U.S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-397/89-29

Docket No. 50-397

License No. NPF-21

Licensee: Washington Public Power Supply System
P. O. Box 968
Richland, Washington 99352

Facility Name: Washington Nuclear Project No. 2

Inspection at: WNP-2 Site, Benton County, Washington

Inspection Conducted: September 25-29, 1989

Inspected by: G. R. Cicotte, Radiation Specialist — 10-11-89 Date Signed

Approved by: F. A. Wenslawski, Chief, Facilities Radiological Protection Section — 10/11/89 Date Signed

Summary:

Inspection during the period of September 25-29, 1989 (Report No. 50-397/89-29)

Areas Inspected: Routine unannounced inspection by a regionally based inspector of Occupational Exposure, including External Occupational Exposure Control and Personal Dosimetry; Radioactive Waste Systems; and follow-up of open and unresolved items. Inspection procedures 30703, 83724, 83750, 84750, 90713, 92701, and 92702 were addressed.

Results: No violations were identified in the four areas addressed. Item 50-397/85-20-04, regarding plateout of iodine in sampling lines under accident conditions, has remained open, awaiting further testing (see paragraph 4). Overall, the licensee's programs appeared capable of meeting their safety objectives.

DETAILS

1. Persons Contacted

*M. M. Monopoli, Manager Support Services
*S. L. McKay, Operations Manager (for Plant Manager)
*J. D. Arbuckle, Compliance Engineer
A. I. Davis, Senior Radiochemist
*R. G. Graybeal, Health Physics/Chemistry (HP/C) Manager
*R. C. James, Senior Health Physicist
W. J. Kruger, Instrumentation and Controls (I&C) Supervisor
*D. E. Larson, Radiological Programs and Instrument Calibrations (RPIC) Manager
L. L. Mayne, Chemistry Craft Supervisor
D. B. Ottley, Radiological Assessments Supervisor
R. F. Patch, ALARA Coordinator
*D. J. Pisarcik, HP Support Supervisor
L. A. Pritchard, HP Craft Supervisor
*S. A. Regev, Senior Health Physicist-Internal Dosimetry
K. A. Smith, Radwaste Program Leader
D. M. Werlau, Manager of HP/C & General Employee Training (GET)

*C. J. Bosted, Senior Resident NRC Inspector

*Denotes those present at the exit interview held on September 29, 1989.

In addition to the individuals identified above, the inspector met and held discussions with other members of the licensee's and contractors' staff.

2. Occupational Exposure (83724 and 83750)

A. Audits and Appraisals

No audits were scheduled or required since the last inspection of this program area. The next audit was scheduled for late 1989.

B. Changes

The licensee was in the process of acquiring, at the time of the inspection, a proposed dosimetry processing system which would increase capabilities for monitoring of personnel. Licensee staff stated that they expect the system to be capable of being certified for all categories of personnel monitoring by the National Voluntary Laboratory Accreditation Program (NVLAP).

The licensee continued to make revisions to their computerized exposure and qualifications tracking system. No other significant changes had been made since the last inspection of this program area.

C. Planning and Preparation for Outages

Outage planning was discussed with the ALARA Supervisor. Representative post-job reviews, refueling outage person-rem expenditures, briefing records, and evaluations of the primary containment and in-service-inspection (ISI) tasks were reviewed. Actual versus estimated person-rem expenditures had in several instances been very close. The ALARA Supervisor stated that this was due in part to improved task analysis and better surveys of work areas. Although some tasks resulted in higher total dose than estimated, the causes had been determined by the licensee. No concerns were identified.

At the time of the inspection, the licensee had entered a forced outage condition due to main condenser tube leakage. Although no major radiological work was planned except for that necessary to support the corrective maintenance effort, planning for the outage appeared adequate.

D. Personal Dosimetry

The licensee's dosimetry tracking system, methods of issuing dosimetry, records of personnel exposure during 1989, and reports, were reviewed. No concerns were identified. Quality control checks on the dosimetry processing equipment and special dosimetry for July and August, 1989, were reviewed. The licensee recently became re-accredited for NVLAP categories II, IV, V, VII, and VIII. See paragraph 2.B, above.

E. Administrative Controls

Representative records from May and June, 1989, were reviewed, including radiation surveys of work areas, ALARA briefing records, radiation exposure cards (REC), and requests to extend administrative limits. The licensee's procedures had been revised to provide more direct control of entry to high dose rate areas (See IR 50-397/89-12).

F. Records, Reports, and Notifications

Records of several personnel with doses in excess of 10 CFR 20.101(a) standards during the refueling outage in May and June, 1989, were reviewed. All had forms NRC-4 and NRC-5 as required. Occupationally exposed minors were controlled to less than 10% of 10 CFR 20.101(a) standards. No examples of personnel having exceeded NRC standards for radiation exposure were observed. Representative records of contractor personnel hired for the 1989 refueling outage were reviewed. The licensee had obtained individuals' radiation dose reports from previous employers for the 20 records which were reviewed.

G. Internal Exposure Control

Several records of internal dose assessments from January, 1989, to the time of the inspection, were reviewed. No internal exposures exceeding 40 MPC-hours were observed. Although several personnel had received detectable uptake of radioactive material due to work during the outage, all had received less than 10% of their maximum permissible body burden (MPBB).

The occupationally exposed minors noted in paragraph 2.F, above, had received initial WBC bioassay, but had not been allowed to enter any areas with airborne radioactivity greater than the limits of 10 CFR 20.104(c).

The licensee uses a set of NaI detectors for in-vivo bioassay. This results in less resolution of individual energy peaks detected, as compared with GeLi type detectors. In several records of WBC, the counting equipment identification library software program appeared to have not identified peaks which were contained in the isotope library, within the defined energy range for each peak. In those instances, the Internal Dosimetry Supervisor identified the peaks and annotated the sample results printout to that effect. No examples of misidentification of fission or corrosion product energy peaks were observed.

The licensee tracks internal exposure for recording purposes whenever work in airborne radioactivity areas, as defined in 10 CFR 20.203(d), is conducted. Licensee procedures require that an assessment be performed whenever an individual is exposed to more than 2 MPC-hours in a day, or 10 MPC-hours in a week. No examples of failure to adhere to these requirements were identified.

Overall, the licensee's program appeared capable of meeting its safety objectives. No violations or deviations were identified.

3. Radioactive Waste Systems (84750)

A. Changes

No major changes had been made in the licensee's equipment or procedures since the last inspection of this program area. The licensee stated, however, that the projected expansion of storage capacity discussed in IR 50-397/88-41 was still planned.

B. Implementation

Processing of solid wastes was observed. Storage of spent radioactive resin liners had improved. All required controls appeared to have been implemented. No concerns were identified.

At 9:00 a.m. PDT on September 27, 1989, the inspector noted that the licensee had secured normal Reactor Building ventilation, thus shutting down control rack REA-SR-37, which controls the main plant vent release monitor RES-SR-27 and 27a (see paragraph 5.B, item

50-397/88-33-01, below). The licensee was conducting maintenance on the Reactor Building supply ventilation system, and the Standby Gas Treatment System (SGTS) was being operated to provide secondary containment ventilation. The Control Room Operators Log stated in part:

> "0755 Secured Rx Bldg vent system & started SGT-SYS-A w[with] LCO# 3.3.7.12.3a on REA-SR-37."

From review of Technical Specification (TS) 3.3.7.12, the entry appeared to refer to ACTION b, which requires in part that the action for an inoperable monitoring channel be taken in accordance with TS Table 3.3.7.12-1. For inoperability of the main plant vent low and intermediate range noble gas monitors, item 3.a of TS Table 3.3.7.12-1 requires a grab sample for noble gas be obtained within 8 hours. The entry in the log did not appear to address the 4 hour limitation of the required action for inoperability of the particulate and iodine sampler, or for the sampler flow rate monitor, as stated in TS Table 3.3.7.12-1, items 3.b, 3.c, and 3.e, respectively. Discussion with the Chemistry Supervisor revealed, however, that the alternate particulate/iodine sampling equipment had been installed shortly before the end of the 4 hour limit. The licensee stated that Chemistry personnel check the status of equipment daily to assure that TS action statements are met. The inspector noted that the action statements involved have time limits much shorter than one day.

The control room log entry and the description of the testing in item 50-397/88-33-01, below, indicate continued potential for misinterpretation of requirements by personnel who must make decisions concerning operability, and compensatory actions during periods of inoperability. The licensee acknowledged the inspector's concern at the exit interview.

Overall, the licensee's program appeared capable of meeting its safety objectives. No violations or deviations were identified.

4. Follow-up

A. Semi-Annual Radiological Effluent Release Report (SARERR)(90713)

The January-June 1989 SARERR, dated August 21, 1989, and a supplemental report which included corrected data, were reviewed. The licensee had included amended data for solid waste shipped, due to minor errors which had been discovered in scaling factors used in the two SARERRs for 1989 (see IR 50-397/89-20). No revisions to the Offsite Dose Calculation Manual (ODCM) were included in the report. Air Dose was calculated by the licensee to be approximately 0.2% of the TS limit. Doses for the second quarter of 1989 were higher than for the first quarter. However, the highest organ dose reported was less than 0.6% of the TS limit. The inspector calculated thyroid dose to a child from milk ingestion, and air dose to an adult from recreational water use using the licensee's ODCM, Land Use Census, and SARERR reported activity. Regulatory Guide 1.109 calculations

were compared to licensee calculations from the ODCM. No concerns with regard to the SARERR were identified.

B. Follow-up (92701)

50-397/88-33-01(Closed): This matter refers to a failure to continuously sample the main plant vent according to the action statement of TS 3.3.7.12 (see IRs 50-397/88-33 and 50-397/88-41). The licensee had committed to further testing, from which they had concluded that a valid noble gas sample could still be obtained under low flow conditions. Technical Evaluation Request (TER) 88-0319-0 had been implemented in part to assure actuation of the post accident high range monitor under high effluent activity conditions. The inspector noted that a memorandum from the Plant Engineering Supervisor to the Plant Technical Manager, dated June 30, 1989, stated in part that isokinetic sampling could be obtained at sample stream flows of 0.1 to 0.17 cubic feet per minute (CFM), during SGTS operation for secondary containment ventilation.

The inspector discussed the memorandum with licensee staff personnel who had conducted the tests. Licensee staff stated that the memorandum had been drafted with the word "isokinetic" because the system print described the sampling lines as isokinetic. The tests appeared to have been conducted without determining whether the sample was either isokinetic or representative, but only to determine if adequate flow could be established to assure operation of the actuation function as noted above. Discussion with the Senior Radiochemist revealed that he understood the limitations of the test which was conducted. As subsequent operations with SGTS included taking the required action (see paragraph 3.B above), this matter is considered closed.

50-397/88-36-03(Closed): This matter refers to a failure to conspicuously post a radiation area (see IRs 50-397/88-36 and 50-397/89-09). Although adherence to radiological controls requirements continues to be a concern (see IRs 50-397/89-13 and 50-397/89-17), the licensee had completed the evaluation of work practices to which they had committed in their response. Corrective action recommendations resulting from that evaluation were in the process of being implemented or had been completed. This matter is considered closed.

50-397/89-12-01(Closed): This matter refers to NRC concern regarding lack of cyclic review for Radiological Programs Instructions (RPI), and performance checks on whole body counting equipment (see IR 50-397/89-12). The applicable RPIs had been revised. One RPI contained an incorrect reference to RPI 5.2, which had been deleted. Although the licensee had not been aware of the problem until brought to their attention, the Internal Dosimetry Supervisor stated the correct reference was RPI 5.10, Daily System Performance Check for the Whole Body Counting System, which was in effect at the time of the inspection. The inspector noted that although RPI 5.10 still allowed relaxation of the frequency of energy calibrations, the licensee had re-performed the

energy calibration after the concern was brought to their attention. This matter is considered closed.

50-397/89-12-02(Closed): This matter refers to NRC concern regarding contamination control practices of HP Technicians (HPT) (see IR 50-397/89-12). Several activities were observed by the inspector and contamination control techniques were discussed with HPTs. No additional concerns were identified. This matter is considered closed.

50-397/89-20-01(Closed): This matter refers to an inadequate audit of the unit staff which had been conducted to meet the requirements of TS 6.5.2.8.b (see IR 50-397/89-20). The licensee's timely response to the Notice of Violation stated that a separate review of equipment operators (EO) identified no concerns. The licensee further stated that a memorandum had been distributed to personnel in the QA group clarifying the appropriate requirements. The inspector verified that the stated corrective actions had been accomplished. This matter is considered closed.

50-397/IN-89-27(Closed): This refers to NRC Information Notice 89-27, Limitations on the Use of Waste Forms and High Integrity Containers for Disposal of Low-Level Radwaste, which the licensee had received and distributed. The inspector verified that the licensee had considered and incorporated the information in their program. This matter is considered closed.

50-397/IN-89-44(Closed): This refers to NRC Information Notice 89-44, Hydrogen Storage on the Roof of the Control Room, which the licensee had received and distributed. The inspector verified that the licensee had considered and incorporated the information in their program. The licensee's plant configuration is such that this is not a concern. This matter is considered closed.

50-397/IN-89-47(Closed): This refers to NRC Information Notice 89-47, Potential Problems with Worn or Distorted Hose Clamps on Self-Contained Breathing Apparatus, which the licensee had received and distributed. The inspector verified that the licensee had previously considered and incorporated in their program the concerns addressed by the Information Notice. This matter is considered closed.

50-397/85-20-04(Unresolved): This refers to plateout of iodine on sampling lines under accident conditions (See IR 50-397/89-20). There was no change in the status of the in-plant testing which was discussed therein. The licensee's staff stated that the laboratory test results were in a delivery pending status. This matter will remain open pending further testing and evaluation by the licensee.

An unresolved item is one about which more information is required in order to determine if it is an acceptable item, a violation, or a deviation.

The licensee's program appeared capable of meeting its safety objectives. No violations or deviations were identified.

5. Tours of the Facility

Tours of the Radwaste Building (RWB), Reactor Building (RB), and Turbine Building (TB), were conducted. Independent radiation surveys were performed with NRC ion chamber survey instrument model #RO-2, serial #008395, and due for calibration on October 11, 1989.

Radiological postings, contamination control stepoff pads, and other access controls which were observed were consistent with the licensee's procedures and TS requirements. Radiological work practices appeared to have continued to be improved over previous inspections (See IR 50-397/89-20).

Housekeeping appeared adequate. Some areas had contamination control materials left on the floor, particularly in low traffic areas. However, the 507' elevation of the RWB and the 501' elevation of the TB appeared much improved over previous inspections.

Overall, the licensee's program appeared capable of meeting its safety objectives. No violations or deviations were identified.

6. Exit Interview

The inspector met with those individuals, denoted in paragraph 1, at the conclusion of the inspection on September 29, 1989. The scope and findings of the inspection were summarized. The licensee was informed of the concern regarding testing and technical evaluation of effluent monitoring capabilities, as described in paragraph 3.B and paragraph 4.B, item 50-397/88-33-01. The licensee acknowledged the inspector's concern.