

CATEGORY 1

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 WEBRING,R.L. Washington Public Power Supply System
 RECIP.NAME RECIPIENT AFFILIATION
 Records Management Branch (Document Control Desk)

SUBJECT: Responds to NRC 981106 ltr re violations noted in insp rept
 50-397/98-15. Corrective actions: implemented ACs to ensure
 that adequate supply of water is maintained in each storage
 tank to provide vol suction source for HPCS & RCIC pumps.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • Richland, Washington 99352-0968

December 7, 1998
GO2-98-205

Docket No. 50-397

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

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21
NRC INSPECTION REPORT 98-15,
RESPONSE TO NOTICE OF VIOLATION**

Reference: Letter dated November 6, 1998, TF Stetka (NRC) to JV Parrish (Supply System),
"NRC Inspection Report 50-397/98-15 and Notice of Violation"

The Supply System's response to the referenced Notice of Violation, pursuant to the provisions of Section 2.201, Title 10, Code of Federal Regulations, is enclosed. As directed by the Staff, the Supply System is responding to Violations A and B of Inspection Report 98-15. It is not necessary to respond to Violations C, D, and E as the inspection report reflects our corrective actions and positions.

In the cover letter to the inspection report, an issue was noted relative to our progress pertaining to the confirmatory order which modified the WNP-2 operating license to reflect the schedule for implementing Thermo-Lag 330-1 fire barrier corrective actions. The order had confirmed a commitment to complete implementation of Thermo-Lag 330-1 fire barrier corrective actions on a schedule commensurate with previous Supply System correspondence.

The issue was an acknowledgment during the inspection that the Thermo-Lag reduction effort was not currently on schedule and we were considering means to assure that the order requirements were met. It is agreed that certain individual elements of the timeline were not on schedule. However, the overall completion effort was indeed on schedule to ensure that the completion dates for resolving the Thermo-Lag issues would be met as stipulated by the confirmatory order.

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Although we are currently on track to complete the overall project as originally scheduled, we are currently in the process of submitting a request to NRR that the confirmatory order be changed to reflect that final implementation of Thermo-Lag 330-1 fire barrier corrective actions at WNP-2 will be completed during Fall 1999 instead of Spring 1999. The reason for the request is due to the planned transition to a 24-month fuel cycle during 1999. The Spring 1999 date was based upon a previously-established, 12-month refueling outage schedule.

The transition to the 24-month fuel cycle required rescheduling of the R-14 Maintenance and Refueling Outage from Spring 1999 to Fall 1999. The last remaining Thermo-Lag modifications will be implemented during the R-14 outage, but in the fall time-frame. However, this will have no impact on the final completion schedule because the overall Thermo-Lag resolution effort will be completed by the required due date of December 1999.

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

Respectfully,



RL Webring
Vice President, Operations Support/PIO
Mail Drop PE08

Attachment

cc: EW Merschoff - NRC RIV
GA Pick - NRC RIV
C Poslusny, Jr. - NRR
NRC Sr. Resident Inspector - 927N
DL Williams - BPA/1399
PD Robinson - Winston & Strawn



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VIOLATION A

RESTATEMENT OF VIOLATION

10 CFR Part 50, Appendix B, Criterion III, "Design Control;" states, in part, "Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in [10 CFR Part] 50.2 and as specified in the license application . . . are correctly translated into specifications, drawings, procedures, and instructions."

Contrary to the above:

1. As of January 15, 1996, the design basis to maintain a reserve volume of 135,000 gallons in the condensate storage tank, as addressed in Final Safety Analysis Report, Sections 6.3.2.2.1 and 5.4.6.2.2.1.f, and Technical Specification Bases, Section B 3.5.2, "ECCS - Shutdown," was not correctly translated into the plant design.
2. As of July 29, 1998, the license basis commitment to derive the technical specification allowable values from the analytic limit corrected for process and all instrument uncertainties, except drift and calibration, specified in Technical Specification Bases, Section B 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation," was not correctly translated into the technical specifications. Specifically, the derivation of the allowable value for Reactor Vessel Water Level Low Low Low - Level 1, in Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation," Items 1.a, 2.a, 4.a, and 5.a did not include a correction for post-accident harsh environment effects.

This is a Severity Level IV violation (Supplement 1) (50-397/9815-01).

RESPONSE TO VIOLATION A-1

The Supply System accepts this violation.

REASON FOR VIOLATION

Condensate Storage & Transfer (CST) System setpoint calculation 5.52.70 establishes the condensate storage tank levels that will assure 135,000 gallons are available to the High Pressure Core Spray (HPCS) and Reactor Core Isolation Cooling (RCIC) Systems prior to the swap-over point (the point that the suction source for HPCS and RCIC Systems is shifted from the condensate storage tank to the suppression pool). Instrument setpoint calculation E/I-02-91-1011 demonstrates that the level switch function of protecting the HPCS pump from vortexing and loss of net-positive-suction-head (NPSH) is assured under all conditions. However, for some flow conditions addressed by calculation E/I-02-91-1011 the actual CST level at the point of swap-over is higher than the assumed swap-over point in calculation 5.52.070. This is conservative for pump



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protection but would mean that less than 135,000 gallons would be available and supplied to the reactor pressure vessel prior to swap-over. The results of instrument setpoint calculation E/I-02-91-1011 for HPCS System level switches LS-1A & 1B were not incorporated into calculation 5.52.070. A proper review of the results of setpoint calculation E/I-02-91-1011 might have detected the impact to calculation 5.52.070, but calculation E/I-02-91-1011 was not identified as an input to calculation 5.52.070.

An additional calculation (Calculation Modification Record 95-0650), which also modifies calculation 5.52.070, had also been performed when implementing the Improved Technical Specification (ITS) program. This calculation provided a basis that the level of 13.25 ft. in a single condensate storage tank or 7.6 ft. in both storage tanks would meet the technical specification requirement of 135,000 gallons. Instrument level switch uncertainties were also not used to support the conclusions of this calculation. A proper cross-disciplinary review of this calculation by other electrical or instrumentation and control groups within the Supply System may have discovered this error.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

The Supply System has implemented administrative controls to ensure that an adequate supply of water is maintained in each condensate storage tank to provide a design basis volume suction source for the HPCS and RCIC pumps.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Calculations E/I-02-91-1011 and 5.52.070 will be revised as necessary to ensure level switch setpoint information and instrument level switch uncertainties are incorporated to ensure observed condensate storage tank levels reflect design basis values. Technical specifications will also be changed if necessary, based on the calculation revisions, to ensure specified condensate storage tank levels reflect design basis values.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on August 17, 1998, when administrative controls were implemented to ensure that an adequate supply of water is maintained in each condensate storage tank to provide a design basis volume suction source for the HPCS and RCIC pumps.

RESPONSE TO VIOLATION A-2

The Supply System accepts this violation.

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REASON FOR VIOLATION

When setpoint calculation E/I-02-92-1051 was prepared to derive the technical specification allowable value for the Reactor Vessel Water Level Low Low Low - Level 1 setpoint, it was incorrectly assumed that the switches involved would not be required to operate after initial actuation in a design basis accident harsh environment. This assumption resulted in the technical specification allowable value for Reactor Vessel Water Level Low Low Low - Level 1 of "minus" 148 inches being non-conservative with respect to the re-calculated value of "minus" 142.3 inches when harsh environmental conditions are assumed. However, the past non-conservative setting did not impact the operability of any safety systems, because past maximum plant settings for the instrument did not exceed the new calculated allowable value of "minus" 142.3 inches.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Setpoint calculation E/I-02-92-1051 was revised to include harsh environmental effects as specified in our present design basis.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Unless it is later determined that the switches associated with the Reactor Vessel Water Level Low Low Low - Level 1 setpoint are not required to operate in a harsh environment, a technical specification change will be processed to change the allowable value for the setpoint so that harsh environmental effects are taken into account.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on July 30, 1998, when setpoint calculation E/I-02-92-1051 was revised to include harsh environmental effects.

VIOLATION B

RESTATEMENT OF VIOLATION

10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions."

Contrary to the above, the following activities affecting quality were either not prescribed by documented instructions or were not accomplished in accordance with instructions:

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1. As of July 29, 1998, control panel marking was not always accomplished in accordance with Human Factors Engineering Standard (HFES) -10, "Demarcation Standard," Revision 0, Section 3.1, which required the use of 0.25-inch wide red demarcation lines to identify and enhance the visibility of Category 1 post-accident monitoring instruments. In addition, marking requirements were not prescribed in documented instructions for Category 2 post-monitoring instruments.
2. Design verifications were not always accomplished as prescribed in Step 3.1.14 of Engineering Instruction EI 2.15, "Preparation, Verification and Approval of Calculations," effective July 1 through August 9, 1991, or as prescribed in Step 4.1.15 of Engineering Department Procedure EDP 2.15, "Preparation, Verification and Approval of Calculations," Revision 0, effective August 10, 1991, through March 1996. Both procedures state that the verifier performs a complete check of the calculation to ensure that it is technically correct, complete and accurate; however, the verifiers did not ensure that three site short-circuit calculations were technically correct in that they included non-conservative temperature assumptions.
3. Calculation modification record reviews were not always accomplished as required by Procedure EDP 2.15, "Preparation, Verification and Approval of Calculations," Revision 3. Specifically, Step 4.5.5 stated, "The CMR [calculation modification record] shall be prepared against the latest revision of the calculation and all outstanding CMRs against the calculation shall be considered. The pertinent outstanding CMRs, which could affect the results/conclusions, shall be identified and accounted for in the CMR." However, as of July 29, 1998, the loads in outstanding Calculation Modification Records 92-0453, 92-0489, and 97-0173 related to Calculation E11-02-90-01 were not identified or accounted for in the calculation or in the informal working file that was routinely used by engineering to consider outstanding calculation modification records related to electrical load changes.

This is a Severity Level IV violation (Supplement 1) (50-397/9815-02).

RESPONSE TO VIOLATION B-1

The Supply System accepts this violation.

REASON FOR VIOLATION

The Supply System commitment to Regulatory Guide (RG) 1.97, Rev. 2 requires that Category 1 and 2, Type A, B, and C instruments be identified on control panels so that operators may easily distinguish them from other instrumentation. To accomplish this, red demarcation lines were to be placed around this instrumentation. Contrary to the commitment, not all required instruments in the control room, per FSAR Table 7.5-1, are identified with surrounding red demarcation lines. Controls to ensure that demarcation lines for existing RG 1.97 instrumentation were implemented and maintained, where appropriate, were not properly specified in engineering and operating procedures. Human Factors Engineering Standard (HFES)-10, prepared in 1988, required red lines



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of demarcation on RG 1.97 Category 1 instrumentation only. Existing demarcation lines appear to be from original construction. The requirement to specifically distinguish RG 1.97 instrumentation with red demarcation lines may have been compromised by the results of control room design reviews which also required demarcation lines to be placed around instrumentation necessary for emergency operating procedures; not necessarily the same set of instrumentation as that required by RG 1.97. An opportunity was missed to identify this discrepancy during the control room design review conducted in 1984-85. The acceptance criteria used for the design review did not mention RG 1.97 requirements.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Until all necessary instrumentation in the control room has been labeled properly, an Operating Instruction has been issued that provides guidance for control room personnel to determine which instruments should be used during post accident conditions.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

Labels will be installed for instrumentation in the control room to ensure RG 1.97, Category 1 and 2, Type A, B, and C instruments are properly identified. Furthermore, engineering standards and/or instructions (including HFES-10) will be revised as necessary to control the labeling of RG 1.97 Cat. 1 and 2, Type A, B, and C instrumentation.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance will be achieved by June 30, 1999, when labels will be installed for instrumentation in the control room to ensure RG 1.97, Category 1 and 2, Type A, B, and C instruments are properly identified.

RESPONSE TO VIOLATION B-2

The Supply System accepts this violation.

REASON FOR VIOLATION

During preparation of the short circuit calculations identified in the violation, the resistance data for the cable feeders was obtained from existing electrical calculations. The existing calculations, however, determined cable resistances based on an assumed conductor temperature of 75° C in the alternating current (AC) electrical systems, and based on an assumed conductor temperature of 50° C in the direct current (DC) electrical systems. Hence, the use of this cable resistance data in the short circuit calculations was non-conservative because cable temperatures can actually be lower. Also, verification of the short circuit calculations did not identify the non-conservative use of cable resistance data.

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CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

A review of the present short circuit calculations that assumed non-conservative conductor temperatures determined that the identified errors are not significant and do not affect the operability of associated systems, structures or components.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

The Supply System will revise the short circuit current calculations using cable resistance values of an appropriate conservative conductor temperature.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance will be achieved by September 15, 1999, when the short circuit current calculations using cable resistance values of an appropriate conservative conductor temperature will be revised. A more aggressive schedule to accomplish the calculation revisions is not warranted due to the non-conservative temperature assumptions having a negligible impact on calculated short circuit currents.

RESPONSE TO VIOLATION B-3

The Supply System accepts this violation.

REASON FOR VIOLATION

An electronic copy of calculation E/I-02-90-01 is maintained as the "working copy" of the calculation. It was intended that the "working copy" remain updated to include the approved CMRs which were issued for non-conservative design changes (design changes for load increases and/or load additions). However, the "working copy" did not include a list of all issued CMRs (for both conservative and non-conservative design changes) which were outstanding against the calculation, making it difficult for the preparer and verifier of CMRs to easily identify all applicable outstanding CMRs. In addition, a formal process did not exist to maintain and update the "working copy." Therefore, the three CMRs identified in the violation were not accounted for in the "working copy" of calculation E/I-02-90-01.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

The three CMRs mentioned in the violation have been incorporated into the "working copy" of calculation E/I-02-90-01. The resulting total ampere loads and terminal voltages met the acceptance criteria specified in calculation E/I-02-90-01. The "working copy" has also been updated to include a list of all issued outstanding CMRs.

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CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

A formal engineering procedure will be prepared to maintain and control calculation "working copies."

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on August 7, 1998, when the three CMRs mentioned in the violation were incorporated into the "working copy" of calculation E/I-02-90-01.

