SAFETY RELATED

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DUPLICATE

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

PLANT PROCEDURES MANUAL

WNP-2

PROCEDURE NUMBER	APPROVED	DATE
*5.3.6	J.V. Baker	11/17/86
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)

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

(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 Alternate RPV Flooding Pressure.

NOTE

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

If while executing Steps 2.2 and 2.3, RPV water level can be determined and RPV flooding is not required, exit this procedure and enter:

- o PPM 5.3.7, Level/Power Control (Contingency)
- o PPM 5.1.2, RPV Pressure Control, (RPV/P) Step 10.

and execute those procedures concurrently.

(C-FLD)

CAUTION (2.2)

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

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

(C-FLD)

CAUTION

2.2 Commence and slowly raise injection flow into the RPV with the following systems until at least,

- o Two SRV's are open and,
- o RPV pressure is above the Alternte 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.

(C-FLD)

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

CAUTION (2.3.a)

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

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- o At least 2 SRV's are not open or,
- o RPV pressure cannot be increased above the Alternate RPV Flooding Pressure,

commence and slowly raise injection flow into the RPV with the following systems until at least,

- o Two SRV's are open and,
- o RPV pressure is above the Alterate RPV Flooding Pressure:

CAUTION

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. Standby 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.

(C-FLD)

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

(C-FLD)

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

2.5 When:

- o All control rods are inserted beyond position 06 or,
- o 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 until at least,

- o Three SRV's are open and,
- o RPV pressure is not decreasing and,
- o RPV pressure is not decreasing and is at least 100 psig above suppression chamber pressure:

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

NOTE

Use Standby Service Water only if RHR-P-2B is inoperable.

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

1) Verify SW-P-1B operating

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

3) Open RHR-V-42B

4) Close RHR-V-68B

(C-FLD)

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

i. SLC (boron tank)

3.2 Maintain at least 3 SRV's open and RPV pressure at least 100 psig above suppression chamber pressure by throttling injection.

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

NOTE

Use Standby Service Water only if RHR-P-2B is inoperable.

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

1) Verify SW-P-1B operating

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

3) Open RHR-V-42B

4) Close RHR-V-68B

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

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

(C-FLD)

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

- o HPCS-P-2
- o LPCS-P-2
- o RHR-P-3

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

k. SLC (boron tank)

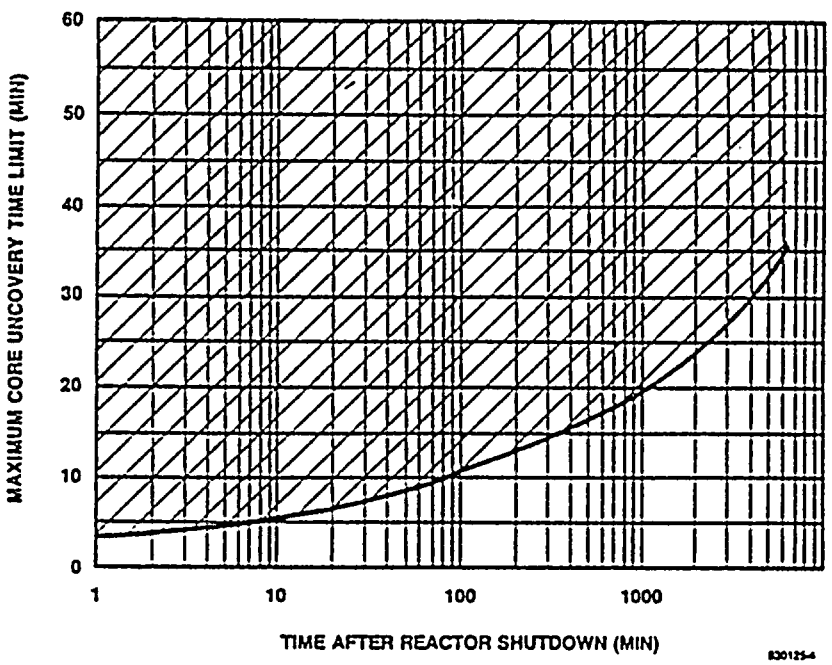
5. If RPV water level cannot be determined:

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	B22-N044A	H22-P010
MS-LI-610	Fuel	B22-N044B	H22-P009
MS-LR-623A	Wide	B22-N026A	H22-P004
MS-LR-623B	Wide	B22-N026D	H22-P026
MS-LI-604	Wide	B22-N026C	H22-P005
RFW-LI-606A	Narrow	C34-N004A	H22-P004
RFW-LI-606B	Narrow	C34-N004B	H22-P027
RFW-LI-606C	Narrow	C34-N004C	H22-P005

(C-FLD)

MAXIMUM CORE UNCOVERY TIME LIMIT



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

NOTE

If while executing Steps 5.3 and 5.4, RPV water level can be determined, continue in this procedure at Step 6.

5.3 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.

5.4 If it can be determined that the RPV is filled or RPV pressure is at least 100 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.

5.5 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.

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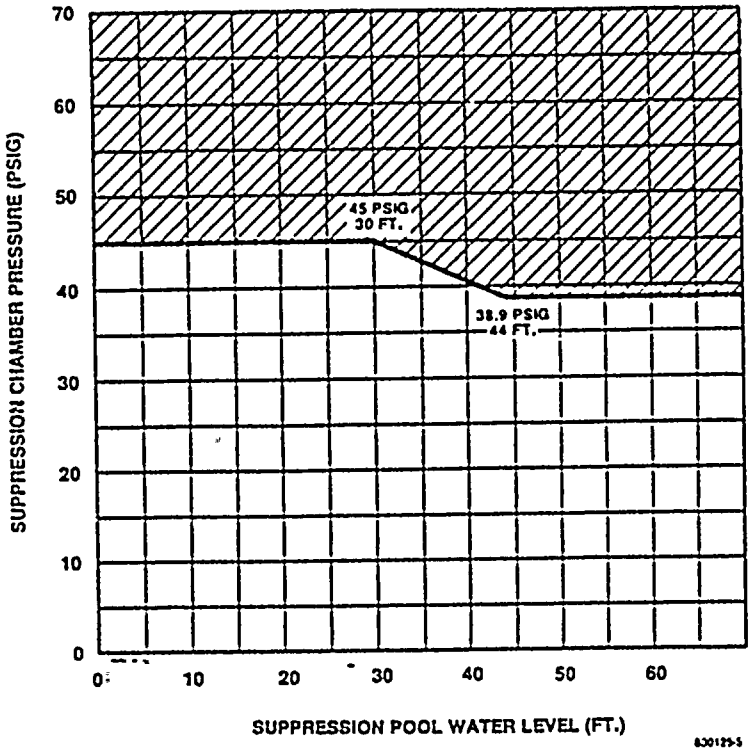
PRIMARY CONTAINMENT DESIGN PRESSURE



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

   - o PPM 5.1.1, RPV Level Control, (RPV/L) Step 5.1.1.4.2 and,
   - o PPM 5.1.2, RPV Pressure Control, (RPV/P) Step 5.1.2.4.10

and execute those procedures concurrently.

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