



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-4005**

January 30, 2004

Mr. J. V. Parrish  
Chief Executive Officer  
Energy Northwest  
P.O. Box 968; MD 1023  
Richland, Washington 99352-0968

**SUBJECT: COLUMBIA GENERATING STATION - NRC INTEGRATED INSPECTION  
REPORT 05000397/2003007**

Dear Mr. Parrish:

On December 31, 2003, the NRC completed an inspection at your Columbia Generating Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on December 22, 2003, with Mr. Oxenford 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.

Based on the results of this inspection, the NRC has identified one issue that was evaluated under the risk significance determination process as having very low safety significance (Green). This finding was determined to be a violation of NRC requirements, however, because it was of very low safety significance and because it was entered into your corrective action program, the NRC is treating the issue as a noncited violation, in accordance with Section V1.A.1 of the NRC's Enforcement Policy. If you contest this noncited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the U.S. 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 76011-4005; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident inspector at the Columbia Generating Station.

During this period, the inspectors completed trial Inspection Procedure 71111.HS, "Heat Sink Performance - Pilot," dated May 6, 2003, at your facility. The results for this inspection can be found in Section 71111.07 of the enclosed report. The trial inspection procedure was performed to help the NRC assess the general effectiveness of the new procedure.

In accordance with 10 CFR 2.790 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

Enclosure:  
NRC Inspection Report  
05000397/2003007

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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 50-397  
License: NPF-21  
Report: 05000397/2003007  
Licensee: Energy Northwest  
Facility: Columbia Generating Station  
Location: Richland, Washington  
Dates: October 5 through December 31, 2003  
Inspectors: G. D. Replogle, Senior Resident Inspector, Project Branch E, DRP  
Z. K. Dunham, Resident Inspector, Project Branch E, DRP  
B. W. Tindell, Reactor Inspector, DRS  
P. J. Elkmann, Emergency Preparedness Inspector, DRS  
Approved By: W. B. Jones, Chief, Project Branch E, Division of Reactor Projects  
ATTACHMENT: Supplemental Information

Enclosure

## SUMMARY OF FINDINGS

IR05000397/2003-007; 10/5/2003 - 12/31/2003; Columbia Generating Station; Other

The report covered a 3-month period of inspections by resident inspectors and announced inspections by an emergency preparedness inspector. One Green noncited violation was identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using 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: Barriers

- Green. The inspectors identified a violation of Technical Specifications Surveillance Requirement 3.6.1.3.11, in that Energy Northwest had performed inadequate main steam isolation valve local leak rate testing since initial plant startup. The testing was inadequate because Energy Northwest utilized nonsafety related instrument air to help close and seat the valves during testing. The instrument air system provided substantially more seating pressure than the safety-related air accumulators.

The issue had more than minor safety significance because it impacted the barrier cornerstone attribute for containment isolation through verification of safety system components for containment isolation. The established safety system component testing did not ensure the operational capability of the main steam isolation valves to perform their accident mitigating function. The issue was of very low safety significance because the finding did not represent an actual open pathway in the physical integrity of the reactor containment (Section 4OA5).

### 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 Energy Northwest's corrective action program. These violations and corrective actions are listed in Section 4OA7 of this report.

Enclosure

## REPORT DETAILS

### Summary of Plant Status

The inspection period began with Columbia Generating Station at 100 percent power. Operators maintained the plant at essentially 100 percent power for the entire inspection period.

#### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R01 Adverse Weather Protection (711111.01)

##### a. Inspection Scope

The inspectors completed two occurrences of adverse weather protection this inspection period. From November 3 through 13, 2003, the inspectors reviewed Energy Northwest's measures to ensure adequate adverse weather (extreme cold) protection for two mitigating systems. Specifically, the inspectors reviewed design features including heat tracing and ventilation heating, equipment, and Energy Northwest preparations associated with standby service water and emergency diesel generator heating and ventilation. Additionally, the inspectors reviewed operations' cold weather Procedure PPM 3.1.9, "Cold Weather Operations," Revision 5, to ensure that the referenced equipment had been placed in their respective cold weather alignments.

The following additional documents were reviewed during the inspection:

- Problem Evaluation Request 2003-1006, SW-V-694B Yoke Bushing Broke and is Stuck Open, March 27, 2003
- Problem Evaluation Request 2003-3991, Broken Stem Nut on SW-V-694B Affects the Ability to Perform SOP-SW-COLD Weather, November 5, 2003
- Procedure SOP-SW-Cold Weather, Standby Service Water Cold Weather Operations, Revision 1
- Procedure PPM 2.10.4, Diesel Generator and Cable Cooling HVAC (heating ventilation and air conditioning), Revision 23
- Work Order 01046658, Calibrate and Function HT-HTP-FP/23
- Work Order 01046659, Calibrate and Function HT-HTP-FP/10
- Work Order 01046657, Calibrate and Function HT-HTP-FP/27
- Work Order 01046663, Calibrate and Function HT-HTP-FP/6

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b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

a. Inspection Scope

The inspectors performed one partial walkdown of the Division 2 125 VDC safety related battery and associated DC distribution system on December 16, 2003, while the Division I 125 VDC battery was inoperable during a battery cell replacement. The inspectors utilized facility drawings, procedures, and alignment checklists to verify the correct system alignment. The inspectors then compared the as-found condition of the system to verify that it could perform its safety function.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

1. Quarterly Walkdowns

a. Inspection Scope

The inspectors performed walkdowns of eight fire protection areas (8 occurrences) 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 described in the Final Safety Analysis Report, Section 9.5.1, "Fire Protection System," and Appendix F, "Fire Protection Evaluation." The fire areas inspected were:

- Fire Area RC-11, Division I air conditioning room, October 28
- Fire Area RC-12, Division II air conditioning room, October 28
- Fire Area R-1, Control rod drive pump room, November 21
- Fire Area M-27, Instrument Rack E-IR-H22/P021 room, November 21
- Fire Area R1, 522 elevation reactor building, November 21
- Fire Area M-73, Instrument Rack E-IR-73 room, November 21
- Fire Area R-3, High pressure core spray pump room, November 21



- Fire Area RC-7, Division II battery charger and reactor protection system, November 26

b. Findings

No findings of significance were identified.

2. Annual Drill

a. Inspection Scope

The inspectors observed and evaluated a fire protection drill on August 11, 2003. The inspectors considered whether the drill scenario properly demonstrated the use of fire fighting equipment and that the subsequent drill critique was self-critical. The inspectors had reviewed the fire protection drill as part of the 50-397/0030006 inspection cycle. The following documents were reviewed as part of this inspection:

- Drill Scenario
- Attribute Checklists

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors selected one area, external flooding, for this inspection period. Per the Columbia Generating Station Final Safety Analysis Report Section 2.4.2 and 3.4.1.5.1, the plant has no external flood threat, either by ground water or from the nearby Columbia River. The inspectors verified that no other external flood threats exist.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07A/71111.HS)

a. Inspection Scope

The inspectors reviewed four heat exchanger performance tests for this inspection. Heat exchangers inspected included the Division I emergency diesel generator cooling water heat exchangers (2) and the Division I and II standby service water pump house room coolers (2). Because the procedure was a pilot, the inspectors performed both the "Biennial Testing and Inspection Performance Review," and the "Biennial Programmatic

and Functional Performance Review.” The inspectors performed independent calculations, conducted interviews and reviewed procedures and design documents to verify the acceptability of test methods/conditions, acceptance criteria, use of instrument uncertainties, frequency of testing, biofouling controls, compliance with design parameters, and the extrapolation of test data to design conditions. The inspectors also reviewed a sample of Energy Northwest identified problems to ensure that appropriate corrective measures were taken and assessed the overall condition of the ultimate heat sink (standby service water spray ponds). Documents reviewed and utilized during this inspection included:

- Final Safety Analysis Report
- Technical Specifications
- Technical Memorandum TM-2111, “Thermal Performance Testing of the Air-to-Water Heat Exchangers in the WNP-2 SW Systems”
- Work Order 01049614, DCW-HX-1A1 and 1A2 thermal performance testing, testing on December 4, 2002
- Procedure TSP-SW-A101, “Service Water Loop A Cooling Coil Heat Load Capacity Testing,” Revision 0, conducted on July 21, 2003
- Procedure TSP-SW-A102, “Service Water Loop B Cooling Coil Heat Load Capacity Testing,” Revision 0, conducted on July 21, 2003
- Calculation 9.46.04, “Peak Room Temperatures,” Revision 0
- Calculation ME-02-92-43, Sheet G-280, “Standby Service Water Pump House A,” Revision 7
- NRC Generic Letter 89-13, “Service Water System Problems Affecting Safety-Related Equipment,” dated July 18, 1989
- Problem Evaluation Request 203-3323, Unexpected standby service water flow changes, dated November 4, 2003
- Problem Evaluation Request 203-3041, Unplanned equipment inoperability due to low service water cooling flow to room cooler, dated August 14, 2003
- Problem Evaluation Request 203-1774, Service water relief Valve SW-RV-001B failed as found set point test, dated May 19, 2003

b. Findings

No findings of significance were identified.

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1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On November 24, 2003, the inspectors observed one licensed operator requalification training exam as operators participated in a scenario on the plant simulator. The inspectors evaluated crew performance in terms of formality of communication, prioritization of actions, annunciator response and implementation of procedures. The inspectors also evaluated simulator fidelity by comparing simulator configurations with the plant control room.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors performed three in-office reviews (3 occurrences) of safety-related systems to evaluate Energy Northwest's assessment of availability and reliability of risk-significant structures, systems and components.

- On October 30, 2003, the inspectors selected the automatic depressurization system for routine review of a safety-related system.
- On December 9, 2003, the inspectors selected the 125 and 250 VDC safety related batteries for routine review.
- On December 12, 2003, the inspectors selected the high pressure core spray system for routine review of a safety-related system.

The inspectors utilized the following documents for these inspections:

- Columbia Generating Station Maintenance Rule Program Biannual Period Status Report, January - June, 2003
- Procedure TI 4.22, Maintenance Rule Program, June 19, 2001
- Columbia Generating Station Maintenance Rule Scoping Matrix, October 30, 2003
- NUMARC 93-01, Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, Revision 2

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed two operability evaluations (2 occurrences) to assess Energy Northwest's assessment of operability for degraded or non-conforming equipment. The inspectors reviewed the Final Safety Analysis Report, Technical Specifications, plant drawings, and associated problem evaluation requests as criteria for this inspection.

- Problem Evaluation Request 203-3942, Plant entered Technical Specification 3.0.3 due to both trains of control room emergency filtration being inoperable, November 1, 2003
- Problem Evaluation Request 203-3767, Containment atmosphere control system performance testing showed degraded performance in some instances

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors completed two occurrences of operator workarounds on November 21 and December 12. The inspectors evaluated the potential affects of the workarounds on the operator's ability to implement abnormal or emergency operating procedures and the cumulative effects of workarounds on the reliability and availability of plant systems.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

On November 7, 2003, the inspectors completed one permanent plant modification inspection related to Instrument Setpoint Change Request 1378. The purpose of this modification was to change a low flow setpoint associated with the control room emergency filtration system pre-heaters to ensure system operability during design flow conditions. The change was necessary because Energy Northwest had identified inadequate flow settings. The inspectors considered whether the change could

adversely affect the design and licensing basis of the facility. The inspectors also verified that the setpoint change was implemented in accordance with Energy Northwest's applicable procedural requirements and that the new setpoints supported continued system operability.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors performed an in-office review of six postmaintenance tests. The inspectors considered whether Energy Northwest properly implemented procedural controls, as applicable, and that each test adequately demonstrated equipment operability. The inspectors also considered whether Energy Northwest met Technical Specification and licensing basis requirements. The inspection sample included:

- Work Order 01032547, Testing following the replacement of Division 1 emergency diesel generator loss of field excitation Relay DG-RLY-40/DG1, in-office review on November 5, 2003
- Work Orders 01070029 and 01070028, Testing following replacement of position indication relays for vacuum Breakers CVB-RLY-V/1ST/R3 and R4, and CVB-RLY-V/1NP/R1 and R2, in-office review on December 7, 2003
- Work Order 01070181, Testing following Battery E-B1-1 Cell 13 replacement, in-office review on December 17, 2003
- Work Order 01059303, Testing following Division II emergency diesel generator soakback Pump DLO-P-11B2 replacement, in-office review on November 18, 2003
- Work Order 01065423, Testing following high pressure core spray system Pump HPCS-P-3 bearing replacement, in-office review on December 15, 2003
- Work Order 01069616, Testing following rod drive control system data card replacement, in-office review on December 19, 2003

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors evaluated the two surveillance tests listed below. The inspectors reviewed Technical Specifications, 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 also 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.

- Procedure ISP-MS-Q902, "RPS and Isolation Reactor Vessel Level Low, Level 3, RCIC [Reactor Core Isolation Cooling] Isolation, Level 8 - CFT/CC," Revision 4, performed on November 13, 2003, direct observation
- Procedure OSP-ELEC-M703, "HPCS Diesel Generator Monthly Operability Test", Revision 20, performed on December 10, 2003 - direct observation

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert Notification System Testing (71114.02)

a. Inspection Scope

The inspector discussed with Energy Northwest staff the status and condition of offsite siren and tone alert radio systems to determine the adequacy of their methods for testing the alert and notification system in accordance with 10 CFR Part 50 Appendix E. Energy Northwest's alert and notification system testing program was compared with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, Federal Emergency Management Agency (FEMA) Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants," and Energy Northwest's current FEMA-approved alert and notification system design report. The inspector completed the required one sample during this inspection.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspector discussed with Energy Northwest staff the status and condition of the primary and backup systems for staffing emergency response facilities. The inspector reviewed the results of Energy Northwest verification tests for installation of a new automated dialing system, and reviewed the results of 4 quarterly response drills conducted in 2002 and 2003. The inspector reviewed the following documents related to the emergency response organization augmentation system to determine Energy Northwest's ability to staff emergency response facilities in accordance with the emergency plan and the requirements of 10 CFR Part 50 Appendix E. The inspector completed the required one sample during this inspection.

- EPI-13, "Automated Notification System," Revision 3
- Win2000 Autodialer Test Plan (General)
- Win2000 Autodialer Test Plan, Scenario Acceptance Tests (17 scenarios)

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspector performed in-office reviews of:

- Editorial changes to Revision 31 of Emergency Plan Implementing Procedure 13.1.1, "Classifying the Emergency," and Revision 11 of Emergency Plan Implementing Procedure 13.1.1A, "Classifying the Emergency - Technical Bases." These changes lowered the threshold wind speeds and increased the associated averaging times for emergency action levels 9.4.U.2 and 9.4.A.2 in the Hazards/Natural Events emergency action level category.
- Revisions 35 and 36 to the Emergency Plan. These changes added one position and removed five positions from the emergency response organization, and clarified requirements for evacuating personnel from the site during an emergency.

These revisions were compared to their previous versions, to the criteria of NEI 99-01, "Methodology for Development of Emergency Action Levels," Revision 2, and to the requirements of 10 CFR Part 50.47(b) and 50.54(q) to determine if they decreased the effectiveness of the emergency plan. The inspector completed the required three samples during this inspection.

The inspector also performed an in-office review of Revision 32 to emergency plan implementing procedure 13.1.1, "Classifying the Emergency," and Revision 12 to emergency plan implementing procedure 13.1.1A, "Classifying the Emergency - Technical Bases." The inspector performed an on-site review of calculation NE-02-03-6, "Determine EOF and SAG Action Levels...", Revision 0. These revisions changed the reactor vessel water level threshold in emergency action levels 2.1.S.1, 2.1.G.2, 4.1.G.1, 6.1.G.1, Table 1, "TCS Barrier Loss Indications," and Table 6, "Fuel Clad Potential Loss and RCS Loss Criteria," from -192 inches to -183 inches. These revisions were compared to their previous revisions, to the criteria of NEI 99-01, "Methodology for Development of Emergency Action Levels," Revision 2, and to the requirements of 10 CFR Part 50.47(b) and 50.54(q), to determine if the revisions decreased the effectiveness of the emergency plan. The inspector completed 2 samples during this inspection.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspector reviewed the following documents related to Energy Northwest's corrective action program to determine Energy Northwest's ability to identify and correct problems in accordance with 10 CFR Part 50.47(b)(14) and 10 CFR Part 50 Appendix E. The inspector completed the required one sample during this inspection.

- SWP-CAP-01, "Problem Evaluation Requests," Revision 7
- SWP-CAP-07, "Department Trend Review Program," Revision 0
- Emergency Preparedness Program Audit, AU-EP-02, April 2002
- Emergency Preparedness Program Audit, AU-EP-03, March 2003
- Emergency Preparedness Program Assessment, SA-02-113
- Integrated Performance Assessment Report, July through December 2002
- Integrated Performance Assessment Report, January through June 2003
- Team D Drill Report for January 14, 2003
- Team B Drill Report for May 6, 2003
- Team C Drill Report for October 28, 2003



- Team A Drill Report for November 4, 2003
- Summaries of approximately 250 corrective actions assigned to the emergency preparedness department during calendar years 2002 and 2003
- Details of 26 selected corrective actions

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors inspected two drills this period. First, on November 24, 2003, the inspectors observed a simulator drill in which the control room staff was required to make and report emergency classifications in response to a simulated accident. Second, the inspectors reviewed logs, after action reports and observed the management drill critique for a site emergency preparedness drill that was conducted on November 4, 2003. The inspectors reviewed the facility emergency plan implementing procedures and the Emergency Plan to establish the criteria for the drills. Additionally, the inspectors reviewed the completed emergency action level declaration and notification forms to verify proper emergency action level declarations and protective action recommendations. Lastly, the inspectors reviewed Energy Northwest's evaluation of the drills to ensure that any performance deficiency associated with classification, notification, and protective action recommendation development was accurately characterized.

b. Findings

No findings of significance were identified.

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Cornerstone

a. Inspection Scope

The inspectors assessed the accuracy of the following performance indicator. The inspectors compared the data with operator logs, equipment out of service logs, and corrective action documents for the last four quarters. The inspectors verified that Energy Northwest calculated performance indicators in accordance with NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2.

- Safety System Unavailability - BWR Heat Removal System (Reactor Core Isolation System)

b. Findings

No findings of significance were identified.

.2 Emergency Preparedness Cornerstone

a. Inspection Scope

The inspector sampled Energy Northwest submittals for the performance indicators listed below for the period July 2002 through September 2003:

- Drill and Exercise Performance
- Emergency Response Organization Participation
- Alert and Notification System Reliability

The definitions and guidance of NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 2, were used to verify Energy Northwest's basis for reporting each data element to ensure the accuracy of performance indicator data reported during the assessment period. Energy Northwest performance indicator data was also reviewed against the requirements of Procedure 1.10.10, "Regulatory Assessment Performance Indicator Reporting," Revision 3, and Emergency Planning Instruction EPI-18, "Emergency Preparedness NRC Performance Indicators," Revision 6. Drill and exercise performance was compared to the requirements of EPIP 13.1.1, "Classifying the Emergency," Revision 32, EPIP 13.4.1, "Emergency Notifications," Revision 28, and EPIP 13.8.1, "Emergency Dose Projection System Operations," Revision 23.

The inspector reviewed a 100 percent sample of drill and exercise scenarios and licensed operator simulator training sessions, notification forms, and attendance and critique records associated with training sessions, drills, and exercises conducted during the verification period. The inspector reviewed selected emergency responder qualification, training, and drill participation records. The inspector reviewed alert and notification system testing procedures, maintenance records, and a 100 percent sample of siren test records. The inspector also interviewed Energy Northwest personnel responsible for collecting and evaluating performance indicator data. The inspector completed the required three samples during this inspection.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Annual Sample Review

a. Inspection Scope

The inspectors reviewed one plant issue to verify that equipment, human performance, and programmatic issues were being identified by Energy Northwest at an appropriate threshold and were being entered in the corrective action program. The following issue was evaluated during this inspection period:

- Nine occurrences of Division 1 and Division 2 125 and 250 VDC battery cells not meeting Technical Specification category A and B limits since September 2002. Two of the occurrences were associated with battery cell inoperability.

The following performance attributes were evaluated:

- Complete and accurate identification of the problem
- Evaluation of operability
- Consideration of extent of condition and common cause
- Classification and prioritization of the resolution
- Identification and completion of corrective actions

b. Findings

No findings of significance were identified.

.2 Review of Emergency Preparedness Related Problem Evaluation Requests

a. Inspection Scope

The inspector selected 26 Problem Evaluation Requests for detailed review, based on their impact on the risk significant planning standards, emergency worker protection, and the ability to staff and maintain emergency response facilities. The requests were reviewed to ensure that the full extent of the issues were identified, an appropriate evaluation was performed, appropriate corrective actions were identified and prioritized, and effective corrective actions were completed. The inspector evaluated the Problem Evaluation Requests against the requirements of SWP-CAP-01, "Problem Evaluation Requests," Revision 7.

b. Findings and Observations

No findings of significance were identified.

.3 Cross-References to PI&R Findings Documented Elsewhere

The inspectors documented an issue related to problem resolution, associated with inadequate main steam isolation valve (MSIV) local leak rate testing (LLRT). While Energy Northwest had originally questioned using the instrument air system to close the main steam isolation valves, they inappropriately concluded that it was acceptable. (Section 4OA5 ).

#### 4OA5 Other

(Closed) URI 50-397/2003005-04: Use of nonsafety related instrument air during MSIV LLRT. Energy Northwest had initially questioned the use of instrument air to help close and seat MSIV's during LLRT but determined that the practice was acceptable. This unresolved item was opened to allow more time to evaluate Energy Northwest's position.

#### Introduction:

The inspectors identified a violation of Technical Specification Surveillance Requirement (TSSR) 3.6.1.3.11, to verify leakage rate through each MSIV is  $\leq 11.5$  standard cubic feet per hour (SCFH) when tested at  $\geq 25.0$  psig., in that Energy Northwest had performed inadequate MSIV LLRT since initial plant startup. The testing was inadequate because Energy Northwest utilized nonsafety related instrument air to assist in closing and seating the valves during testing. The instrument air system provides substantially more seating pressure than the safety-related air accumulators. Since Energy Northwest had initially questioned the issue but came to an unacceptable conclusion, this issue is also related to the cross-cutting area of problem identification and resolution. The failure to properly evaluate a condition adverse to quality is a performance deficiency.

#### Description.

The inspectors determined that Energy Northwest's MSIV LLRT testing was inadequate, in that the use of instrument air during the tests provided additional valve seating forces that enhanced valve performance such that there was no longer a reasonable assurance that postaccident valve leakage would be less than that specified in the Columbia Generating Station Technical Specifications.

Columbia Generating Station is a 10 CFR Part 50, Appendix J, Option B plant and Energy Northwest, in part, follows the guidance in NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," Revision 0. NEI 94-01 references industry Standard ANSI/ANS-56.8-1994, "Containment System Leakage Testing Requirements," Section 3.3.3 Containment Isolation Valve Closure which states, "Closure of primary containment isolation valves for Type C testing [the applicable testing in this case] shall be accomplished by normal or equivalent means and without adjustment (e.g., no hand tightening of remotely operated valves after closure)." Exercising valves for the purpose of improving leakage performance shall not be permitted.

The inspectors determined that Energy Northwest's testing of the MSIVs was not consistent with 10 CFR Part 50, Appendix J, and that the testing as performed was inconsistent with 10 CFR Part 50.36 (for TSSRs) and their submittal to the NRC requesting approval of TSSR 3.6.1.3.11.

Enclosure

The inspectors considered the following points regarding design requirements, regulations, the licensee's amendment request for TSSR 3.6.1.3.11 and operating experience:

- Energy Northwest derived MSIV performance requirements from Calculation 5.45.07, "Post-LOCA MSIV Leakage Calculation," Revision 1. This calculation determined the permissible postaccident MSIV leakage in order to demonstrate compliance with 10 CFR Part 50, Part 100 requirements during a design basis accident. The calculation identified the leakage limit as  $\leq 11.5$  SCFH per valve. The design basis accident assumed a loss of instrument air. The leakage limit identified in the calculation was the foundation for the  $\leq 11.5$  SCFH limit, per valve, specified in TSSR 3.6.1.3.11.
- 10 CFR Part 50, Appendix J, which states, in part that, "The purposes of the tests are to assure that (a) leakage through the primary reactor containment and systems and components penetrating primary containment shall not exceed allowable leakage rate values as specified in the technical specifications..."
- Energy Northwest's submittal, dated December 8, 1995, included TS Bases Section 3.6.1.3.11, which states:, "The analysis in Reference 1 [FSAR, Chapter 6.2] are based on leakage that is less than the specified leakage rate [11.5 scfh]. Leakage through each MSIV must be  $\leq 11.5$  scfh when tested at  $P_t$  ( $\geq 25$  psig). This ensures that MSIV leakage is properly accounted for in determining the overall primary containment leakage rate..." Energy Northwest's testing with instrument air would not ensure that MSIV leakage is properly accounted for in determining the overall primary containment leakage rate.
- 10 CFR Part 50.36, TSSRs states that, "requirements relating to test... to assure that the necessary quality of systems and components is maintained,... and that the limiting conditions for operation will be met." The Limiting conditions for operation are: "the lowest functional capability or performance levels of equipment required for safe operation of the facility." Energy Northwest's testing methods are inconsistent with the above because they would not ensure that the MSIVs are capable of their lowest functional capability required for safe operation of the facility ( $\leq 11.5$  scfh under accident conditions).
- The NRC had previously addressed a similar issue in NRC Information Notice 85-84, "Inadequate Inservice Testing of MSIVs." The information notice states, in part, "the practice of performing inservice testing of components, which are relied on to mitigate the consequences of accidents, with sources of power not considered in the safety analysis, is not in keeping with the objective of periodic testing. This objective is to test equipment to verify operational readiness under conditions that reasonably duplicate the design basis." In this case, Energy Northwest had utilized a nonsafety related power source (instrument air) during the LLRT (a type of inservice testing). The nonsafety related power source significantly impacted the test results such that the testing did not reasonably duplicate the design basis conditions.

The inspectors determined the issue was not an immediate or existing safety concern. Energy Northwest performed an assessment to verify that the MSIVs maintained adequate performance margin so that, if the testing had been performed under appropriate conditions, the valves would have passed.

Assessment:

The issue had more than minor safety significance because it impacted the barrier cornerstone attribute for containment isolation through verification of safety system components for containment isolation. The established safety system component testing did not ensure the operational capability of the main steam isolation valves to perform their accident mitigating function. The inspectors utilized the Significance Determination Process, as described in NRC Manual Chapter 0609, to assess the safety significance of the issue. Per the Phase 1 screening criteria, Attachment A, Containment Barriers Section, Item 3, the inspectors determined that the issue was of very low safety significance because the finding did not represent an actual open pathway in the physical integrity of the reactor containment.

Enforcement:

The inspectors identified a violation of TSSR 3.6.1.3.11, to verify leakage rate through each MSIV is  $\leq 11.5$  scfh when tested at  $\geq 25.0$  psig. The leakage rate testing as performed was inadequate because Energy Northwest utilized nonsafety related instrument air to assist in closing and seating the valves during testing and therefore did not verify the lowest functional capability or performance levels of equipment (MSIVs) required for safe operation of the facility. Energy Northwest entered the issue into their corrective action program as Problem Evaluation Request 203-2382. Because the finding was of very low safety significance, and was entered into Energy Northwest's corrective action program, this issue is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-397/03-07-01, Inadequate Local Leak Rate Testing Due to Use of Nonsafety Related Instrument Air).

4OA6 Management Meetings

Meetings, Including Exit

Regional and resident inspectors conducted exit meetings with members of Energy Northwest's management during the inspection period. The meetings included:

- On November 10, 2003, an emergency preparedness inspector presented a portion of the inspection results to Mr. C. Moore, Supervisor, Emergency Planning, and other members of the staff.
- On December 18, 2003, an emergency preparedness inspector presented the remaining emergency preparedness inspection results to Mr. V. Parrish and other members of his staff.

- On December 22, 2003, the Senior Resident Inspector provided the remaining inspection results to Mr. S. Oxenford, Plant Manager and other members of Energy Northwest's staff.

Energy Northwest acknowledged the inspection results during each meeting. Following the meetings, the inspectors asked Energy Northwest whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

#### 4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by Energy Northwest and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as NCVs.

- Energy Northwest identified a violation of TS 5.4.1.a for an inadequate control room emergency filtration testing procedure. TS 5.4.1.a requires that written procedures be established for the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Appendix A, requires in part that instructions for changing the modes of operation should be prepared for the Control Room Heating and Ventilation Systems. On October 31, 2003, Energy Northwest was performing Procedure PPM 8.3.417, "Control Room Envelope for Unfiltered In-Leakage Tracer Gas Test," Revision 1, which prescribed placing the control room emergency filtration system in different operating configurations for testing of the control room envelope in-leakage. The procedure was inadequate because it directed that both remote air intakes and the normal air intake for the control room emergency filtration system be closed. Consequently, the system was rendered inoperable for approximately 4 hours. This procedural step was contrary to Final Safety Analysis Report, Section 9.4, which stated that both remote intakes are not isolated at the same time to ensure the control room is pressurized. Energy Northwest documented the issue in their corrective action program as Problem Evaluation Request 203-3975. This finding affected the barrier integrity cornerstone but was of very low safety significance because it only represented a degradation of the radiological barrier function for the control room.
- 10 CFR Part 50.54(q) requires in part that Energy Northwest submit to the NRC a report of each change made to the emergency plan without prior NRC approval within 30 days after the change is made. Contrary to this, Emergency Plan Revision 33 was submitted to the NRC 43 days after changes were made. This was identified in Energy Northwest's corrective action program as Problem Evaluation Request 2003-0545. This finding is Severity Level IV because the failure was administrative in nature, and the failure to submit required information to the NRC in a timely manner affects the regulatory process.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee Personnel

J. Parrish, Chief Executive Officer  
D. Atkinson, Vice President, Technical Services  
P. Ankrum, Licensing Engineer  
I. Boreland, Manager, Radiation Services  
D. Coleman, Manager, Performance Assessment and Regulatory Programs  
D. Feldman, Operations Manager  
C. King, Manager, Chemistry  
C. Moore, Supervisor, Emergency Planning  
W. Oxenford, Plant General Manager  
J. Parrish, Chief Executive Officer  
C. Perino, Manager, Licensing  
S. Scammon, Manager, Resource Protection  
R. Webring, Vice President, Nuclear Generation

### ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened

None

#### Opened and Closed

05000397/200307-01	NCV	Inadequate Local Leak Rate Testing Due to Use of Nonsafety Related Instrument Air (Section 4OA5)
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#### Closed

05000397/200305-04	URI	Technical Specification Surveillance Requirement 3.6.1.3.11 Local Leak Rate Test Implementation (Section 4OA5)
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#### Discussed

None



## LIST OF DOCUMENTS REVIEWED

### Problem Evaluation Requests

203-4001	203-1006	203-3991	203-0298	203-3942
203-3996	203-4256	203-4230	203-4173	203-3111
202-2761	203-0146	202-3234	202-2542	202-2428
203-3084	203-4333			

### Procedures

SOP-SW-Cold Weather, Standby Service Water Cold Weather Operations, Revision 1

PPM 3.1.9, Cold Weather Operations, Revision 5

PPM 10.25.35, Testing and Setting GE CEH Relays, Revision 10

OSP-CVB/IST-M701, Suppression Chamber-Drywell Vacuum Breaker Operability, Revision 2

ESP-B11-A101, 12 Month Battery Inspection of 125 VDC E-B1-1, Revision 3

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

ISP-MS-Q902, RPS and Isolation Reactor Vessel Level Low, Level 3, RCIC Isolation, Level 8 - CFT/CC, Revision 4

Procedure 2.7.8B, 125 VDC Division 2 Distribution System, Revision 8

### Drawings

M548-1, Flow Diagram HVAC for Control and Switchgear Rooms Radwaste Building, Revision 90

### Other

CVI 02-216-13, Brasch Manufacturing Co. Instruction Manual for Electric Duct Heaters

GEK-27887G, GE Instructions Loss of Excitation Relay Type CEH51A

CVI 02-51A-00, Exide Instruction Manual for Stationary Batteries & Chargers

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

## 1EP2

TSI 6.2.3.2, "Biweekly Emergency Response River Siren Polling Test," Revision 7

"EBS Radio Acceptance Tests for Model 5220-FM-EAR"

"WNP2 Site Specific Offsite Radiological Emergency Preparedness Alert and Notification System Quality Assurance Verification," Federal Emergency Management Agency, Region X, May 1994.

## Section 1EP4

Emergency Plan, Columbia Generating Station, Revision 36  
Emergency Plan, Columbia Generating Station, Revision 37

## 1EP5

Problem Evaluation Requests:

- 202-2567, "On-Shift ERO Personnel changed without Notification to EP"
- 202-2639, "Methodology used for Dose Projection Calculations during the Evaluated Exercise was not in accordance with Procedure Guidance"
- 202-2698, "HP Technician assigned ERO Duties prior to Receiving SCBA Training"
- 202-2749, "Project HP Technicians assigned to Shift Work did not have all Requirements of Qual Group EPAI Completed"
- 202-2832, "Error concerning the Classification Notification Forms have been Ineffectively Resolved"
- 202-2918, "Potential Inadequacy exists in Requirements for Establishing TSC Radiological Access Control during Emergency Response"
- 202-3049, "EP Drill Critique Process Less than Adequate"
- 202-3110, "TSC Manager had no Obvious Backup to Demonstrate 24 hour Coverage of the TSC"
- 202-3120, "Emergency Response Field Team Vehicles are in Poor Condition with Extremely High Milage" (also 203-0103, 203-0135, 203-0155, 203-0576, and 203-0690)
- 202-3204, "Collateral Duties of On-Shift Support Personnel may affect Required ERO Staffing Responsibilities"
- 202-3348, "Discrepancy Identified in the Emergency Action Level Thresholds for the WEA Radiation Monitors"

- 203-0034, "OER OE15218 - Lack of Adequate Backup Power Supply for Public Address System"
- 203-0545, "Emergency Plan Revision was not Submitted to the NRC within 30 days as Required"
- 203-0850, "The Remote Shutdown Room lacks Documentation which would be needed if the Control Room must be Abandoned"
- 203-0889, "Evaluate if enough Phones to Function Effectively are available in the Control Room if TSC Staff are Evacuated to the Control Room"
- 203-0973, "Adverse Trend - Continued Problems with ERDS"
- 203-1175, "TSC Ability to maintain Habitability may be Compromised by As-Built Configuration of the TSC Access"
- 203-1255, "Since December 2000, 17 OSC Personnel have not been Provided with Documented Formal Emergency Preparedness Overview Training"
- 203-1531, "Errors and Inconsistencies were Identified in the Emergency Plan Evacuation Time Estimate Study"
- 203-2456, "POC Identified "Shot on Goal" EPlan issue during Review of EPlan Submittal"
- 203-2499, "OSC Walkdown identifies less than Adequate Conditions and needed Improvements"