

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Inspection Report: 50-397/95-23

License: NPF-21

Licensee: Washington Public Power Supply System  
3000 George Washington Way  
P.O. Box 968, MD 1023  
Richland, Washington

Facility Name: Washington Nuclear Project-2 (WNP-2)

Inspection At: Richland, Washington

Inspection Conducted: July 17-20, 1995

Inspector: G. L. Guerra, Jr., Radiation Specialist  
Facilities Inspection Programs Branch

Approved: \_\_\_\_\_

*B. Murray*  
B. Murray, Chief, Facilities Inspection  
Programs Branch

*8/14/95*  
Date

Inspection Summary

Areas Inspected: Routine, announced inspection of the radiological environmental monitoring program including: organization and management controls, training and qualifications, quality assurance program, radiological environmental monitoring program, meteorological monitoring program, and reports of environmental monitoring operations.

Results:

- The organizational structure and staffing for the radiological environmental monitoring program met Technical Specification requirements. Management controls of the radiological environmental monitoring program were properly implemented (Section 1.1).
- A well qualified and trained staff was maintained to conduct the radiological environmental monitoring program. An Inspection Followup Item was opened regarding training in the meteorological monitoring program (Section 2.1).

- Comprehensive quality assurance audits of the radiological environmental monitoring program were performed. Quality control checks were performed to verify contract environmental laboratory results (Section 3.1).
- The radiological environmental monitoring program was implemented in accordance with the Offsite Dose Calculation Manual and Technical Specifications. The licensee performed well in sample preparation and shipment. A Non-Cited Violation was identified regarding the unauthorized release of spray pond sludge which contained radioactive contaminants in violation of 10 CFR 20.2001 (Section 4.1).
- A meteorological monitoring program was implemented that maintained a 90 percent data recovery ratio and agreed with guidance contained in applicable NRC Regulatory Guides and American National Standards Institute/American Nuclear Society (ANSI/ANS) documents. Meteorological monitoring instrumentation was operable and properly calibrated (Section 5.1).
- Annual Radiological Environmental Operating reports were submitted in a timely manner and contained all required information. Proper annual land use censuses were performed as required (Section 6.1).

Summary of Inspection Findings:

- Inspection Followup Item 397/9523-01 was opened (Section 2.1).
- A Non-Cited Violation was identified (Section 4.1).

Attachment:

- Attachment - Persons Contacted and Exit Meeting



DETAILS

1 ORGANIZATION AND MANAGEMENT CONTROLS (84750)

The organization, staffing, management controls, and assignment of the radiological environmental monitoring program responsibilities were reviewed to determine agreement with commitments in the Updated Safety Analysis Report and compliance with the requirements in Technical Specification 6.2.

1.1 Discussion

The inspector noted that the licensee had made changes within its organizational structure. Specifically, the supervision of the radiological environmental monitoring program (REMP), including meteorological monitoring, had been moved from the Health Physics Department to the Chemistry Department. Also, the licensee had made reductions in its staff size. Currently, a staff of two environmental scientists along with respective management supervision conduct the radiological environmental monitoring program. Also, support from other licensee organizations such as Instrumentation and Controls and Engineering was available for instrument calibrations and technical support. Furthermore, additional duties had been assigned to the two environmental scientists because of the licensee's staff reductions. Nonetheless, the inspector determined that the present organization and staff were capable of conducting the radiological environmental monitoring program as outlined in the Updated Safety Analysis Report, Technical Specifications, and the Offsite Dose Calculation Manual.

Procedures for the implementation of the radiological environmental monitoring program were reviewed. Specifically, procedures in Series Health Physics Instruction (HPI) 13, REMP Procedures, were reviewed for the assignment of responsibilities for the management and implementation of the radiological environmental monitoring program. The licensee stated that these procedures are to be converted from Health Physics Department procedures to Chemistry Department procedures. These procedures outlined the responsibilities for collection, documentation, and shipment of environmental media samples collected around the WNP-2 site. The inspector determined that the duties and responsibilities specified in the procedures regarding the implementation of the radiological environmental monitoring program were performed as required. Through discussions with members of the licensee's staff who were trained and qualified to perform the environmental sampling responsibilities, the inspector determined that they were familiar with the requirements of the radiological environmental monitoring program. The inspector verified that the assignment of management control responsibilities for the implementation of the radiological environmental monitoring program was as identified in the Technical Specifications.

1.2 Conclusions

The licensee's organizational structure for the radiological environmental monitoring program met the Technical Specification requirements. The licensee's reduced staff was capable of performing the duties required by the

radiological environmental monitoring program. The management controls of the radiological environmental monitoring program were being implemented in accordance with Technical Specifications.

## 2 TRAINING AND QUALIFICATIONS (84750)

The training and qualification programs for the licensee's staff responsible for implementing the radiological environmental monitoring program were reviewed to determine agreement with commitments in the Updated Safety Analysis Report and compliance with the requirements in Technical Specifications 6.3 and 6.4.

### 2.1 Discussion

The inspector reviewed Procedure HPI 13.1.1, "Personnel Qualifications and Training," Revision 7, November 3, 1994, which described the training program for the staff involved in the radiological environmental monitoring program. The inspector determined that the education and experience, training, and working knowledge of the environmental scientists, who had been in their positions a number of years, met the training and qualification requirements outlined by the above procedure with respect to the radiological environmental monitoring program.

The inspector noted that the system engineer responsible for the meteorological towers and instrumentation was knowledgeable of the systems, data acquisition, and the applicable industry standards. Also, the inspector noted that the environmental scientist responsible for compiling, analyzing, and reporting the meteorological monitoring data had recently been assigned responsibility in this area. However, at the time of the inspection, when questioned by the inspector, it was found that this individual had not received training on the meteorological monitoring systems and was not knowledgeable of the recommendations contained in the industry standards involving meteorological monitoring activities. This observation was discussed with the licensee during the inspection and at the exit meeting on July 20, 1995. ANSI/ANS 18.1-1971, states that a suitable training program shall be established for managers, supervisors, professionals, operators, technicians, and repairmen to properly prepare them for their assignments and to meet the requirements established by the facility license. The licensee stated that they would evaluate the training provided to the environmental scientist and take appropriate actions. This item is considered an Inspection Followup Item (IFI 397/9523-01).

### 2.2 Conclusions

The licensee maintained a well qualified and trained staff to conduct the radiological environmental monitoring program. An Inspection Followup Item was opened regarding training provided to the environmental scientist in the meteorological monitoring program.

### 3 QUALITY ASSURANCE PROGRAM AND QUALITY CONTROL (84750)

The quality assurance audit program regarding the radiological environmental monitoring program activities was reviewed to determine agreement with commitments in the Updated Safety Analysis Report and compliance with the requirements in Technical Specification 6.5.2.8. Also, quality control activities conducted on the contract environmental laboratory were reviewed.

#### 3.1 Discussion

Audit reports of quality assurance activities related to the radiological environmental monitoring program performed during 1992 (Audit 92-601), 1993 (Audit 93-618), and 1994 (Audit 94-013 and Audit 94-066) were reviewed for scope, thoroughness of program evaluation, and timely followup of identified deficiencies. The inspector also reviewed audit schedules, plans, and checklists. The audits were performed at the proper frequencies to satisfy the commitments in the Technical Specifications and conducted in accordance with quality assurance procedures by qualified auditors. The inspector noted that the quality assurance audits were designed to assess the adequacy and effectiveness of the radiological and nonradiological environmental monitoring programs. The audits included a review of the program implementation and compliance with regulations, procedures, and industry standards. The inspector found the quality assurance audits to be comprehensive and able to effectively evaluate the licensee's performance in implementing the radiological environmental monitoring program.

The licensee used a contract environmental laboratory to perform radiological analyses on their environmental media samples. The inspector reviewed Audit 94-02, performed by the licensee on March 15-18, 1994. The audit was to verify the contract laboratory's ability to provide the radiological analyses of environmental media samples in accordance with the quality control guidelines in NRC Regulatory Guide 4.15. The audit team found that overall the contract laboratory was able to provide the radiological analyses as required. Discussions with licensee representatives revealed that the licensee planned on auditing the vendor every 3 years and use audits of the vendor performed by other utilities for the years between every third year in order to track the contract environmental laboratory's performance.

The contract laboratory, as well as the licensee, participated in the Environmental Protection Agency Interlaboratory Comparison Program. The licensee sends all samples to the contract laboratory for analyses, thus the contract laboratory participates in the interlaboratory comparison program twice. Furthermore, the licensee also participates in the following programs: the U.S. Department of Energy Environmental Measurements Laboratory Quality Assessment Program and the Environmental Radiation Quality Assurance Task Force of the Pacific Northwest. Also, as part of the licensee's quality control procedures, double samples were prepared and sent to the contract laboratory periodically as another check on the laboratory. Favorable results were obtained from these quality control programs.

### 3.2 Conclusions

Quality assurance audits of the radiological environmental monitoring program were performed as required. These audits were comprehensive and satisfactory to evaluate the licensee's performance in implementing the radiological environmental monitoring program in accordance with Technical Specification and Offsite Dose Calculation Manual requirements. The licensee participated in several quality control programs which verified the contract laboratory's abilities.

## 4 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (84750)

The radiological environmental monitoring program was reviewed to determine compliance with the requirements in Technical Specification 6.8.4.e and the Offsite Dose Calculation Manual.

### 4.1 Discussion

Personnel from the Chemistry Department's environmental and analytical section were responsible for the collection, shipment, and documentation of radiological environmental samples. Analyses of environmental samples were conducted by a contract laboratory. The inspector reviewed procedures in the HPI 13 series for the administration and implementation of the radiological environmental monitoring program. These procedures provided for the sampling, preparation, and shipping of environmental media samples and for the evaluating and reporting of the radiological analytical results. The procedures were written with sufficient detail to ensure compliance with Offsite Dose Calculation Manual requirements.

The inspector accompanied and observed an environmental scientist prepare air particulate and charcoal cartridge samples for shipment and analyses. All aspects of the sampling process and sample preparation for shipment and analyses were performed in accordance with approved procedures. Airborne sampling sites were inspected, and the air sampling equipment was operational and currently calibrated. The environmental staff was supported by other plant departments for the maintenance and calibration of air samplers and for the reading and annealing of thermoluminescent dosimeters (TLDs). The inspector verified that the licensee had a sufficient supply of environmental sampling equipment including additional air sampler pumps.

The inspector visited and examined selected environmental media sampling locations of the following types: airborne, water, bottom sediment, and TLDs. During the inspection, the inspector verified that the sampling locations were as described in Table 5-1 of the Offsite Dose Calculation Manual. Selected sample collection logs, sample shipment and receipt forms, and a number of sample analyses reports were reviewed. It was determined that the collection, processing, and analyses of radiological environmental media samples were conducted in accordance with the Offsite Dose Calculation Manual.

On July 12, 1995, the licensee notified the NRC under 10 CFR 50.72(b)(2)(vi), of an offsite notification made to the Washington State Department of Health. As part of baseline studies being performed for the National Pollution

Discharge Elimination System (NPDES) permit process, the licensee was sampling sediment from the spray pond drain field trench, a service water system discharge path. Reporting to the Washington State Department of Health was required because the level of cobalt-60 exceeded the "investigation level" jointly established by the licensee and the Washington State Department of Health. The investigation level was set at 2500 picocuries per kilogram (pCi/Kg) and the samples taken revealed levels of 5580-5870 pCi/Kg. Problem Evaluation Request (PER) 295-0843 was initiated by the licensee for investigation of the causes of these radioactivity levels. Nine corrective actions were identified which included: (1) Investigating and documenting the nature and extent of contamination spread by the removal of spray pond sediment and the locations used for sediment disposal; (2) Investigating and documenting the chemical characteristics of the spray pond sediment; (3) Evaluating the radiological properties of the service water sediment disposal areas and implementing radioactive material access control and posting requirements, if required; (4) Submitting an application with the State of Washington for alternate disposal of the service water sediment in accordance with the provisions of 10 CFR 20.2001 and 20.2002; (5) Determining the source of radioactive contamination in the spray pond sediment; (6) Verifying that other routine plant effluent and waste release pathways are not causing an inadvertent buildup of radioactive material in the environment; (7) Modifying plant procedure(s) to incorporate the necessary criteria to control the removal and disposal of sediment from the spray ponds; (8) Verifying that the worker dose limits of 10 CFR Part 20 were not exceeded from past disposal operations; and (9) Accumulating available information and sampling data and establishing a plant record file for spray pond sediment disposal that meets the record requirements of 10 CFR 20.2103, 20.2108, and 50.75(g). These corrective actions, except the application for alternate waste disposal, are to be implemented by the Chemistry, Radiation Protection, and Regulatory and Industry Affairs Departments by October 10, 1995. The licensee estimates that, if granted by the State of Washington, a permit for continued use of the trench as a service water discharge pathway would be issued in the spring of 1996 with all other corrective actions completed. Unauthorized disposal of licensed material is a violation of 10 CFR 20.2001; however, this licensee-identified and corrected violation is a Non-Cited Violation, consistent with Section VII of the NRC Enforcement Policy.

#### 4.2 Conclusions

The licensee was implementing the radiological environmental monitoring program in accordance with the Offsite Dose Calculation Manual and Technical Specifications. The licensee's environmental laboratory was well equipped to perform sample preparation and shipment. The licensee used a contract environmental laboratory to perform sample radiological analyses. Environmental media sampling and environmental TLD stations were at locations as described in the Offsite Dose Calculation Manual. A Non-Cited Violation was identified regarding unauthorized releases of spray pond sludge which contained radioactive contaminants in violation of 10 CFR 20.2001.



## 5 METEOROLOGICAL MONITORING PROGRAM (84750)

The inspector reviewed the meteorological monitoring program to determine compliance with the requirements in Technical Specification 3/4.3.7.3 and the recommendations of NRC Regulatory Guides 1.23 and 1.97, and ANSI/ANS 2.5-1984.

### 5.1 Discussion

The inspector inspected the primary and secondary meteorological towers and their associated monitoring instrumentation. Technical Specification required instrumentation was found operational and calibrated. The required daily surveillance channel checks of the meteorological monitoring instrumentation were found to be satisfactorily completed.

The inspector reviewed meteorological instrumentation calibration procedures, surveillance procedures, and associated records. The meteorological monitoring instrumentation calibration records for the calibrations conducted between August 26, 1993, and June 2, 1995, were reviewed. The inspector verified that the meteorological tower instrumentation had been calibrated semiannually as per Technical Specification requirements by the licensee's Instrument and Controls technicians. The calibrations were conducted in accordance with approved surveillance procedures. Surveillance Procedure 7.4.3.7.3.1 addressed the wind speed and wind direction channel calibration for both the 33- and 245-foot levels, and Surveillance Procedure 7.4.3.7.3.3 addressed the air temperature difference channel calibration. Daily surveillance checks were performed by the system engineer. All records reviewed indicated that meteorological monitoring instruments were being maintained, tested, and calibrated in compliance with Technical Specification requirements.

The licensee obtained a 90 percent data recovery rate for 1994.

### 5.2 Conclusions

The meteorological monitoring instrumentation channels were demonstrated operable and calibrated at the proper frequencies as required by Technical Specifications. The performance of the meteorological monitoring program satisfied the requirements of the Technical Specifications and agreed with the guidance contained in applicable Regulatory Guides and ANSI/ANS standards.

## 6 REPORTS OF ENVIRONMENTAL MONITORING OPERATIONS (84750)

The Annual Radiological Environmental Operating Reports were reviewed to determine compliance with the reporting requirements in the Offsite Dose Calculation Manual, Section 6.4.1, and the Land Use Census required by Offsite Dose Calculation Manual, Section 6.3.2, (Technical Specification 3/4.12.2).

### 6.1 Discussion

The inspector reviewed the Annual Radiological Environmental Operating Reports for 1993 and 1994. The reports were submitted in a timely manner and contained the required information. Any discrepancies or missed samples were



reported. The inspector determined that the Offsite Dose Calculation Manual (Technical Specification) sampling, analyses, and reporting requirements were met. The inspector determined that the annual land use censuses were conducted as required by the Offsite Dose Calculation Manual (Technical Specification) and that the results were included in the respective Annual Radiological Environmental Operating Reports.

## 6.2 Conclusions

Annual Radiological Environmental Monitoring Reports were submitted in a timely manner, contained the required information, and indicated that Offsite Dose Calculation Manual (Technical Specification) sampling and analyses requirements were met. Annual land use censuses were performed as required.



## ATTACHMENT

### 1 PERSONS CONTACTED

#### 1.1 Licensee Personnel

- \*J. V. Parrish, Vice President of Nuclear Operations
- \*J. H. Swailes, Plant Manager
- \*R. M. Abdella, Lead Training Specialist, Chemistry
- \*A. L. Alexander, Lead Effluents Technical Specialist, Chemistry
- \*W. H. Barley, Corporate Radiological Health Officer
- \*P. R. Bemis, Director, Regulatory and Industry Affairs
- \*D. A. Bennet, Chemistry Supervisor
- \*I. M. Boreland, Technical Specialist, Quality Assessment
- \*J. P. Burn, Director, Engineering
- \*D. L. Dinger, Health Physics Operations Supervisor
- \*C. J. Foley, Compliance Engineer
- F. S. Hallett, Instrument and Controls Technician
- \*M. R. Hatcher, Attorney
- \*M. P. Hedges, Corporate Chemist
- \*B. R. Hugo, Compliance Engineer
- \*W. A. Kiel, Licensing Engineer
- \*T. S. Love, Manager, Chemistry
- \*C. M. McDonald, Manager, Health Physics, Chemistry, and General Employee Training
- \*J. E. McDonald, Environmental Scientist
- \*T. L. Meade, Manager, Engineering Programs
- \*M. M. Monopoli, Manager, Maintenance
- \*S. W. Mulkey, Engineering Programs Supervisor
- \*J. J. Muth, Manager, Quality Support
- J. T. Nelson, Health Physics/Chemistry Technician - Instrument Calibration
- \*T. E. Northstrom, Environmental Laboratory Supervisor
- D. L. Overman, System Engineer, Meteorological Towers
- \*R. F. Patch, Radiation Protection Support Supervisor
- L. S. Schleder, Environmental Scientist
- \*C. J. Schwarz, Manager, Operations
- \*D. A. Swank, Manager, Compliance
- \*J. C. Wiles, Quality Assessment Engineer
- \*D. L. Williams, Nuclear Engineer
- \*L. S. Wosley, Quality Assessment Engineer

#### 1.2 Others

- \*P. D. Robinson, Attorney, Winston and Strawn

#### 1.3 NRC Personnel

- \*D. L. Prouix, Resident Inspector
- \*D. D. Chamberlain, Deputy Director, Division of Radiation Safety and Safeguards

\*Indicates those present at the exit meeting on July 20, 1995.

In addition to the personnel listed, the inspector met and held discussions with other personnel of the licensee's staff during the inspection.

## 2 EXIT MEETING

An exit meeting was conducted on July 20, 1995. During this meeting, the inspector reviewed the scope and findings of the report. The licensee did not express a position on the inspection findings documented in this report. The licensee did not identify as proprietary, any information provided to, or reviewed by the inspector.