UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-8064

April 14, 2000

Mr. J. V. Parrish (Mail Drop 1023)
Chief Executive Officer
Energy Northwest
P.O. Box 968
Richland, Washington 99352-0968

SUBJECT: NRC INSPECTION REPORT NO. 50-397/2000-08

Dear Mr. Parrish:

This refers to the inspection conducted on March 13-16, 2000, at the Washington Nuclear Project-2 facility. The enclosed report presents the results of this inspection. Telephone discussions were held on March 29 and April 12, 2000, with Messrs. John Peters, Scott Boynton, and Bob Brownlee of your staff to clarify the inspection findings.

The inspection reviewed the implementation of the radiation protection program with a focus on as low as is reasonably achievable (ALARA) program. Overall, the radiation protection program was effectively implemented.

Based on the results of this inspection, the NRC has determined that three Severity Level IV violations of NRC requirements occurred. These violations are being treated as noncited violations (NCVs), consistent with Section VII.B.1.a of the Enforcement Policy. These NCVs are described in the subject inspection report. If you contest the violation or severity level of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011, the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Washington Nuclear Project-2 facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response, if requested, will be placed in the NRC Public Document Room (PDR).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Gail M. Good, Chief
Plant Support Branch
Division of Reactor Safety

Docket No.: 50-397
License No.: NPF-21

Enclosure:
NRC Inspection Report No.
50-397/2000-08

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-397
License No.:	NPF-21
Report No.:	50-397/2000-08
Licensee:	Energy Northwest
Facility:	Washington Nuclear Project-2
Location:	Richland, Washington
Dates:	March 13-16, 2000
Inspector:	James S. Dodson, Radiation Specialist
Approved By:	Gail M. Good, Chief, Plant Support Branch Division of Reactor Safety

Attachment: Supplemental Information

EXECUTIVE SUMMARY

Washington Nuclear Project-2
NRC Inspection Report No. 50-397/2000-08

This announced, routine inspection covered external and internal exposure controls, controls for radioactive materials and contamination, surveying and monitoring activities, radiation protection oversight activities, and the as low as is reasonably achievable (ALARA) program.

Plant Support

- Overall, the external exposure control program was effectively implemented. Radiological areas were posted and controlled in accordance with regulatory requirements. Personnel wore their dosimetry properly in the radiologically controlled area and appropriately utilized access control facilities. Management and administrative controls provided adequate oversight and guidance to the radiation protection program. There were no planned special exposures or declared pregnant women during the previous 12 months (Section R1.1).

- Housekeeping and material conditions in the radiologically controlled area were good. Equipment was stored in an orderly manner, areas were free of debris, and potentially contaminated trash was properly stored in labeled containers (Section R1.1).

- Overall, the internal exposure control program was effectively implemented. Whole-body counters were calibrated and source checked, utilizing a mixed gamma source traceable to the National Institute of Standards and Technology, at the frequencies required by station procedures. Respiratory protection equipment was cleaned, stored, and issued in accordance with station requirements (Section R1.2).

- The Senior Site ALARA Committee was actively involved in station dose reduction initiatives. Three-year average station dose has shown a declining trend since 1997. Station management was actively involved in the ALARA program. The station has developed a dose goal for calendar year 2000 of 64 person-rem with an acceptable basis. The planned exposure reduction initiatives were appropriate to support the calendar year 2000 exposure goal (Section R1.3).

- The quality surveillances were probing, comprehensive, and provided management with an accurate assessment of radiation protection program elements. The radiation protection self assessments were comprehensive and provided management with the appropriate level of insight into the radiation protection program. The licensee's identification threshold for generating problem evaluation requests was appropriate. Corrective actions were generally appropriate and timely (Section R7).

- Two examples of a failure to use the appropriate radiation work permit when entering posted high-high and high radiation areas were identified as a violation of Technical Specification 5.4.1.a. Continuous health physics coverage was provided to the operator in the example that involved the high-high radiation area. This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the

NRC Enforcement Policy. These problems are in the licensee's corrective action program as Problem Evaluation Requests 299-1175 and 299-1240 (Section R7).

- Two examples of a failure to maintain positive control over radioactive sources were identified as a violation of 10 CFR 20.1802. This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. These problems are in the licensee's corrective action program as Problem Evaluation Requests 298-1046 and 299-0533 (Section R7).

- The failure to evaluate the quantity or concentration of radioactive material and potential radiological hazard of liquid prior to discharge was identified as a violation of 10 CFR 20.1501.a. This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. This problem was in the licensee's corrective action program as Problem Evaluation Request 298-0044 (Section R8).

Report Details

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 External Exposure Controls

a. Inspection Scope (83750)

The inspector interviewed personnel and reviewed the following areas:

- Control of high, high-high, and very high radiation areas
- Radiological posting
- Radiologically controlled area access controls
- Dosimetry use by radiation workers
- Management controls
- Administrative controls

b. Observations and Findings

During tours of the radiologically controlled area, the inspector determined that high, high-high, and very high radiation areas were controlled and posted in accordance with regulatory requirements. High-high and very high radiation area keys were controlled and verified as required by station procedure. Additionally, the inspector verified through direct observation and radiation measurements that selected areas were posted per station procedures.

Personnel were observed processing into and out of the radiologically controlled area utilizing the appropriate radiation work permit corresponding to the work activities being performed. Personnel properly utilized the small article monitors and portal monitors. Radiation protection personnel were stationed at the entrance and exit to the radiologically controlled area and provided workers with appropriate guidance. During tours of the radiologically controlled area, the inspector observed that dosimetry was properly placed on radiation workers.

The inspector attended the station morning meeting and observed that management utilized this meeting to maintain involvement and oversight of significant radiological activities. Based on discussions with the licensee staff, routine management review of exposure data trends and discrepancies was conducted by the radiation protection manager and the radiological planning supervisor.

The inspector reviewed health physics instructions, site-wide, administrative and health physics procedures. Minor inconsistencies were noted between some procedures and the Updated Final Safety Analysis Report due to organizational changes. The organizational changes were being captured in the current revision to the Updated Final Safety Analysis Report. Additionally, the inspector identified two radiation protection procedures that, through implementation, could potentially allow entry into a high-high

radiation area without a radiation work permit (required by Technical Specifications). The licensee entered these issues in the corrective action program as Problem Evaluation Request 200-0499.

The inspector was informed by the radiation protection manager that there were no planned special exposures or declared pregnant women during the previous 12 months.

Housekeeping and material conditions in the radiologically controlled area were good. Equipment was stored in an orderly manner, areas were free of debris, and potentially contaminated trash was properly stored in labeled containers.

c. Conclusions

Overall, the external exposure control program was effectively implemented. Radiological areas were posted and controlled in accordance with regulatory requirements. Personnel wore their dosimetry properly in the radiologically controlled area and appropriately utilized access control facilities. Management and administrative controls provided adequate oversight and guidance to the radiation protection program. There were no planned special exposures or declared pregnant women during the previous 12 months.

Housekeeping and material conditions in the radiologically controlled area were good. Equipment was stored in an orderly manner, areas were free of debris, and potentially contaminated trash was properly stored in labeled containers

R1.2 Internal Exposure Control

a. Inspection Scope (83750)

The inspector interviewed personnel and reviewed the following areas:

- Whole-body counter calibrations
- Bioassay results
- Respiratory protection program

b. Observations and Findings

The inspector reviewed the calibration records for the whole-body counters and noted no deficiencies. Calibrations were performed utilizing a mixed gamma source traceable to the National Institute of Standards and Technology as required by station procedure. Response checks were also conducted at the frequencies required by station procedure.

The respiratory protection total effective dose equivalent ALARA evaluations were reviewed by the inspector. No discrepancies were noted. Additionally, positive whole-body count results were reviewed and determined to be below the station procedural threshold which required assignment of internal exposure.

The inspector toured the respiratory protection facilities used for cleaning, storage, issuance, and fit testing. A review of the respiratory protection equipment issue form indicated that 24 respirators were issued for radiological protection. Respirators were appropriately cleaned, disinfected, and stored in accordance with station requirements. Respirators had identification tags for inventory and tracking purposes. Inspection and maintenance were conducted by appropriately trained individuals. Respirator fit testing was being conducted using a porta-count fit test unit, which had a current calibration. No problems were identified.

c. Conclusions

Overall, the internal exposure control program was effectively implemented. Whole-body counters were calibrated and source checked, utilizing a mixed gamma source traceable to the National Institute of Standards and Technology, at the frequencies required by station procedures. Respiratory protection equipment was cleaned, stored, and issued in accordance with station requirements.

R1.3 Maintaining Occupational Exposure ALARA

a. Inspection Scope (83750)

The inspector reviewed the following areas:

- Senior site ALARA committee activities
- ALARA goals/results
- ALARA initiatives

b. Observations and Findings

The inspector reviewed the station's ALARA Policy and meeting minutes from 14 Senior Site ALARA Committee meetings. The committee discussed and set the site exposure goals, status of exposure reduction initiatives, industry lessons learned, outage lessons learned, specific job tasks associated with emergent work, and advanced radworker training. The committee meetings were appropriately attended by the major department managers or their alternates. Additionally, the site vice president received copies of the meeting minutes. The site vice president was knowledgeable of all aspects of the ALARA program, including the Senior Site ALARA Committee activities.

The yearly and 3-year average site dose for 1997-1999 are shown below. The inspector noted that the licensee showed improvement in reducing collective personnel exposures from 1998 to 1999 and that there was continued improvement in the 3-year averages. The licensee calendar year 2000 site dose goal was set at 64 person-rem. The inspector reviewed the basis for this goal and determined that the basis was acceptable. The site goals were monitored by the Senior Site ALARA Committee.

Year	1997	1998	1999
Yearly site dose	251	286	157
3-Year Average site dose	360	303	231
Industry Average BWR dose	205	190	not available

Exposure reduction initiatives were reviewed. These included shielding projects, flushing projects, operational initiatives, decontamination plan, hot spot program, ALARA bonus and budget programs, dose planning effectiveness, cultural enhancements, and chemistry dose reduction initiatives. The inspector determined that the planned exposure reduction initiatives were appropriate to support the 2000 exposure goal.

c. Conclusions

The Senior Site ALARA Committee was actively involved in station dose reduction initiatives. Three-year average station dose has shown a declining trend since 1997. Station management was actively involved in the ALARA program. The station has developed a dose goal for calendar year 2000 of 64 person-rem with an acceptable basis. The planned exposure reduction initiatives were appropriate to support the calendar year 2000 exposure goal.

R2 Status of Radiation Protection and Chemistry Facilities and Equipment

The inspector interviewed selected radiation protection personnel and toured the new access control area. The new access control area provided a good separated traffic flow for entry and exit, with radiation protection personnel positioned to maintain positive control. Installed personnel contamination monitors and small article monitors were calibrated, source checked, and operational as required by station procedures. No problems were identified.

R5 Staff Training and Qualification in Radiation Protection and Chemistry

The inspector interviewed selected radiation protection department staff and reviewed the qualifications of the radiation protection manager, radiological planning supervisor, and radioactive material control/radwaste supervisor. The inspector noted that each individual met the applicable requirements for each position as delineated in ANSI N18.1-1971.

R7 Quality Assurance in Radiation Protection and Chemistry Activities

a. Inspection Scope (83750)

The inspector reviewed the following areas:

- Seven quality surveillances
- Thirteen radiation protection self assessments
- Selected problem evaluation reports

b. Observations and Findings

The inspector reviewed seven quality surveillance reports which were conducted since March of 1999. These surveillances were probing, comprehensive, and provided management with an accurate assessment of radiation protection program elements. Problems identified were appropriately entered into the licensee's corrective action program.

The inspector reviewed 13 radiation protection self assessments conducted since the last inspection. The self assessments were comprehensive and provided management with the appropriate level of insight into the radiation protection program.

The inspector reviewed 31 Problem Evaluation Requests relating to the radiation protection program. The licensee's identification threshold for generating problem evaluation requests was appropriate. Corrective actions were generally appropriate and timely. However, the inspector identified two violations.

Technical Specification 5.4.1.a states, in part, that: Written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Revision 2, Appendix A, February 1978, Section 7.e(1) requires procedures for access control to radiation areas including a radiation work permit system. Plant Procedure Manual Procedure 11.2.7.3, Revision 17, stated, in part, that, Access to each such area (high radiation area) shall be controlled by means of a radiation work permit . . . .

On May 28 and June 6, 1999, the licensee identified equipment operators that entered the drywell (a high-high radiation area) and the reactor building steam tunnel (a high radiation area) for valve lineups while on Radiation Work Permit 99000002, which did not allow access to the above areas.

These examples of a failure to use the appropriate radiation work permit when entering posted high-high and high radiation areas were identified as a violation of Technical Specification 5.4.1.a. This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. These problems are in the licensee's corrective action program as Problem Evaluation Requests 299-1175 and 299-1240 (50-397/200008-01).

10 CFR 20.1802 states, in part, that: The licensee shall control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage. Plant Procedure Manual Procedure 11.2.14.4, Revision 11, stated, in part, that: Positive control shall be exercised over sources at all times in order to prevent inadvertent manipulation and unauthorized use or movement.

On August 18, 1998, the licensee found that the radioactive source locker was unsecured and unattended in the plant support facility, which is located outside the radiologically controlled area.

On March 16, 1999, the licensee found a radioactive source that was unsecured and unattended in the plant support facility, which is located outside the radiologically controlled area.

These two examples of a failure to maintain positive control over radioactive sources were identified as a violation of 10 CFR 20.1802. This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. These problems are in the licensee's corrective action program as Problem Evaluation Requests 298-1046 and 299-0533 (50-397/200008-02).

c. Conclusions

The quality surveillances were probing, comprehensive, and provided management with an accurate assessment of radiation protection program elements. The radiation protection self assessments were comprehensive and provided management with the appropriate level of insight into the radiation protection program. The licensee's identification threshold for generating problem evaluation requests was appropriate. Corrective actions were generally appropriate and timely.

Two examples of a failure to use the appropriate radiation work permit when entering posted high-high and high radiation areas were identified as a violation of Technical Specification 5.4.1.a. Continuous health physics coverage was provided to the operator in the example that involved the high-high radiation area. This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy.

Two examples of a failure to maintain positive control over radioactive sources were identified as a violation of 10 CFR 20.1802. This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy.

R8 Miscellaneous Radiation Protection and Chemistry Issues

10 CFR 20.1501.a.2.ii and iii states, in part, that: Each licensee shall make or cause to be made, surveys that; Are reasonable under the circumstances to evaluate;

Concentrations or quantities of radioactive material; and the potential radiological hazards.

Problem Evaluation Request PER 298-0044 documented a situation in which water was discharged from the radwaste chilled water system to the storm drains outside the radiologically controlled area. Plant Procedure Manual Procedure 12.2.14, Revision 3, stated, in part, that: Liquids from systems in the plant may be batched released provided the liquid being discharged is verified to be nonradioactive. On January 15, 1998, the licensee determined that for approximately one month, the radwaste chiller leaked 1000 gallons to the storm drains outside the radiologically controlled area.

The failure to evaluate the quantity or concentration of radioactive material and potential radiological hazard of liquid prior to discharge was identified as a violation of 10 CFR 20.1501.a. This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. This problem was in the licensee's corrective action program as Problem Evaluation Request 298-0044 (50-397/200008-03).

V. Management Meetings

X1 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at an exit meeting on March 16, 2000. The licensee acknowledged the findings presented. No proprietary information was identified.

Telephone discussions were held on March 29 and April 12, 2000, with Messrs. John Peters, Scott Boynton, and Bob Brownlee of your staff to clarify the inspection findings.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

G. Smith, Plant General Manager and Vice President Generation
J. Peters, Radiological Services Manager
I. Borland, Radiation Protection Manager
S. Oxenford, Operations Manager
R. Torres, Technical Services Manager
D. Atkinson, Engineering Manager
P. Inserra, Licensing Manager
R. Brownlee, Licensing Engineer
C. Nordhaus, Radiological Planning Supervisor
J. Pierce, Radiological Support Supervisor
J. Massey, Quality Engineer
D. Bennett, Chemistry Supervisor

NRC

J. Rodriguez, Resident Inspector
D. Powers, Senior Technical Analyst

INSPECTION PROCEDURE USED

83750	Occupational Radiation Exposure

LIST OF ITEMS OPENED AND CLOSED

Opened and Closed

50-397/200008-01	NCV	Two examples of entering posted high radiation areas on the wrong radiation work permit
50-397/200008-02	NCV	Two examples of a failure to maintain positive control over radioactive sources
50-397/200008-03	NCV	Failure to evaluate the quantity or concentration of radioactive material and potential radiological hazard of liquid prior to discharge

LIST OF DOCUMENTS REVIEWED

Quality Surveillance Reports

299-047 "Section 3.0 Radiation Protection," November 5, 1999

299-021 "Quality Plant / Fuel Savings Dispatch Observations," June 1, 1999

299-019 "Radiation Protection Corrective Action Surveillance," May 18, 1999

299-034 "June Monthly Surveillance Report," July 15, 1999

299-032 "July Monthly Surveillance Report," August 13, 1999

299-052 "Plant Observation Report," January 11, 2000

200-004 "January 2000 Plant Observation Report," February 23, 2000

Radiation Protection Program Self Assessments

SA 99-023 "Radiation Work Permits (RWP)," April 13-15, 1999

SA 99-072 "Respiratory Protection Program," November 5 - December 20, 1999

SA 99-025 "WNP-2 Radiation Protection 1998 Annual Assessment," May 1999

SA 99-011 "RP Program Annual Review, ALARA Program"

SA 99-016 "RP Program Annual Review, Radiological Support Area"

SA 99-075 "Monthly Performance Indicator Self Assessment," July 1999

SA 99-037 "Self Assessment of Calibration Records of Selected Fixed Health Physics Equipment," June 25, 1999

SA 99-033 "Monthly Performance Indicator Self Assessment," April 1999

SA 99-029 "Radiation Protection Department Records Retrieval Self Assessment," May 14, 1999

SA 00-002 "Self Assessment of the Radiation Protection Department Industrial Safety Performance Indicator," February 10, 2000

SA 00-001 "Assessment of the Use of Sticky Pads to Help in Reducing the Number of Speck Contamination at WNP2," January 19, 2000

SA 99-081 "Self Assessment of Radiation Protection Activities During Refuel Outage R-14," February 1, 2000

Procedures

Procedure SWP-RPP-01, “Radiation Protection Program,” Revision 3

Procedure SWP-IRP-02, “Corporate Nuclear Safety Review Board,” Revision 3

Procedure GEN-RPP-01, “ALARA Program Description,” Revision 2

Procedure GEN-RPP-02, “Radiation Work Permit,” Revision 2

Procedure GEN-RPP-04, “Entry Into, Conduct in, and Exit From Radiologically Controlled Areas,” Revision 4

Procedure GEN-RPP-10, “Use of Respiratory Protection Equipment,” Revision 1

Procedure GEN-RPP-11, “Use of the Total Exposure System (TES) for Access Control,” Revision 2

Procedure GEN-RPP-13, “ALARA Committee,” Revision 3

Procedure 11.2.4.5, “Whole-Body Counts and Daily Checks Using the Renaissance Fastscan,” Revision 1

Procedure 11.2.11.3, “Issuance of Respiratory Protection Equipment,” Revision 12

Procedure 11.2.13.1, “Area Radiation and Contamination Surveys,” Revision 9

Procedure 11.2.15.7, “Release of Material from Radiologically Controlled Areas,” Revision 14

Procedure 11.2.24.1, “Health Physics Work Routines,” Revision 20

Procedure 12.2.14, “Batch Release of Nonradioactive Liquid,” Revision 3

Procedure 16.10.1, “Radioactive Liquid Waste Discharge to the River,” Revision 4

Procedure HPI-5.9-R9, “Evaluation of In-vivo Bioassay Results Following Exposure Incident with Indication of Potential Intake”

Procedure HPI-12.70-R7, “RWP and ALARA Planning Processes”

Procedure HPI-15.1-R4, “Inspection and Storage of Respirators and Attachments”