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 PARRISH, J.V. Washington Public Power Supply System
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SUBJECT: Responds to violations noted in Insp Rept 50-397/94-19.
 Corrective actions: night orders issued requiring that health
 physics technicians question workers wearing protective
 clothing to ensure wearing required dosimetry.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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August 29, 1994
G02-94-203

Docket No. 50-397

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Mail Station P1-37
Washington, D. C. 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NO. NPF-21
NRC INSPECTION REPORT 94-19
RESPONSE TO NOTICE OF VIOLATION**

Reference: Letter dated July 29, 1994, A. B. Beach (NRC) to J. V. Parrish (Supply System),
"NRC Inspection Report 50-397/94-19 (Notice of Violation)"

The Washington Public Power Supply System hereby replies to the referenced Notice of Violation. Our reply, pursuant to the provisions of Section 2.201, Title 10, Code of Federal Regulations, consists of this letter and Appendix A (attached).

The Supply System is addressing procedural non-compliance as a significant problem at WNP-2. There have been no instances in the last 12 months of procedural non-compliance resulting from conscious choices by personnel made during performance of an activity, although instances resulting from human error have not been eliminated. The Supply System continues to strive for improved performance in this area.

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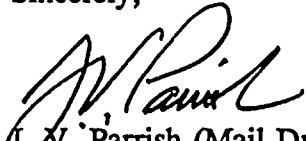
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NRC INSPECTION REPORT 94-19
RESPONSE TO NOTICE OF VIOLATION

Should you have any questions or desire additional information regarding this matter, please call me or D. A. Swank at (509) 377-4563.

Sincerely,



J. V. Parrish (Mail Drop 1023)
Assistant Managing Director, Operations

CJF/jp

Attachments

cc: LJ Callan - NRC RIV
KE Perkins, Jr. - NRC RIV, Walnut Creek Field Office
NS Reynolds - Winston & Strawn
JW Clifford - NRC
DL Williams - BPA/399
NRC Sr. Resident Inspector - 927N

Appendix A

VIOLATION A

During an NRC inspection conducted on May 15 through June 25, 1994, 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, the violations are listed below:

- A. 10 CFR 20.1502(a)(3) requires licensees to monitor individuals for exposure to radiation if the individual enters a high radiation area.

Contrary to the above, on May 23, 1994, an individual entered a high radiation area and worked for approximately 15 minutes without being monitored for exposure to radiation.

This is a Severity Level IV violation (Supplement IV) (50-397/9419-04).

RESPONSE TO VIOLATION A

The Supply System accepts this violation. This event had been identified and addressed through the WNP-2 Corrective Action Program.

REASON FOR THE VIOLATION

The violation was the result of inadequate self-checking by an experienced trained radiation worker. The individual understood it was his personal responsibility to wear dosimetry as required by the Radiation Work Permit for entry into the high radiation area. A contributing factor was the practice of wearing dosimetry under protective clothing, to prevent dosimeter contamination, hindered health-physics personnel from easily verifying that the worker was wearing prescribed dosimetry.

It should be noted that 25,581 entries were made during the 1994 refueling outage into the containment drywell and refueling floor by personnel wearing protective clothing; this event is the only identified failure to wear required dosimetry during an entry.

IMMEDIATE CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

The dose incurred by the worker while unmonitored was estimated based on: 1) a co-workers's recorded exposure accrued in the same work area for similar stay times; and 2) verification of dose rates in the area by health physics personnel. The exposure was determined to be within 10CFR20 and Supply System administrative limits.

Night orders were issued requiring that health-physics technicians question workers wearing protective clothing to ensure they are wearing the required dosimetry.

CORRECTIVE ACTION TO BE TAKEN TO AVOID FURTHER VIOLATIONS

Improvements to protective clothing to allow easier verification of dosimetry use are being investigated. The results will be available by September 20, 1994. If protective clothing improvements prove infeasible, other methods of mitigation of the problem will be explored, so that the use of night orders will not be relied on indefinitely.

DATE OF FULL COMPLIANCE

The Supply System has been in full compliance since 0210 hours on May 23, 1994 when the individual not having all required dosimetry was removed from the radiation zone in which he was working.

VIOLATION B

B. Technical Specification 6.8.1 states, in part, "Written procedures shall be established, implemented, and maintained covering the activities referenced below:

c. Refueling operation.

1. WNP-2 Plant Procedures Manual (PPM) 6.3.2, Revision 8, "Fuel Shuffling and/or Offloading and Reloading," paragraph 6.1.3, states to "Verify the identity of each fuel assembly by orientation and location on the Nuclear Components Transfer List (NCTL) when it is loaded. The Refueling Supervisor or designee shall initial the appropriate line of the NCTL as each step is completed. Verification of each step will be documented by the verifier's/designee's initials."

Contrary to the above, on June 10, 1994, during Step 1338 of the refueling sequence, Bundle UD4098 was placed in the core 90 degrees from the orientation prescribed in the NCTL. The refueling senior reactor operator and the bridge operator each initialed that they verified that the bundle was placed in the core properly (397/9419-05).

2. WNP-2 PPM 10.3.6, Revision 9, "Reactor Vessel Steam Dryer and Moisture Separator Removal and Replacement," paragraphs 6.2.3 and 6.24, states to "Remove the wrench and ensure the locator tab at the top of the bolt is parallel to a vessel radius," and "Obtain second person verification of 36 shroud head bolts are aligned for moisture separator removal . . ." respectively.

Contrary to the above, on June 25, 1994, PPM 10.3.6 was not properly implemented during the removal of the reactor moisture separator, when two individuals initialled that the shroud head bolts were aligned for moisture separator removal even though one of the bolts was not properly aligned for removal (397/9419-02).

3. WNP-2 PPM 10.4.12, Revision 3, "Crane and Hoist Program Control," paragraph 7.4.2.e, states that "The written instruction should contain each piece of equipment and accessory to be used by type, rated capacity. Rigging sketches, load paths, limitations and individual sign off steps should be included in the applicable written instruction."

Contrary to the above, on June 25, 1994, the written instruction for removing the reactor moisture separator, WNP-2 PPM, 10.3.6, "Reactor Vessel Steam Dryer and Moisture Separator Removal and Replacement," Revision 9, did [not] contain each piece of equipment and accessory to be used by type, rated capacity, and limitations (397/9419-03).

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

RESPONSE TO EXAMPLES 2 AND 3 OF VIOLATION B

The Supply System accepts these two examples of the violation. This event had been identified and addressed through the WNP-2 Corrective Action Program.

REASON FOR THE VIOLATION

A procedure entitled "Reactor Vessel Steam Dryer and Moisture Separator Removal Replacement" requires independent verification that all 36 retaining bolts have been unlatched as a prerequisite to removal of the moisture separator shroud. An error in verification was made, due to impaired visual conditions caused by water movement in the reactor vessel.

The same procedure included only the weight of the moisture separator but not the additional weight of the strong-back and other lifting equipment as required by another procedure entitled "Crane and Hoist Program Control".

IMMEDIATE CORRECTIVE ACTION TAKEN/RESULTS ACHIEVED

The incorrectly oriented retaining bolt was unlatched under the procedure entitled "Reactor Vessel Steam Dryer and Moisture Separator Removal Replacement." This permitted the Moisture Separator to be removed as required.

CORRECTIVE ACTION TO BE TAKEN TO AVOID FURTHER VIOLATIONS

The procedure entitled "Reactor Vessel Steam Dryer and Moisture Separator Removal Replacement" will be revised by December 31, 1994 to require use of underwater viewing equipment to verify unlatching of the 36 retaining bolts for the moisture separator shroud, and to include the total lift 'package' weight consisting of the moisture separator and the necessary lifting equipment. Use of this procedure will not be permitted until this revision is made.

DATE OF FULL COMPLIANCE

The Supply System has been in full compliance since June 26, 1994 when the last retaining bolt was unlatched to permit removal of the moisture separator.

RESPONSE TO EXAMPLE 1 OF VIOLATION B

Refueling is performed at WNP-2 under an integrated process involving use of three separate but interrelated procedures. The integrated process assures that all fuel assemblies are located and oriented in conformance with the current core reload analysis prior to reactor criticality. A procedure entitled "Nuclear Component Transfer List Preparation" is used to stipulate the required location and orientation of fuel in the core, consistent with the core reload analysis. That direction is physically implemented by a procedure entitled "Fuel Shuffling and/or Offloading and Reloading," which requires completion of another procedure entitled "Full Core Verification" to systematically verify and document that all fuel assemblies have been positioned and oriented correctly by the work done under the "Fuel Shuffling...." procedure. Since each manipulation has some probability of error, all three procedures include redundant steps for verification and cross-checking to assure the as-loaded core configuration conforms with the approved core design at the completion of the process. None of the three procedures stand alone, and all are required to define the integrated refueling process. Consequently, the proposed violation takes issue with an error made during in-process work. Two orientation errors and zero location errors occurred during the refueling performed in June 1994 which involved more than 1479 manipulations of fuel assemblies. Since both errors were detected during implementation of the integrated refueling process, the overall process is reliable, in part due to performance of the "Full Core Verification" procedure, as was intended by the design of the refueling process.

Based on the above, WNP-2 does not agree that the cited event involves a violation of Technical Specification 6.8.1. The proposed violation cites an error made during in-process work, although the error was detected and corrected by the overall refueling process designed to minimize, detect, and correct errors. The error had no immediate safety significance because: (1) the reactor was not operated at power in that condition, and (2) misorientation of a fuel bundle (in the correct location) does not affect shutdown margin.

However, WNP-2 is very concerned about these events because the correct deployment of nuclear fuel in the core is of the highest importance. The errors, although detected and corrected, are not considered acceptable because they test the barriers established to prevent incorrect fuel loadings. The overall process is being reviewed and input is being solicited from other nuclear utilities as regards to refueling practices and procedures. The results will be incorporated into our process and procedures by February 1, 1995.

VIOLATION C

- C. 10 CFR Part 50, Appendix B, Criterion XVI states, in part, "Measures shall be established to ensure 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 the cause of the condition is determined and corrective action taken to preclude repetition."

Contrary to the above, on June 23, 1994, after the cord of an underwater inspection light had been severed and the light dropped into the reactor vessel, the licensee did not take adequate measures to assure that the cause of the condition was determined nor provide corrective action to preclude repetition. As a result of this failure, a second underwater inspection light cord was severed and the light dropped into the reactor vessel about 67 minutes later.

This is a Severity Level IV violation (Supplement I) (397/9419-01).

RESPONSE TO PROPOSED VIOLATION C

The Supply System accepts this violation.

REASON FOR THE VIOLATION

The violation occurred because, contrary to their training, personnel failed to follow procedures requiring self-checking during implementation of work activities. A contributing factor was a weakness in pre-job briefing and job turnover, since the crew that lost the second light had not been apprised of details attending loss of the first light.

IMMEDIATE CORRECTIVE ACTION TAKEN/RESULTS ACHIEVED

Personnel involved in work on the refueling floor were counseled to immediately communicate unexpected conditions to the Refueling Floor Manager or Coordinator.



A plant-wide "timeout" session was held to reinforce management expectations regarding procedural requirements for self-checking and that an evolution be stopped for reassessment should unexpected conditions arise.

A formal recovery plan was developed and implemented, resulting in successful recovery of both lights.

Additional management emphasis was given to assure that a complete status review should be included in pre-job briefing and crew turnover to assure that personnel continuing work are fully aware of completed tasks, existing conditions, and the next tasks to be accomplished.

CORRECTIVE ACTION TO BE TAKEN TO PREVENT RECURRENCE

Procedures used to guide reactor vessel work will be strengthened as necessary by December 31, 1994 to ensure that requirements for identification, handling, and controlling of tools and equipment used in and about the reactor vessel are clearly and completely defined. "Lessons learned" about personnel performing corrective actions without a plan that will ensure success, weaknesses in pre-job briefings, job turnover between new crews, and self-checking during the 1994 outage will be incorporated into a training course to be used to train workers prior to the 1995 outage to minimize the potential for recurrence.

DATE OF FULL COMPLIANCE

The Supply System has been in full compliance since June 27, 1994 when the second light was recovered using a formal recovery plan.