pressure (psig)
7 or more	185
6	215
5	265
4	330
3	445
2	675

4.4 If less than 2 SRV's can be opened, continue in this procedure.

4.5 Commence and slowly increase injection into the RPV with the following systems to restore and maintain RPV water level above -161 in. (TAF).

a. CRD - 1130-0 psig

b. RCIC- 1130-60 psig

c. Condensate Booster Pumps - - - - - - - - - 460-0 psig

1) Verify RFW-LIC-620 in MANUAL with 0% output.

2) Open RFW-V-117A, RFW-V-117B and RFW-V-118.

3) Close RFW-V-112A and RFW-V-112B.

4) Start at least one each COND-P-1 and COND-P-2.

5) Slowly open RFW-V-10 while monitoring RPV level and power.

CAUTION

A rapid increase in injection inside the shroud may induce a large power excursion and result in substantial core damage.

4.6 If RPV water level cannot be restored and maintained above -161 in. (TAF), commence and slowly increase injection into the RPV with the following systems to restore and maintain RPV water level above -161 in. (TAF):

a. HPCS ---------- 1130-0 psig

1) Align HPCS to take suction from the suppression pool.

2) At H13-P625, block open contacts 1-2 of E22A-K3.

3) Verify HPCS-V-4 is closed.

4) Start HPCS-P-1.

5) Open HPCS-V-23.

6) Open HPCS-V-4.

7) Jog closed HPCS-V-23 while monitoring RPV water level and power.

b. LPCS ---------- 360-0 psig

c. RHR Service Water ---------- 160-0 psig

1) Use only if RHR-P-2B is inoperable.

2) Verify SW-P-1B operating.

3) Block open contacs 9-10 of relay B22H-K30 at H13-P623 if RHR interlocks have not cleared.

4) Verify RHR-V-42B closed.

5) Open RHR-V-115 and RHR-V-116.

6) Close RHR-V-68B.

7) Jog open RHR-V-53B while monitoring RPV level and power.

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d. Fire Water ---------- 90-0 psig

1) String fire hose from nearest outside hydrant to COND-P-2A.

2) Attach hose to adaptor at COND-P-2A suction.

3) Open hydrant and adaptor shutoff valves.

e. ECCS Condensatate Flush Connections 40-0 psig

1) Install the removable pipe spool between the Condensate Supply System header and any one of the following ECCS injection subsystems having an inoperable pump:

Subsystem	Tie Valves
LPCS	COND-V-26/LPCS-V-25
LPCI-A	COND-V-36/RHR-V-63A
LPCI-B	COND-V-35/RHR-V-63B
LPCI-C	COND-V-37/RHR-V-63C

2) When RPV pressure is less than 100 psig and decreasing open the tie valves associated with the installed pipe spool.

f. ECCS Keep Full Systems ---------- 30-0 psig

1) HPCS-P-3

2) LPCS-P-2

3) RHR-P-3

5. If while executing Step 6, reactor power commences and continues to increase, return to Step 2.

6. When 1230 lb. of boric acid and 1275 lb. of borax have been injected into the RPV or all control rods are inserted beyond position 06, restore and maintain RPV water level between +13.0 in. and +54.0 in.

6.1 If RPV water level cannot be restored and maintained above +13.0 in., maintain RPV water level above -161 in. (TAF).

6.2 If RPV water level cannot be maintained above -161 in. (TAF), emergency RPV depressurization is required, return to Step 4.2.

If alternate shutdown cooling is required, enter PPM 5.3.5, Alternate Shutdown Cooling.

7. Proceed to Cold Shutdown in accordance with PPM 3.2.1, Normal Shutdown to Cold Shutdown.

C-PWR