

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-397/86-02
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 (WNP-2)
Inspection at: WNP-2 Site, Benton County, Washington
Inspection conducted: January 13-17, 1986 and in office inspection
effort between January 21 and February 3, 1986

Inspectors: GP Yuhas for 2/14/86
C. I. Sherman, Radiation Specialist Date Signed

Approved By: GP Yuhas 2/14/86
G. P. Yuhas, Chief Date Signed
Facilities Radiological Protection Section

Summary:

Inspection on January 13-17, 1986 and in office inspection effort between
January 21 and February 3, 1986 (Report 50-397/86-02)

Areas Inspected: Routine unannounced inspection of the radiological controls area including: solid radioactive waste processing and disposal (84722, 84850), surveys (83726), facilities (83727), ALARA (83728), liquid effluents (84723), gaseous effluents (84724) and chemistry (79701). This inspection involved 32 hours onsite by one regionally based inspector and 15 hours of in office inspection effort.

Results: Of the areas inspected, no violations or deviations were identified. One allegation involving an example of failure to make every reasonable effort to maintain radiation exposures "as low as is reasonably achievable" (ALARA) was substantiated (paragraph 9).

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DETAILS

1. Persons Contacted

- *J. Martin, Assistant Managing Director for Operations
- *C. Powers, Plant Manager
- *J. Baker, Assistant Plant Manager
- *R. Graybeal, Health Physics/Chemistry Manager
 - D. Feldman, Plant Quality Assurance Manager
 - L. Berry, Health Physics Supervisor
 - L. Bradford, Assistant Health Physics Supervisor
 - V. Shockley, Health Physics Support Supervisor
 - A. Davis, Senior Radiochemist
 - J. Allen, Health Physicist
 - D. Bennett, Radiochemist
 - G. Oldfield, Senior Health Physicist
- *D. Kidder, Chemistry Support Supervisor
 - V. Coleman, Chemical Process Engineer
 - D. Larson, Manager, Radiological Programs
- *G. Bouchev, Director, Support Services

*Denotes those individuals participating in the exit interview on January 17, 1986.

2. Follow-up on Inspector Identified Items

NRC Inspection Report 85-29 identified a weakness in the transportation program for shipment of Type B quantities of RAM. By letter dated September 18, 1985, G. Sorensen (SS) to J. Martin (NRC), the licensee committed to review their program and make appropriate changes by November 1, 1985. The inspector verified that program changes were included in Plant Procedure Manual (PPM) 1-12.2, "Radioactive Waste Process Control Programs" revision 1 dated October 4, 1985. This matter is considered closed (85-29-02).

NRC Inspection Report 85-29 identified deficiencies in the area of the radioactive waste management program. In the above referenced letter, the licensee also committed to review its radioactive waste management program and process control program and to make appropriate procedural changes by November 1, 1985. The inspector examined PPM 1.12.1, "Radioactive Waste Management Program", revision 1, dated October 4, 1985, and the above referenced procedure to verify completion of the commitment. This matter is closed (85-29-02).

NRC Inspection Report 84-22 identified a poor practice with respect to granting of verbal exceptions to radiation work permits (RWP). In discussion with the health physics supervisor, the inspector verified that a RWP procedure to be issued shortly will resolve this matter. (Closed, 84-22-01)

NRC Inspection Report 85-37 identified an ALARA concern in that certain valves in the drywell were difficult to locate. The inspector determined by discussion with the operations manager that either the valves in question or the azimuthal locations within the drywell will be better

marked and that this will be accomplished during the forthcoming refueling outage. (Closed, 85-37-01)

NRC Inspection Report 85-03 identified a concern that the licensee's ALARA program was not being accomplished with an acceptable degree of formality. Concerns identified in 85-03 have been resolved. (Closed, 85-03-03).

3. LWR Water Chemistry Control and Chemical Analysis (79701)

The inspector examined the licensee's programs to control primary plant process water so that integrity of the reactor coolant pressure boundary is ensured, the chemistry quality analysis program was also examined.

The following program changes have occurred.

- ° A reorganization placing a Chemistry Support Supervisor under the Chemistry/Health Physics Manager effective November 15, 1985.
- ° This organization included eight individuals with responsibility for various aspects of the water chemistry program.
- ° Revision of PPM's 1.1.2, 1.1.3, 1.13.1 to reflect changes in organization and responsibility for plant chemistry is in progress.
- ° Revision of Nuclear Operation Standard (NOS) 36 should include incorporation of the BWR owners group water chemistry guidelines.

The inspector discussed primary plant chemistry performance with the licensee representatives and examined the health physics and chemistry report for November 1985. This reports identified important parameters. Of note was the low value for primary coolant (I-131 dose equivalent) activity which ranged from a monthly maximum in February 1985 of $1.2E-4$ microcuries per gram of reactor coolant to $1.27E-5$ uCi/gm in May 1985. The Technical Specification limit is $2E-1$ uCi per gram. This measure is an indicator of fuel integrity.

The licensee has continued to improve the condenser air in-leakage problem which has been of concern since the plant began operation. The plant plans to make modifications during the forthcoming outage to reduce in-leakage to within the design value for the system.

NRC Inspection Report 85-25 identified the need to institute more internal quality control and/or blind split samples in the measurement program. NRC Inspection Report 85-11 identified several concerns regarding implementation of the laboratory analytical control (LAC) program. The licensee has modified their program to include a more extensive outside cross checks with their contractor laboratory. Additionally, one of the chemistry support engineers has been assigned responsibility for overseeing the LAC and chemistry quality assurance programs.

The inspector discussed with the licensee the importance of internal quality control in the form of blind, replicate and spike samples as an

adjunct to the external cross check program. The licensee representatives agreed to consider the matter.

The licensee has implemented a program to control chemicals that may affect the reactor systems. This satisfies a commitment made in response to an NRC Notice of Violation in a letter dated July 11, 1985, G. Sorensen (SS) to J. Martin (NRC).

The following documents were examined in this topical area:

- ° Memorandum dated December 27, 1985, R. Mazurkiewicz to D. Larson, Subject: Air In-Leakage Evaluation;
- ° Memorandum dated December 17, 1985, R. Moen to J. Martin, Subject: WNP-2 Chemical Control Evaluation;
- ° Memorandum dated January 8, 1986, D. Larson to R. Graybeal, Subject: Health Physics and Chemistry Trend Report - November 1985.

The licensee's programs and implementation in the area of chemistry control were considered acceptable at this time based upon discussion with licensee representatives, review of procedures and chemistry data. In addition, based on discussion with licensee representatives, the inspector concluded that an appropriate level of management attention was focused on this area.

No violations or deviations were identified.

4. Liquid Radioactive Waste (84723) and Gaseous Radioactive Waste (84724)

This area was inspected to determine if the licensee effectively controls and quantifies radioactive effluents. Previous examination of this area identified a deficiency in that computer codes were not adequately documented and validated. NRC Inspection Report 85-11 stated that documentation and verification of computer codes; procedural changes to implement this commitment; and provisions for verification of computer input would be examined in a subsequent inspection. The inspector examined the documentation and verification packages for several chemistry calculation routines and also reviewed PPM 12.11.2, "Chemistry Verification of Calculation Routines". The inspector also verified that provision for review of input data was also included in procedures. This matter is closed (85-11-09)

The inspector examined summary liquid effluent release data for 1985 in the form of the semiannual effluent report for the first half of 1985 and the HP and Chemistry Trend Report through November 1985. Several minor errors were identified in the semiannual report, these were discussed with a licensee representative who stated that the licensee was aware of the errors and plans to correct them in the forthcoming report.

The maximum individual whole body dose to an adult from combined liquid pathways through November was 0.15 percent of the Technical Specification 3.11.1.2 limit of 3 millirem on an annual basis to the total body. The

licensee released 310,820 gallons of liquid effluent in 1985 through November 1985 at an average fission and activation product concentration (through June) of $1.8E-6$ microcuries per cubic centimeter of water.

The inspector examined selected liquid release dose calculations and release authorization permits for releases performed in 1985. Based on review of documentation this area was considered acceptable.

The inspector examined monthly gaseous effluent release dose calculations performed by the plant chemistry staff and verified that selected calculations were in accordance with the ODCM. The inspector examined records of calibrations of the offgas post-treatment radiation monitor and the reactor building elevated release radiation monitor performed in 1985. Based upon review of calibration procedure 12.13.2, the inspector suggested that clarifying changes to the calculational and acceptance criteria steps would improve the usefulness of this procedure. This was discussed at the exit interview. Review of these calibrations was otherwise acceptable.

Review of the HP and Chemistry Trend Report showed that gaseous releases as calculated by Gamma Air Dose at 1.2 miles as required by TS 3.11.2.2 averaged over 1985 through November are about 3% of the technical specification limit.

Based on the results of this review, the inspector concluded that effluent releases are documented, instrumentation is calibrated and releases of radioactive materials remain ALARA.

No violations or deviations were identified.

5. Air Cleaning Systems (84724)

The inspector examined procedures, records of surveillance tests and discussed with cognizant personnel implementation of Technical Specification surveillance requirements 4.7.2.c&e for the control room emergency filtration system. The inspector discussed with licensee representatives and at the exit interview the need to improve test documentation to clearly show tests were performed as described in the appropriate standard. The inspector noted that procedures for leak testing are oriented for performance by a contractor, while the licensee now performs the test. Completion of surveillance test requirements were satisfactory.

No violations or deviations were identified.

6. Maintaining Occupational Exposures ALARA (83728)

The inspector examined the licensee's program to verify efforts to maintain exposures ALARA.

The inspector examined or verified the following program areas considered important to maintaining exposure ALARA.

- Establishing and tracking ALARA goals and objectives
- Annual collective dose goal
- Tracking of high dose individuals
- Reviews of work packages and procedures
- Planning and preparation for outages

This area was considered satisfactory by the inspector.

No violations or deviations were identified.

7. Control of Radioactive Material, Surveys, Monitoring (83726)

The inspector examined several audits performed in the operational radiation protection area. The inspector examined selected survey records and reviewed radiological occurrences and contaminations. No significant incidents were identified in this area in 1985. Audits were of satisfactory quality and did not identify any significant problems.

No violations or deviations were identified.

8. Radioactive Waste Management (84850)

As identified in paragraph 2, the licensee has revised the radioactive waste management program. The inspector examined selected waste records and discussed with cognizant individuals various aspects of and changes to the waste management program.

No violations or deviations were identified.

9. Allegation

NRC Region V received an allegation by telephone on July 18, 1985, from a licensee contractor employee regarding radiological working conditions. This is the summary of an ongoing inquiry initiated in August, 1985. The substance of the allegation was that the individual received unnecessary radiation exposure because he was told to remain in radiation areas within the turbine building and the reactor containment drywell to wait for additional work. This individual additionally stated that he was told by a supervisor to hide in some locations to avoid looking idle. The inspector conducted a review of worker training records, drywell access records and radiation protection logs as well as discussion with the allegor, his supervisor and contractor management, radiation protection personnel, the outage work coordinator and several craft personnel performing similar work at the time of the outage and other individuals. The inspector verified that radiation protection training was provided to the allegor and the supervisor in question.

The inspection revealed the following information. The supervisor in question denied the substance of the allegation. The licensee representatives including the health physics drywell work coordinator stated that such a situation would be unlikely due to the controls placed on drywell work. The allegor could not provide specific dates and locations for specific detailed examination by the inspector. Review of entries, work and estimated radiation exposures did not reveal any

unusual events. The allegor and other craft personnel did not raise a concern to their management or to licensee personnel during the work period in question. The allegor stated this was out of fear of discrimination regarding future employment by the supervisor in question. Several other individuals also mentioned this concern in regard to this supervisor in particular. Discussion with contractor craft personnel onsite during the period in question with two exceptions indicated no recollection of facts that would tend to substantiate the allegation.

One individual recalled being told by his foreman to stay out of sight on at least one occasion, and recalled being told to wait inside either the drywell or the controlled areas of the turbine building on at least one occasion. Both the allegor and these other individuals mentioned above did not believe any direction received was with the intent to cause any persons to receive unnecessary radiation exposure.

Another individual specifically recalled one instance where he and two other workers were directed to wait on the 471 elevation of the Turbine Generator Building in the vicinity of coordinate B-8 for four to five hours. This individual recalled this area was a radiation and contamination area, that individuals were suited up in anti-contamination clothing and that he believed doses received in the period were negligible. The individual stated that several other similar instances had occurred. This individual believed that direction to wait was for the purpose of not appearing idle and that this direction came from the supervisor described in the allegation.

In conclusion, some information was developed that would tend to substantiate the allegor's statement that direction was given to hide in controlled or restricted areas. The allegors radiation dose for the quarter in question was reported by the licensee at less than 20% of the NRC quarterly limit. Based on review of facts developed in this matter, the allegation is considered substantiated. Title 10, Code of Federal Regulation, Part 20.1 (c) states in part that, " persons engaged in activities under licenses issued by the Nuclear Regulatory Commission pursuant to the Atomic Energy Act of 1954 . . . should, in addition to complying with the requirements set forth in this part, make every reasonable effort to maintain radiation exposures, and releases of radioactive materials in effluents to unrestricted areas, as low as is reasonably achievable. The term 'as low as is reasonably achievable' means as low as is reasonably achievable taking into account the state of technology, and the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to the utilization of atomic energy in the public interest. "

This section admonishes each licensee to act in accordance with the ALARA principles. It appears, based on the results of inquiry into this allegation that this goal was not achieved.

This matter was brought to the licensee's attention so that they could take appropriate steps to prevent any recurrence.

10. Exit Interview

An exit interview was held with the individuals denoted in paragraph 1 at the conclusion of the inspection on January 17, 1986. The scope and findings of the inspection were discussed at that time.