C 09/28/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)
DISTRIBUTION FOR INCOMING MATERIAL 50-261

REC: SCHWENCER A ORG: UTLEY E E DOCDATE: 09/22/78
NRC CAROLINA PWR & LIGHT DATE RCVD: 09/28/78

DOCTYPE: LETTER NOTARIZED: NO COPIES RECEIVED
SUBJECT: LTR 1 ENCL 1
FORWARDING RESPONSE TO APPLICANT"S & NRC MEETING OF AUGUST 22 & 23, 1978. CONSISTING OF SPECIFIC INFO CONCERNING APPLICANT"S INSERVICE INSPEC AND TESTING PROGRAM SUBMITTED ON 08/05/77, AS REQUESTED BY BATTELLE.

PLANT NAME: H B ROBINSON -- UNIT 2 REVIEWER INITIAL: XJM
DISTRIBUTOR INITIAL:

********** DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS **********

GENERAL DISTRIBUTION FOR AFTER ISSUANCE OF OPERATING LICENSE.
(DISTRIBUTION CODE A001)

FOR ACTION: BR CHIEF ORB#1 BC**W/7 ENCL

INTERNAL:
REG FILE**W/ENCL
I & E**W/2 ENCL
HANAUER**W/ENCL
AD FOR SYS & PROJ**W/ENCL
REACTOR SAFETY BR**W/ENCL
EEB**W/ENCL
J MCGOUGH**W/ENCL
NRC PDR**W/ENCL
OELD**LTR ONLY
CORE PERFORMANCE BR**W/ENCL
ENGINEERING BR**W/ENCL
PLANT SYSTEMS BR**W/ENCL
EFFLUENT TREAT SYS**W/ENCL

EXTERNAL:
LPDR'S
HARTSVILLE, SC**W/ENCL
TERA**W/ENCL
NSIC**W/ENCL
ACRS CAT B**W/16 ENCL

DISTRIBUTION: LTR 40 ENCL 39 CONTROL NBR: 781780129
SIZE: 1P+21P

********** THE END **********

TTDC Appt
CCP

CP&L
Carolina Power & Light Company

September 22, 1978

File: NG-3514 (R)
NG-1800 (R)

Serial: GD-78-2441

Mr. A. Schwencer, Chief
Office of Nuclear Reactor Regulation
Operating Reactors Branch #1
U. S. Nuclear Regulatory Commission
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
INSERVICE INSPECTION AND TESTING PROGRAM

Dear Mr. Schwencer:

On August 22 and 23, 1978, members of your staff met with Carolina Power & Light to discuss questions on the August 5, 1977, ISI submittal made to your office. Specific information was requested by Battelle to be furnished in writing. The requested information, in preliminary form, is attached herewith. A copy was sent to Battelle via Air Mail Special Delivery on September 11, 1978, so that they could begin their review. This information will be finalized and included in our revised program submittal that is due on October 6, 1978.

One specific request of Battelle was to list the valves considered by CP&L to be administratively locked. These valves would be ultimately included in the testing program. Discussions with NRC have caused us to more carefully consider the valves to be included in the testing program. Therefore, we will require an extension on the time necessary to formulate this list of valves. This list will be included with our revised program which will be submitted by October 6, 1978.

Yours very truly,

E. E. Utley
Senior Vice President
Power Supply

LRH:men*
Attachment

cc: Mr. C. Morris (Battelle)

411 Fayetteville Street o P. O. Box 1551 o Raleigh, N. C. 27602

A005
1/1

NRC COMMENTS

For valves where cold shutdown testing is indicated, explain in detail why each valve cannot be exercised during quarterly intervals. Likewise, where refueling interval testing is indicated, explain why each valve cannot be exercised during cold shutdown intervals.

RESPONSE

1. Valve CVC-312A is the check valve on the CVC charging flow line to RCS hot leg (Loop 1). Verification of the opening of this valve requires opening CVC-310A and closing normal flow path to cold leg (Loop 2). Potential failure of CVC-312A to open would result in surge of flow to RC pump seals which might cause failure of the seals.

2. Valve CVC-310A is the CVC charging flow to hot leg isolation. Verification of proper operation would require cycling as described for 312A, and failure of RC pump seals could result.

3. Valve CVC-313 is the check valve in the CVC charging line to RCS auxiliary spray on the pressurizer. Verification of opening of this valve requires cycling/opening of CVC-311 which could result in reactor trip due to low pressurizer pressure.

4. Valve CVC-311 is isolation valve for CVC charging flow to auxiliary RCS spray. Results could be as described with Valve 313 if cycled during normal operation.

5. Valve CVC-312B is in normal CVC charging flow path to RCS cold leg (Loop 2). Normal charging flow verifies check valve is full open which is the valves safety related position.

6. Valve CVC-310B is isolation to normal CVC charging flow path to RCS cold leg (Loop 2). Normal and safe position is open. Verified by normal charging flow. Complete ISI/Section X1 test requires closing, cycling and failing which requires opening of flow path to hot leg and could thus result in loss of RC pump seals as described with testing of CVC-310A.

7. Valve CVC-200A is letdown orifice isolation. Will be tested quarterly during normal operation.

8. Valve CVC-200C is letdown orifice isolation. This valve will be tested during normal operation on a quarterly basis.

9. Valve CVC-200B is letdown orifice isolation. This valve will be tested quarterly during normal operation.

10. Valve CVC-204A is letdown flow isolation. Testing during normal operation causes loss of letdown flow and with normal charging flow could result in high level trip if valve will not reopen.

11. Valve CVC-204B is same as 204A (Item 10).

12. HCV-121 is charging line control valve. Test of this valve would require closing valve, cycling and failing. During these test, unless charging flow is adjusted appropriately, the surge of flow to or from the RC pump seals could result. This would jeopardize integrity of seals.

13. Valve CVC-389 is a 3-way valve which diverts RC from RCS to drain tank or to seal leak-off return line (normal). This valve has no safety-related function and is not required to provide any function during or post accident. CVC-381 is the only valve in the seal leak-off line which has a function during accident/post-accident conditions. Will not be tested.

14. Valve HCV-137 is excess letdown hand-control valve. Valve is not required to function during accident conditions. Will not be tested.

15. Valve CVC-387 is excess letdown heat exchanger isolation valve. Valve is not required to function during accident conditions. Will not be tested.

16. Valve CVC-303A is RC pump seal leak-off return isolation to "A" pump. Valve must be open during operation to ensure integrity of the seals. Position of valve is not required to change, therefore, valve is a passive valve, administratively controlled and will not be tested.

17. Valve CVC-302A is No. 1 seal vent line. Valve is not required to function during accident or post-accident conditions. Valve 307 which is isolation for this line must be closed when RCS pressure is above 1000 psi. No testing will be performed.

18. Valve 298D is check valve in RC pump seal water injection line. Normal seal flow verifies proper opening of these valves. These valves, pursuant to Section X1 requirements, required reverse flow seating check of this valve. Due to the design of the system, no meaningful test can be performed to prove this seating at any operating condition. Relief from this type of testing is requested. Due to the availability of CVCS charging flow, seating check is not necessary from a safety standpoint. In addition, if CVCS charging flow is not available, the control valves (CVC-297) and other upstream isolation valves will be closed and pressurized with IVSW fluid.

19. Valve CVC-298A is same as CVC-298D. Same relief is requested (Item 18).

20. Valve CVC-297A is the flow control valve to the "A" RC pump seals. This valve cannot be tested during normal operation since operation would disrupt RC pump seal flow to "A" pump.

21. Valve CVC-297B is same as CVC-297A except it is for "B" RC pump.

22. Valve CVC-298E is the same as CVC-298D except it is on "B" RC pump seal flow line. Same relief is requested.

23. Valve CVC-298B is the same as CVC-298D except it is on "B" RC pump seal flow line. Same relief is requested.

24. Valve CVC-303B is the same as CVC-303A except for "B" pump. No testing will be performed.

25. Valve CVC-302B is the same as CVC-302A except for "B" pump. No testing will be performed.

26. Valve CVC-297C is the same as CVC-297A except it is on "C" pump seal flow line.

27. Valve 298F is the same as CVC-298D except it is on the "C" RC pump seal water flow line. Same relief is requested.

28. Valve 298C is the same as CVC-298A except it is on the "C" RC pump seal water flow line. Same relief is requested.

29. Valve CVC-303C is the same as CVC-303A except it is on "C" RC pump. No testing will be performed since it is a passive, administratively controlled valve.

30. Valve CVC-302C is the same CVC-302A except is is on "C" RC pump. No testing will be performed.

31. Valve CVC-266 is a check valve from the Volume Control Tank (VCT) to the CVC charging pump suction. Purpose of this valve is to prevent back flow into the VCT when chemical additions are being made through downstream lines. This valve also serves as backup to LCV-115C which closes on a low level emergency makeup signal. The check valve prevents back flow from the RWST to the CVC-266 cannot be seating tested during reverse flow during normal operation since this testing would disrupt flow to the suction of the charging pumps.

32. Valve CVC-LCV-115C is the outlet from the VCT to the charging pump suction line. Valve closes upon a low level emergency makeup signal. Valve cannot be tested during operation because operation of valve would disrupt suction to the charging pump with potential loss of pumps, and all RC pump seal flow.

33. Valve CVC-362 is a manual, maintenance bypass around the Seal Water Heat Exchanger. This valve is not required to function under accident conditions and is in no main safety system flow path. This valve will be removed from the program and no testing performed.

34. Valve CVC-318 is a manual, maintenance bypass around the Seal Water Filter. This valve is not required to function under

accident conditions and is in no main safety system flow path. This valve will be removed from the program and no testing performed.

35. Valve PCV-145 is used to keep pressure on the water in the piping downstream of letdown orifices to prevent that water from flashing to steam. The valve is downstream of both the orifice and letdown isolation valves. This valve has no function during an accident condition. Valve PCV-145 will be removed from the program and no testing will be performed.

36. Valve TCV-143 is a three-way valve that allows the operator to bypass the demineralizers or automatically bypass the demineralizers above a preset temperature. This valve is not required to perform during accident conditions and is not in the safety system main flow path. This valve will be removed from the program and no testing will be performed.

37. Valve CVC-244 isolates the deborating demineralizer. This valve is not required to function under accident conditions and is not in a main safety system flow path. This valve will be removed from the program and no testing will be performed.

38. Valve CVC-254 is check valve from VCT to holdup tanks. This valve is not required to operate under accident conditions nor is it in a main flow path for safety systems. This valve will be removed from the program and no testing will be performed.

39. Valve 239A is check valve in normal flow path from letdown to the VCT. This valve is checked open by verification of acceptable levels in the VCT during normal operation. This valve is not in an emergency or safety system flow path and is not required to function in an accident condition. This valve will be removed from the program and no testing will be performed.

40. Valve FCV-113B is used for normal boration and alternate dilute modes. This valve is not required in emergency conditions and is not in a safety or emergency flow path. This valve will be removed from the program and no testing will be performed.

41. Valve FCV-114B is used for normal and alternate dilute. This valve is not required for emergency conditions and is not in an emergency or safety system flow path. This valve will be removed from the program and no testing will be performed.

42. CVC-350 is used to inject boric acid from the BAST directly to the suction of the CVC charging pumps. Valve should not be cycled during operation since the potential exists for boration. A full Section X1 test requires cycling and timing.

43. CVC-FCV-113A is used to inject boric acid into the suction of the charging pumps. A full Section X1 test requires fail open test, cycling and timing. Valve should not be fully tested during operation since potential would exist for over boration.

44. CVC-351 is check valve on boration line with CVC-350. Normal flow verification when testing CVC-350 verifies opening of CVC-351.

45. CVC-355 is check valve on normal boration path and is checked open by verification of proper flow during boration. (Test with FCV-113A)

46. CVC-358 is the manual isolation of the RSWT to the CVC charging pump suction. Valve should not be tested during normal operation since this could cause over boration of the primary system, disrupting normal conditions.

47. LCV-115B is the automatic opening isolation valve of the RWST to CVC charging pump suction. This valve is used for emergency flow on low low VCT level. Testing during normal operation could result in over boration of the primary system and disruption of flow to charging pump if it failed to open.

48. CVC-312C is the check valve in the charging line. Normal and safety position of this valve is open to allow a boration path directly to the core. Verification of proper charging flow verifies the safe position of this valve during normal operating conditions.

49. CVC-381 is seal water return line isolation. Testing during normal operation will result in disruption of seal flow and potential for complete loss of seals.

50. CVC-307 is the No. 1 seal vent isolation valve. This valve is closed when RCS pressure is above 1000 psi. This valve has no safety function during an accident and cannot be tested during normal operation due to potential for loss of seal flow. Valve is not essential and will be removed from the test program.

Note: As an administrative procedure to verify the automatic functioning of the equipment, the boration portions of the CVCS are tested monthly in accordance with plant procedures. These test do not meet the requirements of Section X1 fully, however, these tests provide verification of operability of the automatic systems. A complete test, including failing, cycling etc.. could result in over boration or dilution which would impact normal operation. CP&L proposes to continue the monthly PT and verify individual valve performance to code requirements during cold shutdown.

MAIN, EXTRACTION AND AUXILIARY STEAM

1. MS-V1-8A is the steam supply to the auxiliary feedwater turbine driven pump. This valve will be tested during monthly pump tests.

2. MS-V1-3A ISOL - Is the mainsteam isolation valve for the A steam loop. This valve cannot be stroked during normal operation due to the resulting loss of steam flow from the A steam generator an resulting reactor trip.

3. MS-V1-3A bypass is the mainsteam isolation valve bypass. This valve is closed during normal operation and is used to equalize pressure on either side of the isolation valve to allow opening of the valve prior to power escalation. This valve is not required to change position during accident conditions. No testing will be performed on this valve since it is considered to be nonessential.

4. MS-V1-8B is the same as MS-V1-8A.

5. MS-V1-3B ISOL is the same as MS-V1-3A ISOL.

6. MS-V1-3B bypass is the same as MS-V1-3A bypass.

7. MS-V1-8C is the same as MS-V1-8A.

8. MS-V1-3C ISOL is the same as MS-V1-3A ISOL.

9. MS-V1-3C bypass is the same as MS-V1-3A bypass.

FEEDWATER CONDENSATE AND AIR EVACUATION

1. FCV-499 is the feedwater regulating valve bypass valve. Cycling this valve during normal operation as required by Section X1 of ASME could result in steam flow feed flow mismatch and plant trip.

2. FCV-489 is same as FCV-499.

3. FCV-479 is the same as FCV-499.

4. FW-V2-6C is the feedwater flow block valve. Cycling this valve during normal operation would result in steam flow/feed flow mismatch and resulting plant trip.

5. FW-V2-6B is same as FW-V2-6C.

6. FW-V2-6A is same as FW-V2-6C.

7. AFW-2 is the check valve on the condensate storage tank outlet. This valve is verified open during testing of the motor driven auxiliary feedwater pump.

REACTOR COOLANT SYSTEM

1. 535 is one of the pressurizer power operated relief valve block valves. This valve can be cycled and tested during normal operation.

2. 536 is same as 535.

STEAM GENERATOR BLOWDOWN SYSTEM

1. FCV-1933A is SG blowdown sample line isolation valve. Valve is tested during normal operation under present plant procedures. These procedures will be modified to meet the quarterly testing requirements of the ASME code.

2. FCV-1933B is same as FCV-1933A.

3. FCV-1930A is the SG blowdown isolation valve. Valve is tested during normal operation under present plant procedures. These procedures will be modified to meet the quarterly testing requirements other ASME code.

4. FCV-1930B is the same as FCV-1930A.

5. FCV-1934A is the same as FCV-1933A.

6. FCV-2934B is the same as FCV-1933A.

7. FCV-1931A is the same as FCV-1930A.

8. FCV-1930A is the same as FCV-1930A.

9. FCV-1935A is the same as FCV-1933A.

10. FCV-1935B is the same as FCV-1933A.

11. FCV-1932A is the same as FCV-1930A.

12. FCV-1932B is the same as FCV-1930A.

INSTRUMENT AND SERVICE AIR

1. V12-24A is the post-accident containment venting air supply valve. This valve is located inside containment on the instrument air line. Cycling of this valve and completing an ASME test during normal operation could result in a loss of instrument air. Therefore, this valve will be cycled during cold shutdown.

2. V12-24B is the second post-accident containment air supply valve. This line is located inside containment on the service air line. The service air line has locked isolation valves outside containment, therefore, this valve can be cycled during normal operation. However, a complete ISI/ASME Test will not be performed until cold shutdown to verify fail position and remote position indication which require visual observation of the valve.

3. V8-5 is the check valve on the instrument air line to containment. Valve is verified open during normal supply of I.A. A reverse flow check on this valve cannot be made due to system design. No testing other than verification of opening will be performed.

4. PCV-1716 is the instrument air to containment isolation valve. Testing of this valve would result in loss of instrument air and potential trip of the plant due to loss of some air-operated valves. Valve cannot be cycled and timed because there is no control switch for the valve. Valve will be failed tested during cold shutdown. In addition, the valve is tested during S1 tests required by unit Technical Specifications on a refueling interval.

PENETRATION PRESSURIZATION

1. V12-9 is the containment purge exhaust valve which has automatic closure signal on S1 and high radiation. These valves can be tested during normal operation. These valves are tested for operability by plant procedures as required by Technical Specification. Procedures will be revised to meet ASME requirements.

2. V12-8 is the same as V12-9.

3. EV-1724 is pps supply to interspace of V12-9 and V12-8.

4. V12-13 is the vacuum relief line isolation valve and can be tested during normal operation as per V12-9.

5. V12-12 is same as V12-13.

6. EV-1722 is pps supply to the interspace of V12-12 and V12-13. This valve will be tested for operability only. No timing test will be made due to the impracticality of trying to time a solenoid valve.

7. RMS-1 is the isolation valve to RMS-11,12. Valve can be tested during normal operation. Valves will be tested as is V12-9.

8. RMS-3 is same as RMS-1.

9. V12-7 is the containment purge intake valve. This valve is same as V12-9.

10. V12-6 is the containment purge intake. Is same as V12-7.

11. EV-1723 is pps supply to the interspace of V12-6 and V12-7. This valve is tested same as EV-1722.

12. RMS-4 is same as RMS-1.

13. RMS-2 is same as RMS-1.

14. EV-1728 is pps supply to interspace of RMS-3 and RMS-4. Tested same as EV-1722.

15. EV-1727 is pps supply to interspace of RMS-1 and RMS-2. Tested same as EV-1722.

POST ACCIDENT CONTAINMENT VENTING

1. V12-18 is post accident pressure relief line isolation. This valve does not receive an automatic isolation signal and cycling/opening this valve could violate containment integrity. Valve will be tested during cold shutdown when containment integrity is not required.

2. V12-19 is same as V12-18.

3. V12-11 is pressure relief valve for containment. Valve can be tested during normal operation. Present procedures will be updated to reflect ASME requirements for testing these valves.

4. V12-14A is not an essential valve. During normal operation this valve is isolated from the valve it supplies instrument air for operation. Valve will be deleted from the valve test program.

5. V12-10 is same as V12-14.

6. V12-18A is same as V12-14A.

7. V12-24C is same as V12-14A.

8. V12-24D is same as V12-14A.

9. V12-14 is post accident containment venting relief valve. Valve cannot be tested during normal operation for the same reason of V12-18.

10. V12-15 is same as V12-14.

11. EV-H2A is pps to interspace of valves V12-10, V12-11, V12-14, and V12-15. Tests of this valve can be made during testing of V12-10 and V12-11. Valve will only be cycled in normal operation since this is the same as failing electricity to the valve and timing tests are impractical.

12. EV-H2B is same as EV-H2B.

AUXILIARY COOLANT SYSTEM - COMPONENT COOLING

1. 834 is a maintenance bypass around TCV-144 and has no safety function during accident conditions. Request that this valve be removed from the program.

2. TV-144 is the temperature control valve on the nonregenative (CVCS letdown line) heat exchange. This valve is set to maintain letdown temperature at a set amount. The valve performs its designed function when temperatures are maintained as preset. In addition, no change of position or safety function is required of this valve under accident conditions. No testing of this valve is required since letdown is isolated during accident conditions. This valve is nonessential and is being removed from program.

3. 896 is emergency cooling connection outlet from the RHR pumps. Opening of valve during normal operation is permissable, however, loss of one valve in the open position would provide a leak in the CCW line which would require isolation of CCW flow to that RHR pump.

4. 895 is same as 896.

5. 864A is same as 896.

6. 864B is same as 896.

7. 721B is check valve on "B" RCP CCW supply to thermal barrier. Normal CCW flow verifies the open position of this valve. No practical reverse flow test can be performed on this valve. During an accident valve 716B and 626 and 735 isolate this line. The CCW line is protected from overpressurization by the relief valve (722A,B,C) located inside containment. Therefore, testing of this valve in the reverse flow direction is not required. Forward opening will be verified by monitoring of thermal barrier flow. This valve is considered to be nonessential and will be removed from the program.

8. 721C is same as 721B.

9. 721A is same as 721B.

10. 731 is a check valve on the CCW return line from the RCP motors. Forward flow is verified by proper CCW flow from the motors. Valve is not required to be reverse checked since it is down stream of CCW outlet and containment isolation valve 730. This valve is nonessential and will be removed from the testing program.

11. 735 is one of the CCW outlet isolation valves on the return line from the thermal barrier of the RCP's. Cycling of this valve will interrupt CCW flow to the RCP thermal barrier, therefore, testing during normal operation should not be done.

12. 716A is the inlet isolation for CCW flow to the RCP's. Testing during normal operation would cause loss of CCW to all RCP's.

13. 716B is same as 716A.

14. CCW-717 is the check valve inside containment on the CCW supply line to the RCP motor and thermal barrier. This valve is verified open during normal operation by monitoring normal CCW flow. No acceptable reverse flow test can be performed on this valve. Since the valve is inside containment on main CCW supply to RCP's and there are two automatic isolation valves just outside containment and CCW is protected from overpressurization by relief valves, no other testing is necessary on this valve. This valve is considered to be nonessential and is being removed from the testing program.

15. 737A is the manual isolation for CCW flow to the excess letdown heat exchanger. This valve can be tested during normal operation and will be tested quarterly.

16. 738 is the check valve inside containment on the CCW flow line to the excess letdown heat exchanger. This valve cannot be tested in the reverse flow direction. Normal flow/cooling in the heat exchanger verifies opening. The valve is part of a closed system inside containment and is not required to function in the reverse flow direction during an accident. No testing is required for this valve, therefore, removal from the program is requested.

17. 739 is the CCW return flow from the excess letdown heat exchanger isolation valve. Valve can be tested during normal operation and will be tested quarterly.

18. 730 is the CCW return flow from RC pump motor isolation valve. Testing during normal operation would result in disruption and momentary loss of CCW flow to the RCP's. Tests are performed at cold shutdown, with no RCP's running.

19. FCV-626 is the CCW return flow from the RC pump thermal barrier isolation valve. Testing during normal operation would result in loss of flow to thermal barrier. Tests are performed at cold shutdown, with no RCP's running.

20. 748A is manual butterfly valve on the outlet of the RHR heat exchangers. This valve is throttled during normal operation and is administratively controlled. It is a manual valve located in a locked high radiation area. Since this valve is not required to change position under accident conditions, it is considered to be a passive valve and it is located in the high radiation field, no testing is necessary.

21. 749A is the motor operated isolation valve on the CCW outlet line from the RHR heat exchanger. The valve can and will be tested quarterly during normal operating conditions.

22. 748B is the same as 748A.

23. 749B is the same as 749A.

SAFETY INJECTION SYSTEM

1. S1-850A is the "A" accumulator test line isolation valve. This valve should not be tested during normal operation due to potential for loss of accumulator pressure. Valve is normally closed during normal operation and valve is not required to change position during an accident.

2. S1-850C is the "B " accumulator test line isolation valve. Identical to S1-850A.

3. S1-850E is the "C" accumulator test line isolation valve. Same as 850A.

4. S1-865C is the accumulator discharge isolation valve for the "C" accumulator. These valves are required by Technical Specifications to be open with breakers pulled when reactor is above 1000 psig. Testing cannot be performed above 1000 psig pressure.

5. S1-865B is the accumulator discharge isolation valve for the "B" accumulator. Valve is the same as S1-865C.

6. S1-865A is the accumulator discharge isolation valve for the "A" accumulator. Valve is the same as S1-865C.

7. S1-855 is accumulator N_2 pressure makeup isolation valve. During an accident this valve is not required to function. Valve can and will be tested during normal operation.

8. S1-891A is the "A" containment spray header containment isolation valve. This valve is open during normal operation and is already in its safety position. This valve should not be tested during normal operation since containment spray header is lost when one valve is closed.

9. S1-891B is "B" containment spray header containment isolation valve. Valve is same as S1-891A.

10. S1-869 is S1 containment isolation to the hot legs. This valve is normally open. The valve can be tested during normal operation, however, failure of valve is closed position would result in loss of flow path to hot legs. Therefore, testing will be performed at cold shutdown.

11. S1-864B is the outlet valve from the RWST. Failure of valve in closed position results in loss of all S1, RHR, and C.S. systems.

12. S1-864A is same as S1-864B.

13. S1-863A is required by Technical Specifications to be closed. It is the RHR return line to the RWST which are used to drain the cavity after refueling. These valves can be cycled during normal

operation, however, failure of these valves in the open position would create a nonsafety flow path to the suction (recirculation pattern) of the RHR pumps through a six-inch line. Based on this, valve testing on this valve will be performed at cold shutdown.

14. S1-863 is same as SI-863A.

15. S1-875C is a 10 inch check valve to Loop 3 RCS cold leg. Valve must open to allow RHR/S1 flow to loop. Valve is normally closed to prevent RCS flow to S1/RHR systems. System pressure prevents test during normal operation.

16. S1-875B is 10-inch check valve to Loop 2 cold leg and is the same as S1-875C.

17. S1-875A is 10-inch check valve to Loop 1 cold let and is the same as S1-875C.

18. S1-873B is 2 inch check valve in S1 high head flow path to RCS Loop 2 cold leg. Valve cannot be tested during normal operation due to RCS pressure keeping valve closed. Valve must open to provide S1 flow to loop.

19. S1-873C is 2 inch check valve in high head S1 flow line to Loop 3 cold leg. Same reason as S1-873B.

20. S1-873A is 2 inch check valve in high head S1 flow line to Loop 1 cold leg. Same reason as S1-873B.

21. S1-875D is 2 inch check valve in high head S1 flow line to Loop 3 cold leg. Same reason as S1-873B.

22. S1-875E is 2 inch check valve in high head S1 flow line to Loop 2 cold leg. Same reason as S1-873B.

23. S1-875F is 2 inch check valve in high head S1 flow line to Loop 1 cold leg. Same reason as S1-873B.

NOTE: Valves S1-875A,B,C,D,E and F should not be tested during normal cold shutdown. Testing would require high head safety injection which 1) can only be done when RCS is vented, and 2) would inject the contents of the BIT (20,000 + PPM borated water). The latter could result in extended down times due to dilution requirements upon returning to power. By code, check valves are required to be tested only every 9 months. Refuelings are generally scheduled 12 to 18 months apart, therefore, test frequently would not be overly compromised.

24. S1-876A is an 8-inch check valve in the low head (RHR) injection line to Loop 1 cold leg. Test as per S1-875C.

25. S1-876B is an 8-inch check valve in the low head (RHR) injection line to Loop 2 cold leg. Test as per S1-875C.

26. S1-876C is an 8-inch check valve in the low head (RHR) injection line to Loop 2 cold leg. Test as per S1-875C.

27. S1-849 is check valve between high test and high head injection line. Valve line up for normal operation prohibits testing of this valve. 895V and 898F are required by Technical Specifications to be closed during normal operation .

28. S1-890A is check valve in containment spray header A. It is down stream of the S1-880 valve and testing cannot be performed due to the operation of the system. Testing would require violation of C.V. integrity or removal of one header from service. Potential failure of the other header pump or valves would require testing only during cold shutdown when containment spray is not needed.

29. S1-890B is same as 890A except for "B" header.

30. S1-866A is one of the high head to hot leg safety injection system isolation valve. This valve cannot/should not be cycled during normal operation. During operation above 1000 psig Technical Specification 3.3.1.1 h requires this valve be closed and A.C. power removed. Operation during normal operation is therefore not applicable.

31. S1-866B is the same as S1-866B.

32. 883 L is a passive valve not requiring change of position for safety function. This valve is used to isolate IVSW flow so that it goes to 870A&B. Valve has no other safety function and is administratively controlled.

RESIDUAL HEAT REMOVAL SYSTEM

1. Valve 751 is, coupled with 750, the RCS (2300 psi) and RHR system interface isolation valves. These valves may not be tested during normal operation since failure of one valve could overpressurize the low pressure RHR system plus their is a protective interlock such that 750 & 751 cannot be opened unless S1-863A&B and S1-862A&B are closed. 862A&B must be open during normal operation or RHR suction is lost.

2. Valve 750 is coupled with 751 to form RCS/RHR interface boundary. Same information applies.

3. FCV-605 is the RHR heat exchanger bypass flow control valve. Section 3.3.1.1 i of the unit Technical Specifications requires this valve to be closed and air supply to the air operator isolated. Valve is in a safety position.

4. HCV-758 is the RHR control valve which controls flow through the heat exchangers. Section 3.3.1.1 i of the unit Technical Specifications requires this valve be closed and air supply to the air operator isolated.

5. 759B is the "B" RHR heat exchanger outlet isolation valve. This valve may be tested during normal operation. Since it is in a high radiation area, remote position verification will be verified during refueling.

6. 759 A is the "A" RHR heat exchanger outlet isolation valve. This valve may be tested same as 759B.

7. 757C, coupled with 757D are the RHR cross connects and can be tested during normal operation.

8. 757D can be tested during normal operation.

PUMP TESTING

Relief from the requirements of ASME Section X1 Subsection IWP is requested as follows:

1. Service Water Pumps

   A. No flow measurements will be taken on the four service water pumps.

   B. No differential pressure measurements will be made during normal operation.

BASIS

The service water pumps are used for removing heat from certain secondary system components during normal operation. Since heat load varies and inlet temperatures vary, automatic temperature control valves will vary the flow rates through the individual components, thus varying pump resistance. The system has no installed flow measuring devices capable of measuring flow from the pumps. The piping is concrete lined which prohibits the use of ultrasonic flow measuring techniques. There is insufficient room on the outlet piping of each individual pump to allow installation of any accurate flow devices.

ALTERNATIVES

H. B. Robinson currently verifies service water system operation during refueling by conducting a "dead head" (zero flow) test on each pump. This test provides a point for comparison to determine the condition of the pumps since the previous tests. These tests will be used as an alternative to the monthly Section XI test. If a pump is declared inoperable and maintenance is required on that pump, the pump will be tested in the manner in which the refueling tests are performed. Vibration and normal pump parameters will be checked on a monthly basis as per the code requirements.