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SUBJECT: Responds to NRC 910920 ltr re violations noted in Insp Rept  
 50-397/91-31. Corrective actions: health physics dept  
 initiated discussion re proper use of alarming dosimeters &  
 procedure re erratic operation of Model 415 revised.

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November 15, 1991

Docket No. 50-397  
G02-91-210

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, D. C. 20555

Gentlemen:

Subject: NUCLEAR PLANT NO. 2, OPERATING LICENSE NO. NPF-21  
NRC INSPECTION REPORT 91-31  
RESPONSE TO NOTICE OF VIOLATIONS

The Washington Public Power Supply System hereby replies to the Notice of Violations contained in your letter dated September 20, 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.

The Supply System recognizes that continued improvement in the area of Health Physics Program implementation remains an issue for WNP-2. Over the last year organizational changes, program enhancements and performance standards have been established to strengthen our program. Performance indicators such as man-rem exposure, skin and clothing contaminations, ROR personally preventable errors and radwaste volume all show positive improvements. Ownership of our Health Physics Program by other Departments is also on a positive trend. Our Radwaste Program execution and the many NRC violations clearly demonstrate that significant effort is still needed. The Supply System is committed to addressing these and other program concerns. We expect this topic to be covered at our upcoming NRC/Supply System Management meeting.

Several concerns were identified in the body of the Inspection Report. They consisted of a perceived failure to implement long-term corrective actions following the exposure incident because the root cause analysis was not yet complete, an appearance that the Radiation Protection (RP) Program was stagnating, a lack of an effective Health Physics (HP) self-assessment program, an insufficient number of QA activities that involve performance based type reviews of RP activities, and a lack of a comprehensive review of the RP program since startup of WNP-2. The following discussion addresses these issues.

Implementation of short and long term corrective actions are frequently implemented via the Problem Evaluation Request (PER) process before a Root Cause Analysis (RCA) is completed. Corrective actions were identified on April 25, 1991 in an internal memorandum in response to a PER corrective action to prevent recurrence of the exposure incident. These initial actions were verified appropriate through the final root cause process.

The Supply System routinely tracks Radiation Protection Program indicators to objectively evaluate performance. These data were provided to, and discussed with, NRC Region V personnel during a recent inspection at the WNP-2 site. It is believed that these data, along with other significant improvements currently in progress, do not support a conclusion that the RP program is currently stagnating. We would welcome an opportunity to discuss this issue further.

The Supply System recognizes the value of effective self-assessment within program components. The Health Physics/Chemistry Department is currently evaluating appropriate design and implementation of the self-assessment process in both the Health Physics and Chemistry components of the Department.

With regard to the seemingly insufficient number of QA activities that involve performance based type reviews of RP activities, and the apparent lack of a comprehensive review of the RP program since startup of WNP-2, the Supply System believes that our radiological protection oversight function has been significantly strengthened over the past 18 months. The Plant QA organization now includes a degreed Radiological Protection professional, with ten years technician experience, whose main responsibility is RP Program and performance monitoring. In addition, we have supplemented our audits by including RP experienced reviewers from other Region V utilities. RP practices have also been monitored during Outage Modification Inspections performed by our Technical Assessment group. In addition to these Supply System overviews, two extensive, independent evaluations of our radwaste program were contracted to an outside company. Response to these oversight functions has led to improvements in our RP practices.

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NRC INSPECTION REPORT 91-31  
RESPONSE TO NOTICE OF VIOLATION

The Licensing and Assurance (L&A) Department's overall assessment of the Radiological Protection program and its effectiveness is addressed on an annual basis in Section III of the L&A Annual Report. This report provides Supply System Management with a summary message on the past year's RP performance based on operational experience, performance indicators, and internal and external oversight findings. The Station and L&A management would welcome the opportunity to review our present RP oversight activities with NRC staff members. We believe such an exchange would allay NRC concerns and lead to an even stronger RP program.

Very truly yours,



G. D. Bouchey, Director  
Licensing & Assurance

REF/bk  
Attachments

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

## APPENDIX A

During an NRC inspection conducted September 2 - 6, 1991, two violations of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions", 10 CFR Part 2, Appendix C (1991), the violations are listed below:

- A. 10 CFR 19.12 requires, in part, that all individuals working in a restricted area be instructed in the precautions and procedures to minimize exposure to radioactive materials, in the purpose and functions of protective devices employed, and in the applicable provisions of the Commission's regulations and licenses.

Contrary to the above, on April 17, 1991, the individual providing radiation safety oversight to workers engaged in the cleanup of a highly radioactive spill, had not been instructed in the extent of radiation hazards present and the procedures and precautions necessary to limit his dose and that of the workers. In part, as a result, three workers received unplanned whole body doses in excess of the licensee's administrative daily exposure limit of 300 millirem (mrem).

This is a Severity Level IV violation (Supplement IV)

### Validity of Violation

The Supply System acknowledges the validity of this violation. The root cause for the violation and administrative overexposure of Plant personnel was that the Job Instructions were incomplete to ensure specific job assignments would not be exchanged between the individuals involved in the resin spill cleanup activities.

On April 13, 1991, a resin/water mix spilled onto the Radwaste Building 437 foot elevation floor. Cleanup of the spill was initiated the same day and continued through April 18, 1991. At 1600 hours on April 17, 1991, the cleanup effort was suspended to allow for HP shift turnover. The turnover briefing was attended by the dayshift HP technicians, the HP Planning Supervisor, an ALARA representative, the HP Lead Technician (HPLT), and a swingshift HP technician (Technician #1). The laborers assigned to the swingshift activities had performed the dayshift cleanup activities and had attended a prejob briefing at 0630 hours the same day. The primary cleanup efforts would be centered around the Waste Collector tank at the north east corner of the 437 foot elevation of the Radwaste Building. Entry into the Sludge Separator and Reactor Water Cleanup (RWCU) Separator tank rooms was communicated to Technician #1 as contingent upon completion of the primary task, dose rate and available dose. The briefing included discussion of the HP survey and evaluation requirements prior to entry and dose rate limits for job suspension. Following the turnover briefing, a second HP technician (Technician #2) was assigned to accompany Technician #1 to assist in job coverage from outside the contaminated area. Technician #2 was not present at the HP turnover briefing. Due to relative job skills and level of performance, HP Supervision had intended Technician #1 provide the coverage inside of the contaminated area. Therefore, Technician #2 received a prejob briefing from the HPLT regarding task requirements and coverage outside of the contaminated areas, but did not receive a prejob briefing to provide coverage inside the tank rooms. Technician #1 was not aware of the instructions given to Technician #2.

Enroute to the job site, Technicians #1 and #2 decided between themselves to exchange tasks without informing HP Supervision. Unless specified otherwise, this is allowed by supervision when HP technicians have equal qualifications and have received the appropriate prejob briefings.

A contributing cause to the violation and the administrative overexposure of the three laborers was that Work Practices were Less Than Adequate in that the dose rate limits for entering the tank rooms were not documented in the Radiation Work Permit (RWP). Had the limits been documented, Technician #2 may have recognized the dose rate in the general area exceeded the pre-established limits and suspended the job, precluding entry into the tank room.

A second contributing cause to administrative overexposure of the three laborers was Work Practices were Less Than Adequate because of inappropriate placement of the alarming type dosimeter. In an effort to minimize the possibility of contamination of the dosimeters, HP directed the laborers to place the dosimeters under their protective clothing (cloth and plastic suits), reducing the audibility of the alarm and removing the ability to periodically view the dosimeter readout without increasing the probability of self contamination. The RWCU tank room where laborers were working during the event was in a high noise area. Seemingly erratic operation of the alarming dosimeter, Xetec Model 415, was observed, which was later determined to be normal operation in that the alarm will silence when the measured dose exceeds the next higher alarm setpoint or twice the dose as the previous setting. Also, a product bulletin was found during the event review on this type of dosimeter that indicates erratic operation can occur in high humidity environments. As a result of the high noise and improper placement of the dosimeter, the laborers did not immediately recognize when each of their dosimeters began alarming. The delay in leaving resulted in exceeding the administrative exposure limits.

#### Corrective Steps Taken/Results Achieved

- 1) Inclusion of documented radiological holdpoints in the Radiation Work Permits (RWP) has been re-emphasized. Review of RWPs since the resin spill incident has revealed appropriate inclusion of documented radiological holdpoints.
- 2) The HP Department has initiated discussion of individual responsibilities in the prejob briefings. These discussions include forbiddance of assignment exchanges among HP Technicians unless they are equally qualified and each has had the appropriate prejob briefing, or the exchange is specifically approved by HP Supervision.
- 3) The HP Department has initiated discussion of the proper use and placement of alarming dosimeters, as appropriate, in the prejob briefings.

Corrective Action to be Taken

- 1) Incorporate this incident as a case study/discussion into the training program for HP contract personnel, added to the HP staff for the annual refueling outages.
- 2) Incorporate lessons learned from this incident into the Shift Lead Technician training module.
- 3) A Plant procedure change will be made (which will result in required reading for all HP Technicians) that incorporates a description of the potential for erratic operation of the Xetec Model 415 in high humidity environments.

Date of Full Compliance

Further corrective actions will be completed by April 1, 1992.

- B. 10 CFR 20.201(b) requires that each licensee make such surveys as may be necessary to comply with the requirements of Part 20 and which are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present. As defined in 10CFR 20.201(a), "survey" means an evaluation of the radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions.

Contrary to the above, on April 17, 1991, surveys were not made to identify exposure rates up to approximately 70 Roentgens per hour in the Reactor Water Cleanup (RWCU) room where workers had been sent to clean up a resin spill:

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

#### Validity of Violation

The Supply System acknowledges the validity of this violation. The root cause for the violation was that the Work Practices were Less Than Adequate by the Health Physics (HP) technician performing the surveys. Technician #2, as previously defined in Part A of this response, performed the surveys and HP coverage during the administrative overexposure incident. He was a contract Senior Health Physics Technician.

The Reactor Water Cleanup (RWCU) tank room contains two Tanks. Prior to entering, Technician #2 extended the probe into the room and observed 250 mr/hr at the plane of the door and up to 5 R/hr close to the far tank. Technician #2 allowed three laborers to enter the room without indicating an allowable stay time.

One of the laborers passed between the two tanks (from the north side to the south side) prior to that particular area being surveyed. Later, Technician #2 observed dose rates between the two tanks of 7 to 8 R/hr. Technician #2 then moved outside of the room at approximately the same time the remaining two laborers moved to the south side of the tanks where the first laborer was working. No surveys had been taken in the area on the south side of the tanks. Approximately 2 minutes later, a laborer informed Technician #2 of an alarming dosimeter and all of the laborers proceeded to exit the area.

A senior level technician is expected to calculate an estimated stay time for personnel in high dose rate areas based upon their previous exposure to ensure time for personnel to exit the area without inadvertently exceeding their individual administrative dose limit. No estimates were provided to the laborers. A senior level technician would be expected to survey areas of a room with a potential for localized areas of high dose rates, prior to allowing personnel to enter that particular area. Technician #2 surveyed the area between the tanks after and not before the laborer had passed through the area. He also allowed the laborers to go into the area behind the tanks where he had not yet surveyed.



The selection process for contract HP technicians has been reviewed to identify weaknesses. Upon evaluation, the Supply System selection process was determined to be adequate.

Corrective Steps Taken/Results Achieved

- 1) As directed by the Supply System, the contractor removed Technician #2 from the WNP-2 site.

Corrective Action to be Taken

The corrective actions taken in response to NOV 91-31-01 also apply to preventing recurrence of inadequate surveys.

Date of Full Compliance

Further corrective actions will be completed by April 1, 1992.