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SUBJECT: Responds to NRC 980424 ltr re violations noted in insp rept
 50-397/98-05. Corrective actions: event notification was made
 to NRC upon discovery that HPCS injection had occurred
 subsequent to 980311 scram.

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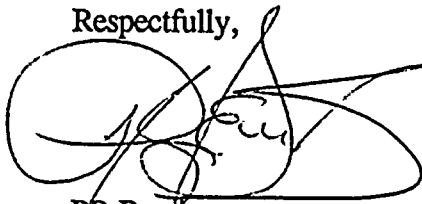
Subject: **WNP-2, OPERATING LICENSE NPF-21,
NRC INSPECTION REPORT 50-397/98-05
RESPONSE TO NOTICE OF VIOLATIONS**

Reference: Letter dated April 24, 1998, AT Howell (NRC) to JV Parrish (SS), "NRC
Inspection Report 50-397/98-05"

The purpose of this letter is to provide a response to the notice of violations outlined in the reference. The notice of violations resulted from a special inspection which took place at the WNP-2 facility to examine the facts surrounding the March 11, 1998 main steam isolation valve closure and subsequent reactor scram. The Supply System's response to the notice of violations is enclosed as Attachment A.

Should you have any questions or desire additional information regarding this matter, please call me or Mr. PJ Inserra at (509) 377-4147.

Respectfully,



PR Bernis
Vice President, Nuclear Operations
Mail Drop PE23

Attachment

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VIOLATION 50-397/9805-01

The Supply System accepts this violation

Restatement of Violation

10 CFR 50.72 Section (b)(1), "Non-Emergency Events," requires that the licensee provide a report (if not reported as an emergency class under Section (a)), to the NRC as soon as practical and within 1 hour for occurrences included in paragraphs (b)(1)(i-vi). Paragraph (b)(1)(iv) identifies any event that results or should have resulted in emergency core cooling system discharge into the reactor coolant system as a result of a valid signal.

Contrary to the above, the licensee did not report within 1 hour that the high pressure core spray system had actuated and discharged into the reactor coolant system on March 11, 1998, at 0516 PST, because of a valid low reactor pressure vessel water level signal.

This is a Severity Level IV violation (Supplement I) (50-397/9805-01).

Reason for Violation

The reason for the failure to report the Emergency Core Cooling System (ECCS) injection was inadequate command and control.

Instead of taking an overview role, the control room supervisory staff were involved in directing the operating crews' actions after the scram. Following the reactor scram, there was a temporary loss of (full-in) position indication for four control rods. Consistent with procedural guidance, the operating crew focused on verifying the position of these control rods. However, the control room crew did not maintain an awareness of integrated plant response and missed indications that reactor vessel level had decreased to less than -50 inches or that reactor core isolation cooling and high pressure core spray (HPCS) systems had actuated and injected on the reactor level 2 signal. A contributing cause for failing to report the injection is that the annunciators for HPCS injection were cleared by a panel operator before it was realized that the injection had occurred.

Corrective Actions Taken and Results Achieved

An event notification was made to the NRC upon discovery that a HPCS injection had occurred subsequent to the March 11, 1998 scram which occurred at 0516. The HPCS injection was reported at 2042 (PST) on March 12, 1998. An evaluation was conducted to determine the cause and initiate corrective actions for not reporting the HPCS injection. Corrective actions which have been implemented as a result of the problem evaluation are:



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- The crew on shift at the time of the scram, in conjunction with the operations training department, developed a performance deficiency analysis and remediation report and then were trained on relevant issues. All issues which are classified as potentially generic to other operating crews are being addressed through the WNP-2 corrective action program.
- The operations manager counseled the operating crew management on their responsibility to provide oversight and reinforced management expectations to understand and ensure proper system response during transients.
- The importance of the Control Room Supervisor and Shift Manager's role in monitoring panel operators assessment and awareness of system response was communicated to each operating crew prior to assuming duties for reactor startup.

Corrective Actions That Will be Taken to Avoid Further Violations

Procedural guidance and operations training curriculum will be revised to promote enhanced monitoring of integrated plant response during initial post scram periods.

Date of Compliance

At 2042 (PST) on March 12, 1998 WNP-2 was in full compliance with NRC licensee reporting requirements of 10 CFR 50.72 Section (b)(1)(iv).

VIOLATION 50-397/9805-02

The Supply System accepts this violation

Restatement of Violation

WNP-2 Technical Specification 5.4.1.a requires written procedures to be established, implemented, and maintained for those activities outlined in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

Appendix A of Regulatory Guide 1.33 recommends administrative procedures for hot standby to cold shutdown.

Surveillance Procedure OSP-RCS-C102, "RPV Vessel Cooldown Surveillance," Revision 0, paragraph 7.11, requires that the control room operator verify the minimum reactor vessel metal temperature/pressure are to the right of the curve provided in Attachment 9.1, "Minimum Vessel Metal Temperature vs Reactor Vessel Pressure (Operational Values)," at least once per 30 minutes and initial Attachment 9.4, "Cooldown Temperature/Pressure Log."



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Contrary to the above, during the cooldown on March 11, 1998, with the reactor subcritical, the reactor pressure vessel temperature and upper head pressure indications used to monitor the cooldown were not appropriately verified and maintained within the acceptable region of the temperature/pressure curve provided in Attachment 9.1, "Minimum Vessel Metal Temperature VS Reactor Vessel Pressure."

This is a Severity Level IV violation (Supplement I) (50-397/9805-02).

Reason for Violation

Exceeding the procedural reactor pressure versus temperature (P/T) curve during cooldown was primarily due to less than adequate command and control. Management expectations were not met regarding timely reduction in reactor pressure to increase margin to the curve.

A contributing cause of the cooldown uncertainty was the P/T graph (Technical Specification Figure 3.4-11-2). The P/T curve graph used to track the cooldown rate was graduated in 50 degree versus 100 psig increments resulting in poor resolution and difficulty in plotting the pressure and temperature data in order to determine proximity to the cooldown limit.

The primary method for determining the minimum Reactor Pressure Vessel (RPV) metal temperature is with the Reactor Water Cleanup (RWCU) bottom head drain temperature element. Monitoring the reactor coolant temperature is an acceptable method provided Reactor Recirculation (RRC) and RWCU flow are established. When flow is not available, the alternate method for monitoring RPV metal temperature uses the lowest of six RPV metal surface temperature indications. Beginning at approximately 0730 on March 11, 1998 this alternate method was employed due to lack of RRC and RWCU flow. These outside surface metal temperatures were found to be more conservative (approximately 200° F cooler) than the coolant temperatures measured upon restart of RRC and RWCU.

Corrective Actions Taken and Results Achieved

The Shift Manager and Control Room Supervisor were notified upon discovery and Technical Specification action statement 3.4.11.A was entered. A pre job brief was held to reduce reactor pressure to restore cooldown limits. Pressure reduction to 300 psig began at 1016 and was completed by 1029. Subsequent engineering evaluation determined that due to the conservative nature of the temperature data used, the minimum temperature requirements of Technical Specification Figure 3.4-11-2 P/T curve limits were not actually exceeded and the reactor vessel was not subjected to adverse thermal effects.

RPV heatup and cooldown surveillance procedures OSP-RCS-C101 and C102 have been revised to include digital tables to provide operators greater resolution when monitoring heatup and cooldown rates. The table has 5 degree and 25 psig increments. The numbers used in the tables are taken from the calculation performed to develop the P/T curve.

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Corrective Actions That Will be Taken to Avoid Further Violations

The operating crew involved with this event is generating a lessons learned document that will be used by each Shift Manager for discussions with all operating crews.

The scram and normal shutdown procedures are being revised to include a precaution emphasizing the need to take control of the plant cooldown rate particularly when forced circulation is not available.

Date of Compliance

When reactor pressure reduction to restore adequate margin to the cooldown curve was completed and at 1029 on March 11, 1998, WNP-2 was in full compliance with Technical Specification 5.4.1.a which requires written procedures to be established, implemented, and maintained for those activities outlined in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

VIOLATION 50-397/9805-03

The Supply System accepts this violation

Restatement of Violation

WNP-2 Technical Specification 5.4.1.a requires written procedures to be established, implemented, and maintained for those activities outlined in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

Appendix A of Regulatory Guide 1.33 recommends that administrative procedures be developed for, among others, procedure adherence and temporary change control.

Licensee Plant Procedure Manual Procedure SWO-PRO-02, "Preparation, Review, Approval and Distribution of Procedures," Revision 3, Section 3.10.1, states that, "A temporary change shall NOT alter the intent of the procedure." Paragraph 5.9 defines intent as the stated purpose or scope of a procedure as defined in the purpose section of the procedure.

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Procedure TSP-DG2/LOCA-B0501, "Standby Diesel Generator DG2 LOCA Test," Section 1.0, "Purpose," states that, "The procedure provides instructions for operating personnel to perform surveillance testing of DG2 during simulated ECCS initiation (LOCA) conditions in accordance with the Technical Specifications Surveillance Requirements." The identified technical specification surveillance requirements involve logic system functional testing and response time testing.

Contrary to the above, Temporary Change Notice 98-110 dated March 12, 1998, to Procedure TSP-DG2/LOCA-B0501, "Standby Diesel Generator DG2 LOCA Test," Revision 0, changed this logic system functional test and response time test, as described in the purpose of the procedure, to allow for full-low pressure coolant injection flow to the reactor vessel from the suppression pool. Specifically, Temporary Change Notice 98-110 modified the previous requirement to close Residual Heat Removal Valves 111 B and C, to close Residual Heat Removal Valves 111 B and C at the discretion of the control room supervisor or shift manager.

This is a Severity Level IV violation (Supplement I) (50-397/9805-03).

Reason for Violation

The reason for the violation was that risks and consequences associated with implementing the TCN were not adequately reviewed or assessed. There was also a deficiency to recognize initially that the procedure changes did not comply with the criteria for temporary procedure changes delineated in administrative procedure SWP-PRO-02. A review of post scram data raised questions concerning the Residual Heat Removal (RHR) pumps start logic. For this reason station personnel decided to verify with a logic system function test that the RHR pump start logic for Division II was functioning correctly. The control room staff assumed the responsibility of determining which portions of the procedure needed to be performed in order to accomplish the logic test. This effectively removed a barrier for reviewing the technical and administrative adequacy of the test plan. In order to minimize exposure to personnel and out of service time for the pumps, the control room staff initiated TCN 98-110 which changed the requirement in the procedure to close RHR manual isolation valves RHR-V-111B and RHR-V-111C which are located in the drywell. This permitted the valves to remain open during performance of the test which established an injection path to the reactor vessel.

Corrective Actions Taken and Results Achieved

Subsequent to the occurrence of the low pressure coolant injection, WNP-2 personnel identified that the reason the TCN altered the intent of the procedure was that the method by which test data applicable to the acceptance criteria would have been obtained was changed. Specifically, steps c and d of section 7.2.32 of the procedure instruct the test performer to record the time the RHR pumps B and C take to reach maximum discharge pressure. This time is directly affected by the position of the manual isolation valves.



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The operations manager counseled the Shift Manager and Control Room Supervisor on shift at the time to discuss the importance of maintaining the overview role and command and control during special and transient evolutions. The operations manager also reinforced expectations to all Shift Managers concerning the need to separate the technical review function and management functions before making changes to technical procedures. The changes made to TSP-DG2/LOCA-B501 by TCN 98-110 were removed from the procedure in revision 2 which was approved on May 7, 1998. This revision requires manual injection valves RHR-V-111B and RHR-V-111C to be closed as a prerequisite for performing the test.

Corrective Actions That Will be Taken to Avoid Further Violations

The engineering general manager will reinforce expectations to the system engineers concerning their responsibility for any changes to technical procedures and their responsibility to perform a thorough review of any test that will be performed on their assigned systems.

Lessons learned from this event will be reviewed by the shift managers with their operating crews. The discussion will include what constitutes changing the intent of a procedure and the importance of maintaining a questioning attitude.

Date of Compliance

When the changes made by TCN 98-110 were removed from procedure TSP-DG2/LOCA-B501 on May 7, 1998, WNP-2 was in full compliance with Technical Specification 5.4.1.a which requires written procedures to be established, implemented, and maintained for those activities outlined in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978 which recommends that administrative procedures be developed for procedure adherence and temporary change control.

VIOLATION 50-397/9805-04

The Supply System accepts this violation

Restatement of Violation

WNP-2 Technical Specification 5.4.1.a requires written procedures to be established, implemented, and maintained for those activities outlined in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

Appendix A of Regulatory Guide 1.33 requires, in part, procedures for the startup, operation, and shutdown of safety-related boiling water reactor systems.



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Contrary to the above, two procedures were determined to be inadequate for the operation and shutdown of safety-related boiling water reactor systems. Procedure PPM 2.7.3, "High Pressure Core Spray Diesel," Revision 29, did not provide adequate direction for the shutdown of the high pressure core spray system. The procedure did not identify the high pressure core spray initiation seal-in on P601 control board. On March 11, 1998, following the automatic initiation of the high pressure core spray system, the associated diesel generator was stopped before the initiation seal-in logic was reset, resulting in the reinitiation of the high pressure core spray diesel generator. Secondly, Temporary Change Notice TCN 98-113, made to Procedure TSP-DG2/LOCA-B501, Step 7.1.33, Substep a, to override the opening of the injection valve, was inadequate and resulted in low pressure coolant injection to the reactor vessel during the conduct of the March 12, 1998, logic system functional test.

This is a Severity Level IV violation (Supplement I) (50-397/9805-04).

Reason for Violation

Procedure 2.7.3 was inadequate because it directed test performers to ensure that no ECCS initiation signal was present by checking that annunciators 4.601.A1-1.7, 1.8, and 2.3 on panel H13-P601 were cleared instead of verifying that the ECCS initiation seal-in logic was reset on panel H13-P601 before shutting down the diesel engine. If the seal-in logic is tripped, the diesel will be signaled to start regardless of whether the initiating signal indicated by the annunciators has been cleared or not.

Procedure TSP-DG2/LOCA-B501 was made inadequate by a TCN because the change failed to specify the correct sequence in which steps must be performed to avoid opening the injection valves when generating the LOCA signal. The temporary procedure change directed the operators to hold the control switches for the injection valves in the closed position, generate the LOCA signal, and simulate a containment isolation signal simultaneously. Although the operators attempted to perform the steps simultaneously, the LOCA signal was initiated prior to the control switches being placed in the close position. This caused RHR-P-2B and 2C to start and the injection valves to open. Had the procedure change been written to require the control switches to be held in the close position prior to performance of the other two steps, an injection would not have occurred.

Corrective Actions Taken and Results Achieved

Subsequent to the Division III diesel restart, the ECCS initiation seal in logic was reset on panel H13-P601 and the diesel secured. Each of the diesel procedures 2.7.3, 2.7.3A, and 2.7.3B were revised to instruct the test performers to ensure that all auto start signals are clear and ECCS initiation seal-in logic is reset prior to shutting down the diesel engine.

RPV injection was secured by closing the injection valves with their manual control switches once they reached the full open position. RPV level was stabilized and returned to normal.

TCN 98-113 made to TSP-DG2/LOCA-B501 was a "one time only" TCN and was removed from the procedure after completion of the test.



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Corrective Actions That Will be Taken to Avoid Further Violations

All corrective actions to avoid further violations have been completed.

Date of Compliance

TCN 98-113 made to TSP-DG2/LOCA-B501 was a "one time only" TCN and was removed from the procedure after completion of the test on March 13, 1998.

Each of the diesel procedures 2.7.3, 2.7.3A, and 2.7.3B were revised on March 25, 1998 to instruct the test performers to ensure that all auto start signals are clear and ECCS initiation seal-in logic is reset prior to shutting down the diesel engine.

With completion of these procedure actions WNP-2 is in full compliance with Technical Specification 5.4.1.a, which requires written procedures to be established, implemented, and maintained for those activities outlined in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.