UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-4005

May 6, 2005

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

SUBJECT: COLUMBIA GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 05000397/2005002

Dear Mr. Parrish:

On March 24, 2005, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Columbia Generating Station. The enclosed inspection report documents the inspection findings which were discussed on March 24, 2005, with Mr. Dale Atkinson and other members of your staff.

The inspections examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one NRC and one self-revealing finding. Both of these findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these two findings as noncited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest these findings, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011-4005; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident inspector at the Columbia Generating Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

William B. Jones, Chief
Project Branch E
Division of Reactor Projects

Docket: 50-397
License: NPF-21

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NRC Inspection Report
05000397/2005002

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RIV:SRI:DRP/E	SPE:DRP/E	RI:DRP/E	C:DRS/EB	C:DRS/OB
ZKDunham	VGGaddy	RBCohen	JAClark	ATGody
T -WBJ	N/A	N/A	DAPowers for	/RA/
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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	50-397
License:	NPF-21
Report:	05000397/2005002
Licensee:	Energy Northwest
Facility:	Columbia Generating Station
Location:	Richland, Washington
Dates:	January 1 through March 24, 2005
Inspectors:	Z. Dunham, Senior Resident Inspector, Project Branch E, DRP R. Cohen, Resident Inspector, Project Branch E, DRP T. Jackson, Senior Resident Inspector, Project Branch E, DRP J. Drake, Operations Engineer T. McKernon, Senior Operations Engineer P. Gage, Senior Operations Engineer P. Elkmann, Emergency Preparedness Inspector
Approved By:	W. B. Jones, Chief, Project Branch E, Division of Reactor Projects

ATTACHMENT: Supplemental Information

CONTENTS

SUMMARY OF FINDINGS

IR05000397/2005002; 1/1/2005 - 3/24/2005; Columbia Generating Station. Maintenance Effectiveness.

The report covered a 13-week period of inspection by resident inspectors, an emergency preparedness inspector, and operator engineering inspectors. Two Green noncited violations were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green. A Green NRC identified noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified for Energy Northwest's failure to promptly identify cracked emergency core cooling system pump motor oil reservoir drain plugs. The initial condition was identified by Energy Northwest and entered into the corrective action program, however, the subsequent findings were not documented and evaluated through the corrective action program and the extent of the condition determined to assess the impact on other safety-related equipment. This finding has problem identification and resolution crosscutting aspects for the failure of Energy Northwest's engineering staff to appropriately implement the corrective action process to identify and correct the same condition on other emergency core cooling systems pumps.

The finding was more than minor because it was an equipment performance issue which affected the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was considered to be of very low safety significance because the cracked pump motor oil reservoir drain plug did not result in the loss of a safety function of a single train for greater than its Technical Specification allowed outage time. Energy Northwest took immediate corrective actions to replace all of the affected drain plugs (Section 1R12.1).

- Green. A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified for a failure of Energy Northwest to promptly identify that the Emergency Core Cooling System pump motor oil reservoir drain plug o-rings had become hardened. Hardened o-rings were considered to be an equipment deficiency that had led to several pump motor drain plug leaks and had been discussed in General Electric Safety Information Letter 484. The finding was identified to have

problem identification and resolution crosscutting aspects for the failure to identify the cause of the historical emergency core cooling system pump motor oil leaks prevented appropriate corrective actions from being implemented to ensure the reliability and capability of the affected pumps.

The finding was more than minor because it was an equipment performance issue which affected the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was considered to be of very low safety significance because the finding was a qualification deficiency which was confirmed to not result in a loss of function per Generic Letter 91-18. Energy Northwest took immediate corrective actions to replace all of the affected drain plugs o-rings (Section 1R12.2).

B. Licensee Identified Violations

Violations of very low safety significance which were identified by Energy Northwest have been reviewed by the inspectors. Corrective actions taken or planned by Energy Northwest have been entered into their corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status:

The inspection period began with Columbia Generating Station at 100 percent power. The plant was maintained at essentially 100 percent power for the entire inspection period except for brief reductions in power to facilitate plant testing and maintenance.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignments (71111.04)

.1 Quarterly Equipment Alignments

a. Inspection Scope

The inspectors completed partial system walkdowns of the three systems listed below. The inspectors reviewed system drawings, the Final Safety Analysis Report (FSAR), Technical Specifications, and operating procedures to establish the proper equipment alignment to ensure system operability. The walkdowns consisted of verifying the mechanical and electrical alignments for each of these systems.

- High Pressure Core Spray: On February 14, 2005, the inspectors walked down the mechanical and electrical alignment of the high pressure core spray system while the reactor core isolation system was unavailable due to scheduled maintenance. The inspectors reviewed the alignment of critical system components using Procedure SOP-HPCS-STBY, "Placing HPCS [high pressure core spray system] in Standby Status," Revision 1, and Flow Diagram M520, "High Pressure Core Spray," Revision 91.

- SM-8 (4160 VAC) Breakers and Associated Electrical Distribution: On February 16, 2005, the inspectors walked down the electrical alignment of the SM-8 breakers and associated electrical distribution. The inspectors reviewed the alignment of critical components using Procedure 10.25.13, "Westinghouse Medium Voltage Circuit Breakers," Revision 25, and Electrical Diagram E-502, "Main One Line Diagram," Revision 52.

- Hydraulic Control Units: On March 21, 2005, the inspectors performed a partial alignment check of valve positions for approximately 100 hydraulic control units to verify that the units were properly aligned to provide for normal control rod movement and for operation of the scram function if required. The inspectors utilized Flow Diagram M528-1, "Control Rod Drive System," Revision 73, to establish the alignment of the critical components.

b. Findings

No findings of significance were identified.

.2 Semi-Annual System Alignment

a. Inspection Scope

During the inspection period, the inspectors performed a system walkdown of the accessible piping and components of the low pressure core spray system. The inspectors utilized design documentation, operations procedures, abnormal procedures, and system drawings to establish the system lineup. The following attributes were examined:

- Valve position
- Electrical breaker alignment
- Seismic and piping restraints
- Housekeeping and materiel condition
- Presence of oil and water leaks
- Support system configuration and availability
- Correct labeling

Additionally, the inspectors conducted a review of open work orders, maintenance work requests, outstanding design issues, temporary modifications, and operator work arounds to assess any impact on system operability and reliability. The inspectors also conducted a review of Energy Northwest's corrective action program to verify that equipment alignment issues were identified and documented at an appropriate threshold.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors performed walkdowns of six fire protection areas to verify operational status and material condition of fire detection and mitigation systems, passive fire barriers, and fire suppression equipment. The inspectors reviewed Energy Northwest's implementation of controls for combustible materials and ignition sources in selected fire

protection zones. The inspectors compared observed plant conditions against descriptions and commitments in the FSAR, Section 9.5.1, "Fire Protection System," and Appendix F, "Fire Protection Evaluation." The fire areas inspected were:

- Fire Area R-4, Residual Heat Removal Pump B Room, January 25, 2005
- Fire Area R-3, High Pressure Core Spray, February 14, 2005
- Fire Area RC-1, General Equipment Area, February 16, 2005
- Fire Area DG-1, Diesel Generator Room 1A, March 10, 2005
- Fire Area DG-10, Deluge Valve Equipment Room, March 10, 2005
- Fire Area M-27, E-IR-H22/P027 Instrument Rack Room, March 21, 2005

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

.1 Licensed Operator Requalification

a. Inspection Scope

On February 3, 2005, the inspectors observed one licensed operator requalification training exam. The inspectors evaluated crew performance in terms of formality of communication, prioritization of actions, annunciator response, and implementation of procedures. The inspectors also observed Energy Northwest's evaluation of the crew's performance to ensure that performance deficiencies were appropriately discussed and evaluated. Simulator fidelity was also evaluated by the inspectors.

b. Findings

No findings of significance were identified.

.2 Biennial Inspection

a. Inspection Scope

The inspectors evaluated licensed operator performance in mitigating the consequences of events and Energy Northwest's requalification program personnel in the administration of the biennial requalification examination. The inspection focused on: (1) a review of the incorporation of facility operating history and industry events into the requalification program and the use of the licensee training feedback system, (2) the development, administration, and grading of requalification written examinations and operating tests, (3) the effectiveness of the licensee's remedial training program,

(4) conformance with operator license conditions, and (5) conformance with simulator requirements specified in 10 CFR 55.46, “Simulation Facilities.” In addition, based on the poor performance of applicants during a recent initial licensing examination, the operators were specifically evaluated in the areas of Technical Specification knowledge and application, control board equipment operation and systems knowledge of feedwater control, electrical plant bus alignment, and implementation of immediate actions.

Operator performance since the last requalification program evaluation was assessed to determine if performance deficiencies have been addressed through the requalification training program. The inspectors reviewed Energy Northwest’s process for revising and maintaining an up-to-date licensed operator continuing training program. The requalification program was reviewed, including the use of feedback from plant events and industry experience information. The inspectors interviewed members of the training department, training department managers, and selected members of an operating crew to assess the responsiveness of the licensed operator requalification program.

The inspectors reviewed a sample of the written examinations and operating tests given during the current requalification cycle. Examination security measures and procedures were evaluated for compliance with 10 CFR 55.49, “Integration of Examinations and Tests”. Energy Northwest’s sample plan for the written examinations was evaluated for compliance with 10 CFR 55.59, “Requalification” and NUREG-1021, “Operator Licensing Examination Standards for Power Reactors,” as referenced in the facility requalification program procedures. In addition, the inspectors: (1) reviewed the number of applicants and pass/fail results of the written examinations, individual operating tests, and simulator operating tests; (2) interviewed 12 personnel (6 operators, 4 instructors/evaluators, and 2 training supervisors) regarding the policies and practices for administering examinations; (3) observed the administration of four dynamic simulator scenarios to two requalification crews by facility evaluators; (4) observed five facility evaluators administer in-plant job performance measures; and (5) observed three facility evaluators administer three simulator job performance measures in the control room simulator in a dynamic mode. The inspectors noted that there was only one alternate path job performance measure per week and that it was always given in the simulator. Since this practice reduced the operating tests discrimination capability while still meeting minimum NRC requirements, the inspectors focused on the overall effectiveness of using the operating tests to adequately discriminate acceptable performance.

The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the last requalification examinations and the training planned for the current examination cycle to ensure that identified licensed operator or crew performance weaknesses during training and plant operations were addressed.

Remedial training for examination failures was reviewed for compliance with facility procedures and responsiveness to address areas failed. The inspectors reviewed the remediation documentation for individuals and crews, which involved job performance measures and scenario examination failures during the 2-year program cycle. Only one individual failed a portion of the biennial examination. The inspectors reviewed the remediation process for the individual, who failed the written examination. The results of the examinations were assessed to determine Energy Northwest's appraisal of operator performance and the feedback of performance analysis to the requalification training program.

The inspectors reviewed a random sample of the medical and proficiency records for licensed operators and evaluated them for compliance with 10 CFR 55.21 and 55.53 as referenced in the facility procedures.

The inspectors assessed the adequacy of Energy Northwest's simulation facility for use in operator licensing examinations and for satisfying experience requirements. The inspectors also assessed the effectiveness of Energy Northwest's process for continued assurance of simulator fidelity with regard to identifying, reporting, correcting, and resolving simulator discrepancies via a corrective action program. The inspectors assessed the Columbia Generating Station plant-referenced simulators for compliance with 10 CFR 55.46 using Baseline Inspection Procedure IP-71111.11B (Section 03.11). The inspectors assessed the adequacy of Energy Northwest's simulation facility (simulator) for use in operator licensing examinations. The facility conforms to the requirements of 10 CFR 55.46(c)(1), "Simulation Facilities."

The inspectors reviewed a sample of simulator performance test records (i.e., transient tests, surveillance tests, malfunction tests, and normal operations tests), simulator discrepancy reports, and processes for ensuring simulator fidelity commensurate with 10 CFR 55.46. Energy Northwest had committed to implementing ANSI/ANS-3.5 1998. The simulator currently does not meet the standard for some parameters of the steady state and transient performance. Energy Northwest identified this condition in Condition Report CR 2-04-06473. The inspectors assessment of the simulator performance testing indicated that this issue was not significant because no specific scope or fidelity issues were identified that affected the requirements of 10 CFR 55.45 or 10 CFR 55.59. Nevertheless, the performance testing did not meet Energy Northwest's commitments to implement performance testing in accordance with ANSI/ANS-3.5 1998. The inspectors also interviewed personnel involved in Energy Northwest's simulator configuration control program as part of this review.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the four equipment issues listed below to evaluate whether Energy Northwest's assessment of each of the issues was appropriate under their maintenance rule program. The inspectors evaluated whether deficient maintenance practices had contributed or caused the equipment deficiency, whether the extent of condition was adequately evaluated, and whether appropriate corrective actions had been established commensurate with the safety significance of the equipment issue. Where appropriate, the inspectors also evaluated Energy Northwest's assessment of the maintenance issue's impact on availability and reliability of the affected system.

- PER 205-0082, WMA-FN-54B heaters failed to start during the performance of Procedure OSP-WMA-B704, February 22, 2005

- PER 205-0102, During the performance of Surveillance Test ISP-SEIS-X301 the as found setpoints for all three accelerometers in the trigger were out of specification high, March 4, 2005

- PER 205-0151, Electrical failure of motor brake while lowering new fuel bundle into the fuel prep machine, March 17, 2005

- PER 205-0086, Lower motor sightglass drain connection is leaking oil about 5 drops per minute, February 9, 2005

b. Findings

.1 Emergency Core Cooling Pump Motor Oil Reservoir Drain Plug

Introduction. A Green NRC identified noncited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified for Energy Northwest's failure to promptly identify and correct cracked emergency core cooling system (ECCS) pump motor oil reservoir drain plugs. The initial condition was identified by Energy Northwest and entered into the corrective action program, however, the subsequent findings were not evaluated through the corrective action program and the extent of the condition determined to assess the impact on other safety-related equipment.

Description. On February 8, 2005, during a quarterly surveillance test on the Division 2 residual heat removal (RHR) Pump, RHR-P-2B, the motor developed an oil leak from the lower oil reservoir drain plug. Energy Northwest measured the leak at five drops per minute while the pump was running. The pump was secured and declared inoperable. After securing the pump, no active oil leak was detected from the drain plug. However,

a small puddle of oil on the floor under the lower oil reservoir was discovered and the oil level in the lower oil sight glass was below the "standstill" mark. Energy Northwest documented this issue in CR 2-05-00730. Corrective actions included tightening the drain plug to stop the leak. However, when the plug was tightened the maintenance technician identified that the plug had either stripped its threads or the plug material itself had started to fail. The plug was replaced on February 9, 2005. The inspectors noted that later that day Energy Northwest's engineering staff identified a substantial crack in the drain plug which had been replaced.

On February 22, 2005, the inspectors questioned Energy Northwest regarding the evaluation of the cracked plug and the potential for a common mode failure of other ECCS pumps. The inspectors noted that plant management did not have any knowledge of the cracked plug. The inspectors found the extent of the condition (cracked drain plug) was not documented in the corrective action program and corrective actions had not been taken to evaluate the other ECCS pump motor bearing oil reservoirs with cracked drain plugs. The crack was caused by over tightening of the drain plug to correct oil leaks, and had generic implications for the other ECCS pump motor bearing oil reservoirs. The inspectors discussed this issue with Energy Northwest management. Problem Evaluation Report (PER) 205-0217 was initiated noting that Energy Northwest had not adequately addressed the extent of condition of other ECCS pump motor oil plugs. Subsequently, Energy Northwest sequentially removed each of the ECCS pumps from service and replaced each pump's motor upper and lower oil reservoir drain plugs and o-rings.

Energy Northwest performed a failure analysis of the ECCS pump motor oil plugs on March 4, 2005. The analysis report documented a circumferential crack on the RHR Pump RHR-P-2B lower reservoir oil plug. The drain plugs removed from the other ECCS pumps also exhibited varying degrees of cracking and other minor indications. In particular, the drain plug from Pump RHR-P-2C upper oil reservoir exhibited an 180 degree crack. Failure analysis showed that the cause of the plug crack was tensile overload with the likely source of the applied load from over tightening of the plug. The crack initiated at a combined stress discontinuity caused by the partial thread root and a thru-hole. The stress riser and voids within the zinc die casting resulted in a condition that was highly susceptible to cracking from over tightening. One of the ten plugs examined displayed two to three load cycles on the fracture surface. This was indicative of repeated tightening.

Analysis. The inspectors determined that the failure to promptly identify and correct a significant condition adverse to quality associated with ECCS motor reservoir oil plugs was a performance deficiency that should have been evaluated in accordance with Energy Northwest's corrective action program. This issue has problem identification

and resolution crosscutting aspects for the failure of Energy Northwest's engineering staff to appropriately implement the corrective action process to identify and correct the cracked oil reservoir drain plugs on ECCS pump motors.

The inspectors utilized NRC Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," to determine that the finding was more than minor because it was an equipment performance issue which affected the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, if left uncorrected, the continued tightening of the ECCS pump motor drain plugs in response to oil leaks could result in eventual failure of the plugs. A failed plug would render the associated pump inoperable and increase the unavailability time for the pump to correct the condition. The inspectors evaluated the finding in accordance with Manual Chapter 0609, Appendix A, "Significance Determination Process," Phase 1 Worksheet. The finding was determined to be of very low safety significance (Green) because the finding did not result in the loss of a safety function of a single train for greater than its Technical Specification allowed outage time.

Enforcement. Criterion XVI of 10 CFR Part 50 Appendix B, "Corrective Actions," states, in part, that measures shall be established to assure that the cause of the condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to the appropriate levels of management. Contrary to this requirement, from February 9 to February 23, 2005, the RHR-P-2B pump motor lower oil reservoir cracked drain plug, a significant condition adverse to quality, was not documented in Energy Northwest's corrective action program and evaluated for the extent of condition on other ECCS pump motors. This resulted in the failure to promptly identify that other ECCS pump motor oil reservoir drain plugs were also degraded. This was an NRC identified violation of Criterion XVI. This violation is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-397/05-02-01, Failure to Document and Report a Significant Condition Adverse to Quality). Energy Northwest documented the issue in CR 2-05-01018. Immediate corrective actions included replacing all of the ECCS pump motor upper and lower oil reservoir drain plugs with new plugs.

.2 Hardened ECCS Pump Motor Bearing Oil Plug O-Rings

Introduction. A Green self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified for Energy Northwest's failure to identify that hardened o-rings had contributed to historical ECCS motor oil reservoir drain plug leaks. This was considered to be a failure to promptly identify and correct a condition adverse to quality.

Description. The inspectors reviewed Energy Northwest's failure analysis of the ECCS pump motor oil drain plugs and the associated o-rings following the replacement of the plugs and o-rings on February 27. The inspectors noted in the failure analysis report dated March 4, 2005, that the o-rings displayed evidence of aging supported by the increase in durometer hardness and although no surface cracking had occurred, that the sealing capability had been reduced.

Supporting the conclusion that the sealing capability of the o-rings had been reduced was the Energy Northwest staff's documented review of ECCS pump motor oil leakage, dated March 8, 2005, which noted the following oil leakage history:

- RHR-P-2B, lower drain plug oil leakage, February 8, 2005
- RHR-P-2C, lower drain plug oil leakage, January 14, 2005
- RHR-P-2C, lower drain plug oil leakage, December 17, 2004
- RHR-P-2B, upper drain plug oil leakage, March 9, 2003
- RHR-P-2C, upper drain plug leakage, December 1, 2000
- HPCS-P-1, lower drain plug leakage, July 27, 1999

General Electric SIL 484, dated April 21, 1994, Section 5, recommended that, "Motor drain plug o-ring and sight glass o-rings should be replaced." This SIL was documented in Energy Northwest's corrective action program in PER 201-1611. The SIL stated in part that typically oil reservoir plugs have o-ring seals made of low nitrile-buna material. Oil and oil operating temperature eventually degrade this material, potentially reducing the effectiveness of the seals. Although GE motors are qualified for post-accident conditions, engineering studies have shown that high radiation and the typical 100 day-elevated temperature operating condition may accelerate the degradation of low nitrile buna material seals and lead to an oil leak. As a recommended action, GE Nuclear Energy recommended that BWR owners replace the low nitrile buna o-ring with medium nitrile buna-N o-rings containing at least 27 percent nitrile to improve seal reliability and increase the life of the seals. The o-rings should be replaced every other oil change.

Contrary to this recommendation, the ECCS pump motor oil drain plug o-rings were not replaced at a periodic frequency and were not replaced with the recommended medium nitrile buna-N o-rings with the exception of the o-rings associated with RHR-P-2C motor oil drain plugs which were replaced in 1998 during a pump motor rebuild following a room flooding event. Problem Evaluation Request 205-0128, described a condition where Energy Northwest did not follow the recommendations of GE SIL 484 for replacement of motor drain plug o-rings. Failure to replace the o-rings per the GE SIL recommendation resulted in hardening of the o-rings.

Procedure SWP-CAP-01 Corrective Action Program, Revision 8, defined, in part, a Condition Adverse to Quality as an all inclusive term used in reference to a deficiency.

A condition adverse to quality must be reported to management and corrected and warrants determination of the cause and the corrective action. The hardened o-rings was a material deficiency which degraded their capability to provide an adequate seal under all operating conditions.

Analysis. The inspectors determined that Energy Northwest's failure to promptly identify that the ECCS pump motor oil reservoir plug o-rings had become hardened and to adequately assess the GE SIL recommendations to periodically replace the o-rings with a more capable material to be a performance deficiency warranting a significance evaluation. The finding was also identified to have problem identification and resolution crosscutting aspects for the failure to identify the cause of a condition adverse to quality associated with historical ECCS pump motor drain plug oil leakage.

The inspectors determined that the finding was more than minor because it was an equipment performance issue which affected the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to identify the cause of the ECCS pump motor oil leaks prevented appropriate corrective actions from being implemented to ensure the reliability and capability of the affected pumps. The inspectors evaluated the finding in accordance with Manual Chapter 0609, Appendix A, "Significance Determination Process," Phase 1 Worksheet. The finding screened as very low risk significance (Green) because the finding was a qualification deficiency which was confirmed to not result in a loss of function per Generic Letter 91-18. Evaluation.

Enforcement. Criterion XVI of 10 CFR Part 50, Appendix B, "Corrective Actions," required in part that measures shall be established to assure that conditions adverse to quality such as deficiencies are promptly identified and corrected. Contrary to this requirement, the history of noted oil leaks on the ECCS pump motor oil reservoir oil plugs in conjunction with the recommendations of GE SIL 484 were prior opportunities for Energy Northwest to identify that the o-rings had become degraded and to take appropriate corrective actions. This finding was considered to be a self-revealing violation. This violation is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-397/05-02-02, Failure to Promptly Identify the Cause of ECCS Pump Motor Oil Leaks). Energy Northwest documented the issue in PER 205-0128. Immediate corrective actions included replacing all of the ECCS pump motor upper and lower oil reservoir drain plugs o-rings.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors selected three samples of planned and emergent maintenance tasks for evaluation. The evaluation consisted of reviewing Energy Northwest's assessment of plant risk for the activity, risk management and review of compensatory measures, where appropriate, and reviewing plant status to ensure that other equipment deficiencies did not adversely impact the planned risk assessment.

- Standby Service Water 'A' Train Flow Balance; January 25, 2005
- High Presuure Core Spray outage to repair motor oil leak and replace upper motor air deflector; March 15, 2005
- Downpower to sixty percent power to perform trouble shooting and repair Valve MS-V-6B Level Control Valve, Rod Exercise, Control Rod Drive Hydraulic Control Unit Directional Control Valve replacement and Turbine Generator and Bypass Valve Tests, MS-TCV-116A/C; February 11, 2005

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions and Events (71111.14)

t. Inspection Scope

On February 11, 2005, the inspectors observed a planned reduction in power to sixty percent to facilitate maintenance on a main steam temperature control valve and a header drain level control valve. The inspectors observed the shift pre-task brief for the reduction in power, evaluated command and control in the control room during key evolutions, and evaluated control room communications using the stations procedures and instructions. The inspectors also evaluated the impact of the planned work on control room operations.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed five operability evaluations to evaluate Energy Northwest's assessment of operability for potentially degraded or nonconforming equipment performance. The inspectors reviewed the FSAR, Technical Specifications, applicable system drawings and design specifications, and associated corrective action documents to determine if Energy Northwest had appropriately evaluated operability and system performance.

- CR 2-05-00226; Small oil leak on the lower bearing reservoir drain plug for RHR-M-P/2C; January 18, 2005
- CR 2-05-00306; Surface etching and scoring on suction/discharge valve discs and seats in the pump head (Standby Liquid Control), found a piece of wire in the valve spring; January 19, 2005
- CR 2-04-06867; Questions were raised regarding the addition of platinum to station batteries; January 24, 2005
- CR 2-05-00917; During the performance of ISP-SEIS-X301 the as found set points for all three accelerometers in the trigger were out of specification high, February 17, 2005
- CR 2-05-01171; 200 to 300 drops per minute leak from flanged connection housing HPCS-RO-6; March 4, 2005

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors observed or completed an in-office review of five postmaintenance tests. The inspectors evaluated the scope of the maintenance activity, reviewed design basis information and Technical Specifications to verify that each test adequately demonstrated equipment operability. The inspection samples included:

- Work Order (WO) 01080344; Reactor Core Isolation Cooling Maintenance Outage; January 18, 2005

- WO 01088540; Replacement of WOA-MS-54A; February 22, 2005
- WO 01094196; Replacement of RHR-M/P-2A Upper and Lower Oil Reservoir Drain Plugs; February 27, 2005
- WO 01088825; Replacement of MS-LIS-24C; February 24, 2005
- WO 01091970; Replacement of SW-FE-35A; March 3, 2005

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors observed Energy Northwest conduct new fuel receipt inspections and movements from March 14 through 18, 2005. The inspectors verified that foreign material exclusions controls were established and met for movement of new fuel around and in the spent fuel pool. The inspectors also verified that Energy Northwest performed the appropriate new fuel receipt inspections in accordance with plant procedures.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed the performance and/or reviewed the results of the five surveillance tests listed below. One of the samples included an in-service surveillance test activity of a risk significant component. The inspectors reviewed Technical Specification, Final Safety Analysis Report, and applicable Energy Northwest procedures to determine if the surveillance tests demonstrated that the tested components were capable of performing their intended design functions. Additionally, the inspectors evaluated significant test attributes such as potential preconditioning, clear acceptance criteria, accuracy and range of test equipment, procedure adherence, and completion and acceptability of test data.

- ISP-SEIS-X301; Triaxial Time History Accelerograph Channel Calibration; January 27, 2005
- ISP-MS-Q929; Main Steam Line HI Flow Channel C - CFT/CC; February 23, 2005
- OSP-HPCS/IST-Q701; HPCS System Operability Test; March 7, 2005
- OSP-WMA-B703; Control Room Emergency Filtration Heater A Operability; March 8, 2005
- ISP-LPCS/RHR-X301; ECCS-LPCI (A) and LPCS Pump Discharge Flow (Min Flow); March 9, 2005

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspector performed in-office reviews of:

- Revision 39 to the Columbia Generating Station Emergency Plan, submitted November 22, 2004
- Revision 40 to the Columbia Generating Station Emergency Plan, submitted February 24, 2005
- Revision 13 to procedure 13.1.1A, “Classifying the Emergency - Technical Bases” [emergency action levels], submitted November 22, 2004

Emergency Plan, Revision 39, revised the emergency plan to implement additional required on-shift emergency response personnel and to revise the off-hours goal for staffing licensee emergence response facilities from 60 minutes to 90 minutes. These changes were approved by the NRC in a Safety Evaluation Report dated August 31, 2004.

Emergency Plan Revision 40:

- Made minor administrative, title, and figure corrections
- Revised the description of the Franklin County, Washington, Emergency Worker Assistance Centers to the current consolidated facility
- Implemented the on-shift position of Incident Advisor
- Revised five Joint Information Center positions from the Support Category to the Augmenting Category (e.g. these positions now carry emergency response pagers for immediate notification)

Procedure 13.1.1A, Revision 13, added additional details and confirming indications to Emergency Action Levels 1.2.U.1, 2.2.A.1, and 2.2.S.1.

These revisions were compared to their previous revisions, to the criteria of Nuclear Energy Institute 99-01, "Methodology for Development of Emergency Action Levels," Revision 2, and to the requirements of 10 CFR 50.47(b) and 50.54(q) to determine if the licensee adequately implemented the emergency plan change process described in 10 CFR 50.54(q).

The inspector completed three samples during the inspection.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed one emergency planning drill this period. The drill was conducted on January 11, 2005. The inspectors observed the drill from the control room simulator, the emergency operating facility and from the technical support center. The inspectors also reviewed emergency plan implementing procedures and the site emergency plan to determine the adequacy of Energy Northwest's emergency action level declarations and response to the simulated emergencies. Additionally, the inspectors reviewed the completed emergency action level declarations and protective action recommendations. Lastly, the inspectors reviewed Energy Northwest's evaluation of the drill to ensure that any noted performance deficiencies associated with classification, notification, and protective action recommendation development were accurately characterized.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution

.1 Annual Sample

a. Inspection Scope

During the inspection period the inspectors reviewed Energy Northwest's identification and documentation of safety related battery issues for 2004. The inspectors noted that Energy Northwest had identified an adverse trend in low battery cell individual cell voltages in batteries E-B1-1, E-B1-2, and E-B2-1. The inspectors verified that Energy Northwest documented all instances of low individual cell voltage batteries from 2003 through 2004. The inspectors verified that for each instance that the battery cell condition was accurately documented and the evaluation of the issue was adequate. Additionally, the inspectors reviewed corrective action documentation related to the addition of platinum to certain battery cells to correct the low individual cell voltage issues. The inspectors evaluated the appropriateness of adding platinum to correct the noted deficiencies and to determine if Energy Northwest had evaluated all potential contributors to the noted trend.

b. Findings and Observations

No findings or observations were identified.

.2 Cross-References to Problem Identification and Resolution Findings Documented Elsewhere

A finding with problem identification and resolution crosscutting aspects was identified for Energy Northwest engineering staff's failure to adequately implement the corrective actions program to identify and correct ECCS pump motors oil drain plug failures (Section 1R12.1).

A finding with problem identification and resolution crosscutting aspects was identified for the failure to identify the cause of a condition adverse to quality associated with historical ECCS pump motor drain plug oil leakage (Section 1R12.2).

4OA6 Meetings, Including Exit

Resident Inspector Routine Exit Summary

The inspector conducted a telephonic exit interview on April 4, 2005, to present the inspection results to Mr. C. Moore, Supervisor, Emergency Preparedness, who acknowledged the findings. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On March 24, 2005, the resident inspectors presented the inspection results to Mr. D. Atkinson, and other members of Energy Northwest management. Energy Northwest management acknowledged the inspection findings.

The inspectors asked Energy Northwest whether any materials examined during the inspection should be considered proprietary. It was determined that no proprietary information had been presented to the inspectors.

4OA7 Energy Northwest Identified Violations

The following violation of very low risk significance (Green) was identified by Energy Northwest and is a violation of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a noncited violation.

Energy Northwest identified a violation of 10 CFR 50.47(b)(4). During the conduct of Procedure ISP-SEIS-X301, “Triaxial Time History Accelerograph Channel Calibration,” Revision 4, Energy Northwest identified that the trip setpoint for all three accelerometers of the Seismic Trigger, SEIS-ST-1, were set at .05g ground acceleration versus the procedurally required setpoint of .01g. The seismic trigger provided for actuation of both the time-history recorders and the main control room annunciator “Minimum Seismic Earthquake Exceeded.” Energy Northwest staff also determined that the seismic trigger had been out of calibration since April 7, 2003, when it had last been calibrated. Emergency Plan Implementing Procedure 13.1.1, Emergency Action Level 9.4.U.1, provided that an Unusual Event be declared if the Minimum Seismic Earthquake alarm actuated and the control room receives reports from plant personnel who have felt an earthquake. From April 7, 2003, to February 17, 2005, SEIS-ST-1 would not actuate the Minimum Seismic Earthquake alarm at the required trip setpoint of .01g. During this time, a seismic event could have occurred resulting in ground acceleration greater than .01g but less than .05g with associated reports from individuals on site that a seismic event had occurred. This would have resulted in an Unusual Event not being declared when required. This is contrary to the requirements of 10 CFR 50.47(b)(4) which provided in part that a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the licensee.

A miscalibrated seismic trigger would not have provided for proper implementation of Energy Northwest's standard emergency classification and action level scheme during a seismic event. This NCV is considered to be of very low risk significance because although the finding was associated with a risk significant planning standard, it would have only resulted in the failure to declare a Notification of an Unusual Event. This is consistent with the Green findings examples listed in MC 0609, Appendix B, "Emergency Preparedness SDP," Section 4.4. Energy Northwest documented this issue in PER 205-0102.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Energy Northwest

J. Parrish, Chief Executive Officer
D. Atkinson, Vice President, Nuclear Generation
D. Coleman, Manager, Performance Assessment and Regulatory Programs
T. Lynch, Plant General Manager
W. Oxenford, Vice President, Technical Services
S. Belcher, Manager, Operations
I. Borland, Manager, Radiological Services
A. Khanpour, Manager, Engineering
C. Moore, Supervisor, Emergency Preparedness

NRC Personnel

Z. Dunham, Senior Resident Inspector
R. Cohen, Resident Inspector

ITEMS OPENED AND CLOSED

Items Opened, Closed, and Discussed During this Inspection

Opened

None

Opened and Closed

50-397/05-02-01	NCV	Failure to Document and Report a Significant Condition Adverse to Quality (Section 1R12.1)
50-397/05-05-02	NCV	Failure to Promptly Identify the Cause of ECCS Pump Motor Oil Leaks (Section 1R12.2)

Closed

None

Discussed

None

PARTIAL LIST OF DOCUMENTS REVIEWED

Procedures

PPM 1.5.11; Maintenance Rule Program; Revision 6

TI 4.22; Maintenance Rule Program; June 19, 2001

OSP-RHR/IST-Q703; RHR Loop B Operability Test; Revision 18

SOP-HPCS-STBY; Placing HPCS in Standby Status; Revision

SWP-CAP-01; Corrective Action Program; Revision 8

SWP-CAP-02; Cause Determination; Revision 2

SWP-CAP-03; Operating Experience Program; Revision 3

SWP-CAP-05; Corrective Action Review Board (CARB); Revision 2

PPI 10.25.13; Westinghouse Medium Voltage Curcuit Breakers; Revision 25

ISP-SEIS-X301; Triaxial Time History Accelerograph Channel Calibration; Revision 4

OSP-WMA-B703; Control Room Emergency Filtration Heater A Operability; Revision 2

ISP-LPCS/RHR-X301; ECCS-LPCI (A) and LPCS Pump Discharge Flow (Min Flow) - CC; Revision 0

OSP-HPCS/IST-Q701; HPCS System Operability Test; Revision 22

ISP-MS-Q929; Main Steam Line HI Flow Channel C - CFT/CC; Revision 5

OSP-LPCS-M102; LPCS Valve Lineup; Revision 0

ESP- B11-Q101; Quarterly Battery Testing 125 VDC E-B1-1; Revision 6

PPM 10.25.190; Equalizing Station Batteries; Revision 0

PPM 13.1.1; Classifying the Emergency; Revision 33

Work Orders / Work Requests

WO 01091125 WO 01080344 WO 01079036 WO 01053672 WO 01088825

WO 01091970 WO 01088540

Drawings

M520; Flow Diagram HPCS and LPCS Systems; Revision 91

E502; Main One Line Diagram; Revision 52

PERs / Condition Reports

PER 205-0013	PER 205-0046	CR 2-04-00016	PER 205-0082
PER 205-0102	PER 205-00151	PER 205-0086	CR 2-05-00730
CR 2-05-01018	PER 205-0128	CR 2-04-06917	CR 2-05-00226
PER 201-1611	CR 2-05-00306	CR 2-05-00917	CR 2-05-01649
PER 205-0045	PER 205-0082	PER 205-0086	CR 2-05-01020
PER 205-0117	CR 2-04-06867	CR 2-05-01241	CR 2-05-00960
CR 2-05-01171	CR 2-05-01032	PER 205-0122	CR 2-05-00414

Miscellaneous

LPCS System Health Report

Design Specification for Division 300 Section 316 Low Pressure Core Spray System; Revision 5

Columbia Generating Station Maintenance Rule Scoping Matrix, October 30, 2003

NUMARC 93-01, “Industry Guideline for Monitoring the Effectiveness at Nuclear Power Plants, Revision 2

General Electric Service Information letter 484, April 24, 1994

IEEE 450-1975; IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations

IEEE 450-1987; IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations

Vendor Manual; Safety, Storage, Installation, Operation and Maintenance Manual for Heritage Series Flooded Lead-Acid Battery Systems

AR 3673; Add Platinum Tablets to High Float Voltage Cells

5059SCREEN-05-0042

Drill, Exercise, and Actual Events Opportunity Evaluation; Team A Drill EP00251, January 11, 2005

2005 Team A Drill Report; January 11, 2005