

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION					
TRIP FUNCTION	VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	APPLICABLE OPERATIONAL CONDITION	ACTION	
4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION					
a. RCIC Steam Line Flow - High	8	1	1, 2, 3	22	
b. RCIC/RIIR Steam Line Flow - High	8	1	1, 2, 3	22	
c. RCIC Steam Supply Pressure - Low	8, 9	2	1, 2, 3	22	
d. RCIC Turbine Exhaust Diaphragm Pressure - High	8	2	1, 2, 3	22	
e. RCIC Equipment Room Temperature - High	8	1	1, 2, 3	22	
f. RCIC Equipment Room Δ Temperature - High	8	1	1, 2, 3	22	
g. RWCU/RCIC Steam Line Routing Area Temperature - High	8	1	1, 2, 3	22	
h. Drywell Pressure - High	9	2	1, 2, 3	22	
i. Manual Initiation(h)	8	1	1, 2, 3	24	
5. RIIR SYSTEM SHUTDOWN COOLING MODE ISOLATION					
a. Reactor Vessel Water Level - Low, Level 3	6	2	1, 2, 3	26	
b. Reactor Vessel (RIIR Cut-in Permissive) Pressure - High	6	1	1, 2, 3	26	
c. Equipment Area Temperature - High	6	1	1, 2, 3	26	
d. Equipment Area Ventilation Δ Temp. - High	6	1	1, 2, 3	26	
e. Shutdown Cooling Suction Flow Rate - High	6	1	1, 2, 3	26	
f. RIIR Heat Exchanger Area Temperature - High					
Room 606	6	1	1, 2, 3	26	
Room 507	6	1	1, 2, 3	26	
Room 605	6	1	1, 2, 3	26	
Room 505	6	1	1, 2, 3	26	
g. Manual Initiation	6	1/group	1, 2, 3	24	

(i) → ADD NOTE

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WASHINGTON NUCLEAR - UNIT 2

3/4 3-14

Amendment No. 12

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(i) ~~2~~ Hydro Mole

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TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

ACTION STATEMENTS

- ACTION 20 - Be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- ACTION 21 - Be in at least STARTUP with the associated isolation valves closed within 6 hours or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- ACTION 22 - Close the affected system isolation valves within 1 hour and declare the affected system inoperable.
- ACTION 23 - Be in at least STARTUP within 6 hours.
- ACTION 24 - Restore the manual initiation function to OPERABLE status within 8 hours or close the affected system isolation valves within the next hour and declare the affected system inoperable or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- ACTION 25 - Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within 1 hour.
- ACTION 26 - Lock close or close, as applicable, the affected system isolation valves within 1 hour and declare the affected system inoperable.

TABLE NOTATIONS

*May be bypassed with reactor steam pressure \leq 1037 psig and all turbine stop valves closed.

**When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

#During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

(a) A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.

(b) Also actuates the standby gas treatment system.

(c) Also trips and isolates the mechanical vacuum pumps.

(d) A channel is OPERABLE if 2 of 4 detectors in that channel are OPERABLE.

(e) Also actuates secondary containment ventilation isolation dampers per Table 3.6.5.2-1.

(f) Closes only RWCU system outboard isolation valve RWCU-V-4.

(g) Only valves RHR-V-123A and RHR-V-123B in Valve Group 5 are required for primary isolation.

(h) Manual initiation isolates RCIC-V-8 only and only with a coincident reactor vessel level-low, level 3.

(i) NOT REQUIRED FOR RHR-V-8 AS CONTROL IS TRANSFERRED TO THE ALTERNATE REMOTE SHUTDOWN PANEL DURING OPERATIONAL CONDITIONS 1, 2 & 3 AND THE ISOLATION INTERLOCKS ARE BYPASSED. OPERATION CAN BE RETURNED TO THE CONTROL ROOM IN OPERATIONAL CONDITIONS 1, 2 & 3 WHEN REACTOR PRESSURE IS LESS THAN 135 PSIG.

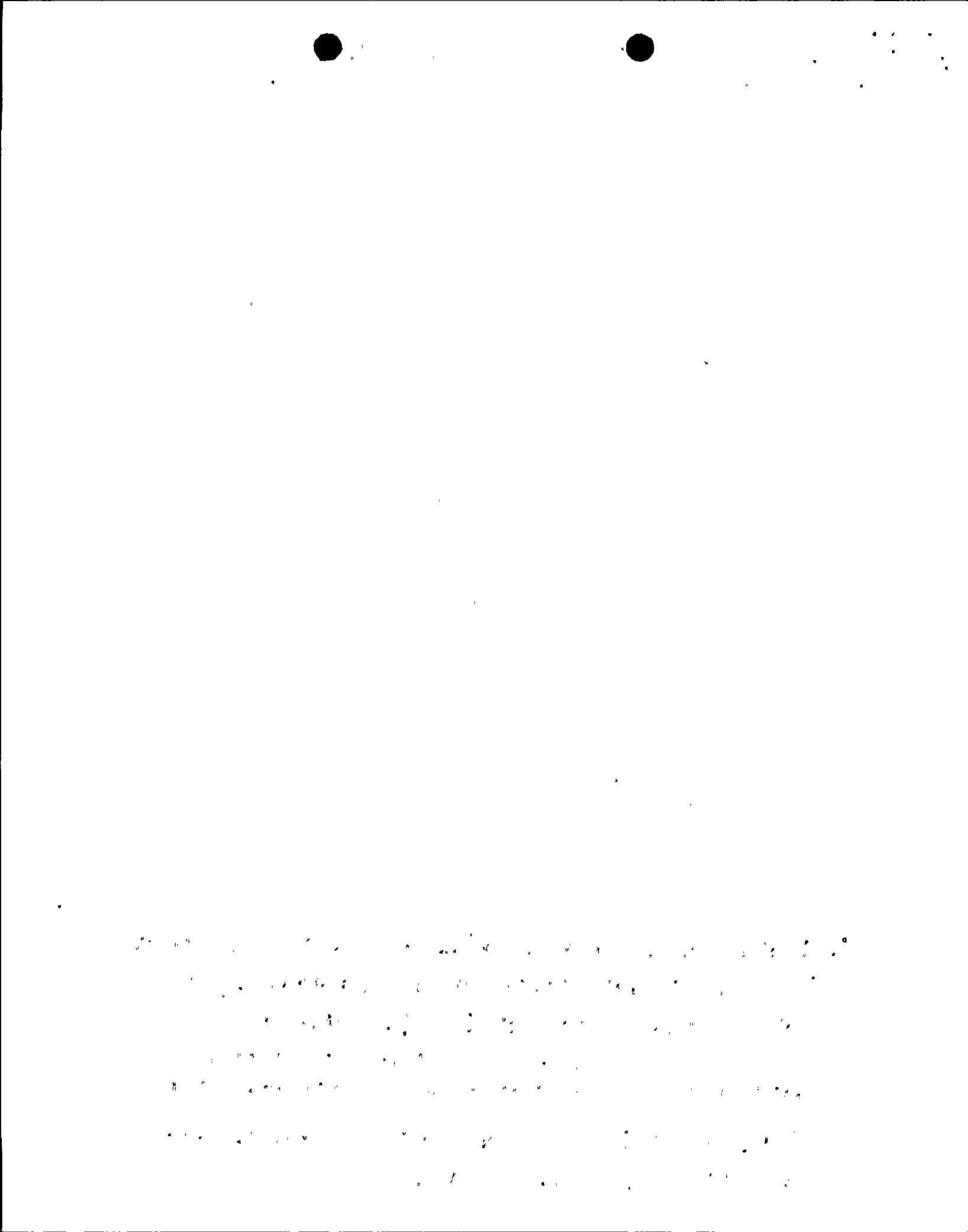


TABLE 3.6.3-1 (Continued)
PRIMARY CONTAINMENT ISOLATION VALVES

<u>VALVE FUNCTION AND NUMBER</u>	<u>VALVE GROUP(a)</u>	<u>MAXIMUM ISOLATION TIME (Seconds)</u>
a. <u>Automatic Isolation Valves (Continued)</u>		
Reactor Closed Cooling	4	60
RCC-V-5		
RCC-V-21		
RCC-V-40		
RCC-V-104		
Radiation Monitoring Supply & Return	4	5
PI-VX-250		
PI-VX-251		
PI-VX-253		
PI-VX-256		
PI-VX-257		
PI-VX-259		
Residual Heat Removal		
RHR-V-123A,B(g)	5	15
RHR-V-8(g) (K) <i>ADD</i>	6	40
RHR-V-9(g)	6	40
RHR-V-23(g)	6	90
RHR-V-53A,B(g)	6	40
RHR-V-24A,B(c)	10	270
RHR-V-21	10	270
RHR-V-27A,B(c)	10	36
Reactor Water Cleanup System	7	
RWCU-V-1(d)		30(j)
RWCU-V-4		21(j)

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TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

<u>VALVE FUNCTION AND NUMBER</u>	<u>VALVE GROUP(a)</u>	<u>MAXIMUM ISOLATION TIME (Seconds)</u>
d. <u>Other Containment Isolation Valves (Continued)</u>		
Radiation Monitoring		N.A.
PI-EFCX-72f PI-EFCX-73e		
Transversing Incore Probe System		N.A.
TIP-V-6 TIP-V-7,8,9,10,11(e)		

TABLE NOTATIONS

*But greater than 3 seconds.

#Provisions of Technical Specification 3.0.4 are not applicable.

- (a) See Technical Specification 3.3.2 for the isolation signal(s) which operate each group.
- (b) Valve leakage not included in sum of Type B and C tests.
- (c) May be opened on an intermittent basis under administrative control.
- (d) Not closed by SLC actuation signal.
- (e) Not subject to Type C Leak Rate Test.
- (f) Hydraulic leak test at 38.2 psig.
- (g) Not subject to Type C test. Test per Technical Specification 4.4.3.2.2
- (h) Tested as part of Type A test.
- (i) May be tested as part of Type A test. If so tested, Type C test results may be excluded from sum of other Type B and C tests.
- (j) Reflects closure times for containment isolation only.

- (k) DURING OPERATIONAL CONDITIONS 1, 2 & 3 THE REQUIREMENT FOR AUTOMATIC ISOLATION DOES NOT APPLY TO RHR-V-8.
RHR-V-8 MAY BE OPENED IN OPERATIONAL CONDITIONS 2 & 3 WHEN REACTOR PRESSURE IS LESS THAN 135 PSIG.

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RHR-V-8 & V-9 CHRONOLOGY OF EVENTS

1. JUNE, 1983 - AMENDMENT NO. 31 TO WNP-2 FSAR

In Q-040.079 the NRC required compliance with BTP RSB 5-1 to preclude a LOCA thru the Hi/Low Pressure Interface. It states in part:

"These two motor operated valves and their associated cable may be subject to a single fire hazard."

In the Supply System's response, the acceptability of RHR-V-8 and V-9 was specifically addressed.

This amendment was reviewed and accepted by the NRC with no conditions attached to our license, nor were there any additional questions and/or concerns identified in the SER or its supplements.

2. MAY 10, 1984 - LICENSEE EVENT REPORT 84-031

Notification of physical wiring problems and thermolagging/fire barriers associated with Safe Shutdown (SSD) path. No concerns were raised regarding Hi/Low Pressure Interface valves. Identified a cable that provides an isolation signal to RHR-V-123A that was not protected.

3. June 7, 1985, Letter to GC Sorensen from DF Kirsch (NRC Region V), "Nonconformance of Safe Shutdown Equipment to Appendix R Requirements." Referred to LER 84-031 and requested further information regarding deficiencies found with respect to SSD in the event of a Control Room Fire. Requested response within 10 days, did not specifically address any valves.

4. June 17, 1985, Letter to DF Kirsch from GC Sorensen. Response to NRC Region V request (item 3 above), included description of seven deficiencies as well as proposed resolution (Attachment A).

Deficiency (No. 7 in letter)

In the Control Room, the physical separation between the control switches for two series high-to-low pressure system interface valves (RHR-V-53A and RHR-V-123A) is not sufficient to preclude hot shorts from opening both valves simultaneously and failing the low pressure safe shutdown system during a Control Room fire.

Proposed Resolution:

One of the two series valve control circuits will be routed to a transfer switch located in the Remote Shutdown Room allowing isolation. Operation of this transfer switch will be specified in the Main Control Room evacuation procedure.

5. March 14, 1986, Letter to GC Sorensen from DF Kirsch (NRC Region V).

NRC prepared and issued an SER relative to the nonconformance issue identified in references 3 and 4 above.

"As indicated in the enclosed SER, the NRR staff has found the Supply System's proposed resolutions to be acceptable with the proviso that the transfer switch to be located outside the control room (see Deficiency 7, Reference 2) normally should be set in the "isolate" position. We suggest that you obtain verification that the Supply System accepts and will implement this proviso."

"Item seven deals with the potential opening of the high/low RHR pressure interface due to a control room fire generating an open signal to both valves RHR-V-53A and RHR-V-123A which are in series. As an interim measure, the licensee must remove power from one of these valves, such as by opening the breaker to the valve. Although this is an acceptable means to resolve the high/low pressure interface problem the licensee has proposed installing a transfer switch outside of the control room in order to isolate one valve from the control room in the event of a fire in the control room. This is acceptable provided that the transfer switch is maintained normally in the "isolate from the control room" position. Pending acceptance of this interim measure, the interim measures and corrective actions are acceptable."

6. April 4, 1986 NRC Region V Inspection Report No. 86-05

Item 4.4.2 (page 8) of this report indicated that the Licensee had determined that three sets of RHR system valves need analysis and protection. The NRR (Region V) stated that RHR-V-53A and 123A should be de-energized.

"Several potential candidates were identified and discussed with the licensee. The licensee was able to resolve all concerns with the additional valves (emphasis added)."

7. April 24, 1986 - Generic Letter 86-10 issued. This GL was surrounded by controversy and confusion as evidenced by the workshops that were held around the country prior to its issuance.

The staff's present position with regard to RHR-V-8 and V-9 appears to be based solely on an interpretation of this generic letter.

8. May 23, 1986, Letter to GC Sorensen from EG Adensam, "WNP-2 Fire protection - Request for Additional Information"

NRR requires further signal/spurious automatic function loss evaluation.

9. June 11, 1986 meeting with NRC in Bethesda to discuss NRC's request for additional information. First indication that there may be valves, other than those noted in the April 4, 1986 inspection report, of concern to NRR.

10. June 30, 1986, Letter, G02-86-613, GC Sorensen to EG Adensam, "WNP-2 Fire Protection Program - Request for Additional Information".

Response to 12 questions from NRC (nothing related directly to RHR-V-8/V-9).

Supply System reiterates single failure analysis approach (Question 5)

11. June 1986

During this month the Supply System had numerous telephone conversations with John Ridgley in which we specifically discuss RHR-V-8 and V-9 and our technical and licensing bases for not being required to remove power.

12. July 16, 1986, Letter, G02-86-656, GC Sorensen to EG Adensam, "Final Resolution of Hi/Low Pressure Interface Concern"

This is response to NRC's SER dated March 14, 1986. This appears to be first formal indication that multiple spurious actuations must be considered with respect to Hi/Low Pressure Interface valves.

13. August 1986 - NRC Region V Inspection 86-25 dated December 29, 1986. RHR valve position noted as an open item, deferred to NRR for resolution.

14. Due to direct interaction with representatives from NRR and Region V at the August 1986 inspection exit meeting a letter committing to remove power, as suggested by the NRR representative, was drafted. Simultaneously, a hurried change was made to the FSAR (Amendment 37), which contained an error in referring to power removal as the preferred approach. During the review of the draft response, safety ramifications not previously recognized were identified that required us to reconsider removing power from RHR-V-8.

A decision was made to continue to interact with the staff to reconcile or obtain satisfactory justification for modifying the RHR-V-8 design.

15. October 20, 1986, Letter EG Adensam to GC Sorensen "Request for Additional Information"

In item 7, Hi/Low Pressure Interface in RHR System the NRC requested:

- a) Document your commitment to remove power from the RHR-V-8 valve during non-shutdown operating conditions.
- b) Document your commitment to remove the power from the RHR-V-123A and RHR-V-123B valves either at the valve or at the MCC.
- c) Provide a schedule and justification for the schedule to implement items a) and b) above.

16. December 1, 1986, Letter, G02-86-1049, GC Sorensen to EG Adensam "WNP-2 Fire Protection, Request for Additional Information",

- o Removed power from RHR-V-123A & V-123B
- o Reconfirmed position contained in our response of July 16, 1986 (i.e. do not intend to remove power). Provided additional technical and regulation based justification.

17. April 7, 1987 - NRC Region V Inspection Report 87-02 (participants included Adensam, Ridgley, Campe, Hulman, et al).

Item 2.G - Hi/Low Pressure Interface Analysis specifically addressed RHR-V-8 and V-9.

Per EG Adensam, NRR assumed responsibility to resolve regulatory conflicts and provide specific direction addressing those conflicts.

18. May 13, 1987, Letter G Knighton to GC Sorensen, "Compliance with Requirements of Appendix R to 10CFR50 Regarding Prevention of LOCAS at Hi/Low Pressure Interfaces."

"We (NRC) are advising you that we require WPPSS to implement appropriate modifications to these isolation valves (RHR-V-8 and V-9) as soon as practical...."

Further asked us to advise of planned modifications to ensure isolation as well as schedule for completion.

19. June 3, 1987, Letter G02-87-190, GC Sorensen to NRC, "Response to Generic Letter 86-10 Interpretation of Hi/Low Pressure Interface Concerns".

Supply System committed to provide preferred option by mid-August

20. August 20, 1987, Letter, G02-87-232, GC Sorensen to NRC, "Resolution of Generic Letter 86-10 Hi/Low Interface Concern"

Identified providing a transfer switch on the remote shutdown panel for the RHR-V-8 valve as the preferred method. Also identified bypassing the RHR permissive interlock as an unreviewed safety question, and pointed out the need for a T/S change to Table 3.3.2-1.

21. October 21, 1987, Letter, GW Knighton to GC Sorensen, "WNP-2 Proposed Resolution of Spurious Opening of RHR-V-8 and RHR-V-9 in the Event of a Control Room Fire".

Acknowledged our preferred action to provide a transfer switch on the remote shutdown panel and to have control of RHR-V-8 transferred to the remote panel during normal operation.

22. October 9, 1987, Information Notice No. 87-50 "Potential LOCA at High-and-Low-pressure Interfaces from Fire Damage".

The Supply System was totally surprised by the Information Notice issuance and is preparing a response to address the inaccuracies contained therein.