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SUBJECT: Responds to NRC 910212 ltr re violations & deviations in Insp Rept 90-31.Corrective actions:bearing disassembled as attemp to discover cause of oil leak & evaluation to determine feasibility of design change.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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March 14, 1991
G02-91-051

Docket No. 50-397

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
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Washington, D. C. 20555

Gentlemen:

Subject: NUCLEAR PLANT NO. 2, OPERATING LICENSE NO. NPF-21
NRC INSPECTION REPORT 90-31
RESPONSE TO NOTICE OF VIOLATION
RESPONSE TO NOTICE OF DEVIATION

The Washington Public Power Supply System hereby replies to the Notices of Violation and Notice of Deviation contained in your letter dated February 12, 1991. Our reply, pursuant to the provisions of Section 2.201, Title 10, Code of Federal Regulations, consists of this letter and Appendix A (attached).

In Appendix A, the violations are addressed with an explanation of our position regarding validity, corrective action and date of full compliance. In Appendix B, the deviation is addressed with an explanation of our position regarding validity, corrective action and date of full compliance.

Very truly yours,

GD Bouchey

G. D. Bouchey, Director
Licensing & Assurance

JDA/bk
Attachments

cc: JB Martin - NRC RV
NS Reynolds - Winston & Strawn
PL Eng - NRR
DL Williams - BPA/399
NRC Site Inspector - 901A

IE01

APPENDIX A

During an NRC inspection conducted on December 3, 1990 - January 13, 1991, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions", 10 CFR Part 2, Appendix C (1990), the violations are listed below:

A. Criterion XVI of 10 CFR 50, Appendix B, states that "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition."

Criterion V of 10 CFR 50, Appendix B, further states that "Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

Contrary to the above, as of December 11, 1990, sufficient corrective measures had not been implemented in response to the diesel generator bearing failure (a significant condition adverse to quality) which occurred on May 27, 1990. Specifically, although bearing oil leakage was again observed, criteria for verifying acceptable generator bearing oil level had not been established, and an effective program for the monitoring of bearing oil leakage and oil additions had not been implemented.

This is a Severity Level IV violation (Supplement I).

Validity of Violation

The Supply System acknowledges the validity of this violation. The reason for the violation was Less Than Adequate Corrective Action from the previous bearing damage event (described in LER 90-012) in that a trending program was not successfully implemented to identify oil inventory problems. Furthermore, at the time there was also no clear definition of diesel operability as related to bearing oil level.

On December 17, 1990 a Problem Evaluation Request (PER 290-0986) was written which documented that oil had been added to the Diesel Generator north generator bearing three times (beginning on November 1, 1990) which amounted to a total of 762.9 milliliters. Although oil consumption was being tracked, the usage was not visible to either Plant Management or the Plant Technical System Engineer for followup or trending. [To date, 1056.6 milliliters (one quart) of oil has been added, which is approximately 1/16 of the total inventory in the sump.]

Corrective Steps Taken/Results Achieved

As a result of PER 290-0986, the following corrective actions were taken:

1. A re-evaluation was performed to determine the appropriate bearing oil level with regard to Diesel Generator DG-GEN-DG1 operability. It was determined that this level would be 1/8-inch above the low-level mark on the sightglass for a normal standby condition. The evaluation also concluded that adequate lubrication of the bearing occurs down to 3/8-inch below the low-level mark. It was determined that this would be the absolute lowest level which is allowed prior to taking immediate action to declare DG-GEN-DG1 inoperable. Appropriate Plant procedures were revised to include this direction.

2. The Diesel Generator was also removed from service in January, 1991 for further inspection. The coupling guard and stator inspection cover were removed and it was determined that the oil leakage noted was from the bearing reservoir. Further monitoring efforts are continuing as an attempt to locate and identify the source of the leakage. The coupling guard has also since been removed to aid in these efforts until the bearing is disassembled during the upcoming maintenance and refueling outage.

3. Trending of oil consumption is now being performed. The addition (or removal) of oil, including quantity information, is being documented by means of the Repetitive Task Request (RTR) process and is reviewed by the Plant Technical System Engineer. The RTR process is a controlled process and the tasks are reviewed and approved by department managers. This process allows an expedited release of a work document which gives the Maintenance Department the ability to respond quickly to situations such as adding bearing oil to DG-GEN-DG1.

4. The amount of oil consumption was reviewed and the rate of the leakage did not appear to be excessive. Direction was provided pertaining to daily monitoring to ensure that the oil is maintained at an acceptable level. Furthermore, oil addition during standby status and during operation can be accomplished and has been demonstrated.

Corrective Action to be Taken

1. During the upcoming maintenance and refueling outage (beginning April 1991), the bearing will be disassembled as a further attempt to discover the cause of the oil leak.

2. An evaluation is being performed to determine the feasibility of a design change to increase bearing oil reservoir capacity.

Date of Full Compliance

The bearing disassembly and inspection effort will be completed by the end of the 1991 maintenance and refueling outage (June 1991).

Corrective Steps Taken/Results Achieved

1. On January 16, 1991 procedure 7.4.4.1.2, Jet Pump operability was modified to correctly reflect the Technical Specification requirement that both Reactor Recirculation System loops are lined up with the flow control valves in the same position, and the surveillance was successfully re-performed.

2. On February 8, 1991 Licensee Event Report (LER) 91-002 was submitted, pursuant to the requirements of 10CFR50.73(a)(2)(i)(B), because the Jet Pump operability testing was not in literal compliance with the Technical Specifications. As stated in the LER, there was no safety significance associated with this event. The assumption in the design basis Loss-of-Coolant-Accident (LOCA) analysis for Reactor Recirculation System Jet Pump operability is that the flows are matched. As a result, matching Reactor Recirculation System loop flows, instead of matching flow control valve positions, meets the intent of the Specification (in a different way) for verifying that a jet pump is not damaged. Accordingly, the RRC Jet Pumps were operable during the event period.

3. A Technical Specification Change Request was submitted to the NRC to remove the requirement of equalizing flow control valve positions during RRC Jet Pump operability determinations.

4. Changes have been made to the procedural administrative control process since the 1985 time-frame when the changes to the Jet Pump operability procedure were made. Specifically, a procedural verification and validation process has recently been implemented. Verification is the process of confirming and documenting the technical accuracy and written correctness of Plant procedures. Validation is the evaluation performed to determine that Plant procedures provide adequate guidance to the procedure user and to ensure proper operation/maintenance of Plant equipment.

Corrective Action to be Taken

No further corrective action is planned.

Date of Full Compliance

Full compliance was achieved in January 16, 1991 when the Jet Pump operability procedure (PPM 7.4.4.1.2) was modified to correctly reflect the Technical Specification requirement of matching flow control valve positions, and the surveillance was successfully re-performed.

B. Section 4.4.1.2.1 of the WNP-2 Technical Specifications states in part: "Each of the ... required jet pumps shall be demonstrated OPERABLE ... by determining recirculation loop flow, total core flow and diffuser-to-lower plenum differential pressure for each jet pump ... when both recirculation loops are operating at the same flow control valve position."

Contrary to the above, on January 9, 1991, recirculation loop flow, total core flow, and diffuser-to-lower plenum differential pressure were not determined with both recirculation loops operating at the same flow control valve position, in that flow control valve "A" was 88.8% open and flow control valve "B" was 84.6% open.

This is a Severity Level IV violation (Supplement I).

Validity of Violation

The Supply System acknowledges the validity of this violation. The reason for the violation was Less Than Adequate Procedure Preparation/Review to ensure that the procedural method for determining Jet Pump operability was in literal compliance with the Technical Specifications.

Plant Procedure (PPM) 7.4.4.1.2, "Jet Pump Operability," provides instructions for determining the operability of the Reactor Recirculation (RRC) System Jet Pumps. The original version (Revision 0) of the procedure was issued in 1983 and contained the Technical Specification - required direction to line up both recirculation loops such that they have the same flow control valve position. In 1985, Revision 1 to the procedure was issued and the direction was changed to adjust drive flows such that both loops are approximately equal in flow.

The reason this change was made is because experience had shown that both Reactor Recirculation System pumps and valves have unique operating characteristics that, in combination with matched flow control valve positions, could potentially cause a noncompliance with Technical Specification 3.4.1.3. With flow control valve positions at 80 - 85%, the potential could exist for a flow mismatch to occur. The design of the RRC System at WNP-2 is such that the two pumps (RRC-P-1A and RRC-P-1B) run at constant speed, driven by either 15 Hz or 60 Hz power supplies. The only way to vary flow in the recirculation loops is by manipulating the flow control valves.

However, although the change to the procedure was technically prudent and the correct action to take for meeting the intent of the Jet Pump operability requirements, a Technical Specification Change Request should have been submitted and approved prior to implementation of the procedure change to provide for literal compliance with the Technical Specifications.

APPENDIX B

During an NRC inspection conducted on December 3, 1990 - January 13, 1991 a deviation from a commitment to the NRC was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions", 10 CFR Part 2, Appendix C (1990), the deviation is listed below:

NRC Inspection Report No. 50-397/89-17, Paragraph 12, for the period June 4 - July 9, 1989, states in part: "The Assistant Plant Manager committed to assess the vibration problem in the HPCS system and correct it by the end of the 1990 refueling outage."

Contrary to the above, on October 23, 1990, after completion of the 1990 refueling outage, a leaking crack in the drain line to high pressure core spray (HPCS) valve HPCS-V-36 was identified. This crack was determined by the licensee to be the result of vibration-induced fatigue. No action had been taken on the HPCS system to reduce the vibration.

This is a Deviation.

Validity of Deviation

The Supply System acknowledges the validity of this deviation in that a verbal commitment was not met pertaining to reducing the vibration problems in the High Pressure Core Spray (HPCS) System by the end of the 1990 refueling outage. However, it should be noted that several actions were being taken with regard to solving these problems. One reason for the deviation was, when reviewed, the design changes required to reduce vibration within the HPCS System were more involved than originally anticipated. However, the increased time required to implement the design changes should have been communicated to the NRC.

Another reason for the deviation was that the commitment was not being tracked on the Plant Tracking Log (PTL) by the Plant Technical Compliance Group. This commitment was not on the PTL because it was not identified in the Inspection Report by a specific item (e.g., open item, followup item, unresolved item, violation, etc.).

Corrective Steps Taken/Results Achieved

1. On June 27, 1989 Plant Engineers initiated Technical Evaluation Request (TER) 89-0218-0 to address the vibration problem caused by HPCS-V-23. On June 22, 1990 this TER was elevated to Plant Modification Record (PMR) 89-0218 to address the problem of vibration in the HPCS System. Included in this PMR is a major redesign of the full flow test line to HPCS-V-23. The planned modification is to change out Restricting Orifice HPCS-RO-4 to reduce the pressure drop across the orifice, and to add a second restricting orifice in the wetwell. Although this design change was scheduled to be implemented during the 1990 maintenance and refueling outage, the current schedule is to have the design issued by the end of this fiscal year (June 1991).

2. Improvements have since been made in the manner in which those NRC inspection report issues, which are not identified by a specific item number (e.g. open item, unresolved item, etc.), are tracked. Plant Compliance personnel currently review those additional issues/concerns and contact the responsible personnel for either a status or other followup information. A memo which documents this followup information is then placed in the inspection report file for review by NRC personnel during their closure of the report. If this process had been in place when the commitment was made, the NRC would have been formally notified of the reasons for the delay and a revised completion date for correcting the vibration problems in the HPCS System would have been provided.

Corrective Action to be Taken

1. The redesign of the full flow test line to HPCS-V-23 will be implemented.

2. An evaluation will be performed to determine if additional improvements can be made pertaining to tracking of NRC commitments.

3. As stated in LER 90-028 (crack in drain line to HPCS-V-36), further evaluations will be conducted to determine if other small bore pipe configurations should be modified, and if other design modifications need to be made to reduce the vibration or loading on this small bore piping. When appropriate, nondestructive examination will be performed until these evaluations and modifications have been completed.

4. A systematic method of implementing design improvements for piping failures was initiated in July of 1987. Extensive efforts have been ongoing to preclude repetitive failures as well as any new failures whenever possible. The focus will continue to be eliminating the cause of theses failures through improved design configuration and minimizing the source of cyclic loading.

Date of Full Compliance

The current schedule for reducing the vibration problems in the HPCS System is to issue the design change of the full flow test line to HPCS-V-23 by the end of this fiscal year (June 30, 1991). Following issuance of the design change, an evaluation will be performed to determine when the changes can be implemented based on design schedule and scope.